UNIVERSIDADE Ð
COIMBRA

Maria João Ruivo Ventura Martins

**CULTIVATING SAFENESS
FROM THE INSIDE OUT:**
UNDERSTANDING THE PROCESSES AND
DEVELOPING A COMPASSION-BASED
INTERVENTION FOR PSYCHOSIS

setembro de 2018

Faculdade de Psicologia e Ciências da Educação da Universidade de Coimbra

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Tese no âmbito do doutoramento em Psicologia, especialidade em Psicologia Clínica orientada pelo Professor Doutor António João Ferreira de Macedo e Santos, pela Professora Doutora Célia Maria de Oliveira Barreto Carvalho, e pela Professora Doutora Paula Cristina de Oliveira de Castilho Freitas apresentada à Faculdade de Psicologia e Ciências da Educação da Universidade de Coimbra.

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A todas as pessoas que participaram nos estudos deste projeto.

Que esta atitude corajosa, importante e compassiva possa de

alguma forma ter sido útil no vosso percurso de recuperação.

Que possa ter um impacto positivo na vida de quem passa por

experiências semelhantes.

In cultivating compassion, we draw from the wholeness of our

experience — our suffering, our empathy, as well as our cruelty

and terror. It has to be this way. Compassion is not a relationship

between the healer and the wounded. It's a relationship between

equals. Only when we know our own darkness well can we be

present with the darkness of others. Compassion becomes real

when we recognize our shared humanity.

Pema Chodron
The Places That Scare You:
A Guide to Fearlessness in Difficult Times (2001)

Agradecimentos

Our individual power to effect change may not seem like much, but remember, we are all interconnected: We are One. Powerlessness itself is an illusion. Every positive action we take, no matter how small, will have an impact (Laurence Overmire, 2012)

Aos meus orientadores quero expressar o meu sincero agradecimento por me terem verdadeiramente guiado ao longo deste processo. Sinto-me privilegiada por ter podido aprender e trabalhar convosco e, sem dúvida que, os vossos olhares, diferentes, mas sempre complementares, enriqueceram todos os outputs deste projeto. Obrigada por acreditarem neste projeto e por confiarem que juntos poderíamos trazer um contributo relevante a esta área.

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Resumo

Estimular o modo afiliativo de dentro para fora: Compreensão dos processos e desenvolvimento de uma intervenção baseada na compaixão para a psicose

Introdução: Tendo em conta que as experiências que ocorrem antes, durante e após um episódio psicótico são desafiadoras e muitas vezes angustiantes, a disfunção emocional após a psicose é uma realidade amplamente comum. Embora negligenciadas durante muito tempo, as intervenções psicológicas têm benefícios importantes na capacidade de lidar com os sintomas psicóticos ou perda de funcionalidade, na redução da sobrecarga da doença e na melhoria da vida dos pacientes. Do ponto de vista do modelo recovery, as intervenções psicológicas devem promover experiências de autoconhecimento mais ricas e positivas em várias dimensões, havendo assim uma mudança de uma abordagem focada nos sintomas para uma abordagem mais baseada na pessoa. Esta mudança de paradigma tem importantes implicações clínicas e de investigação nos campos da avaliação psicológica, do estudo dos mecanismos psicológicos, e da intervenção. As abordagens comportamentais contextuais, enfatizando a importância de mecanismos como compaixão, atenção plena e aceitação, têm o potencial de serem intervenções-chave para pessoas com psicose. Assim, os objetivos deste projeto prenderam-se com: 1) contribuir para o desenvolvimento e validação de instrumentos de avaliação adequados, através a) do desenvolvimento e validação de uma entrevista clínica para perturbações psicóticas com base no modelo de recuperação, e b) do desenvolvimento e/ou validação de medidas de autorresposta; 2) ampliar a compreensão em relação aos processos subjacentes ao desenvolvimento e manutenção de sintomas psicóticos e seu impacto; e 3) desenvolver, implementar e avaliar uma nova intervenção em grupo baseada na compaixão para pessoas com psicose.

Método: O presente projeto compreende um estudo descritivo, dois estudos de revisão e dez estudos empíricos. Os estudos empíricos foram realizados com amostras clínicas de adultos com experiência de psicose. Os métodos para avaliar os participantes incluíram medidas de autorrelato, medidas preenchidas pelo clínico (entrevistas clínicas e escalas de avaliação cotadas pelo clínico) e instrumentos preenchidos por uma pessoa significativa do

participante. Três dos estudos empíricos foram estudos clínicos, intervencionais e seguiram um desenho longitudinal. Os restantes avaliaram transversalmente os participantes (seja para avaliar propriedades psicométricas de instrumentos ou para perceber as associações entre variáveis de processo e de resultado).

Resultados: Em relação aos estudos focados na avaliação, os nossos resultados destacam as propriedades psicométricas adequadas, utilidade clínica e pertinência de uma nova entrevista clínica e de medidas de autorrelato desenhadas para medir a aceitação experiencial em relação a delírios e vozes, e para avaliar a adesão à medicação anti-psicótica. No que diz respeito aos estudos que exploraram os processos subjacentes às experiências psicóticas e à recuperação, os resultados destacaram o papel nefasto da vergonha, autocrítica e medos de compaixão nas dificuldades experimentadas pelas pessoas com psicose, por um lado, e o impacto da atenção plena e do afeto positivo no sentimento de segurança em contextos sociais, por outro. Os estudos clínicos enfatizaram a segurança, adequação, aceitabilidade e utilidade das intervenções baseadas na compaixão, aceitação e atenção plena nesta população. Além disso, a intervenção COMPASS mostrou benefícios no que concerne as relações dos participantes consigo próprios e com os outros, o seu funcionamento e sintomas.

Conclusões: De maneira geral, os estudos apresentados neste projeto enfatizam a importância de variáveis contextuais na manutenção versus recuperação da psicose, desde a fase da avaliação ao planeamento e implementação da intervenção. Isto acarreta importantes implicações clínicas e de investigação, nomeadamente no que diz respeito à necessidade de promover ambientes terapêuticos de aceitação e compaixão baseados na mentalidade social de prestação de cuidados.

Palavras-chave: psicose, sintomas psicóticos, recuperação, compaixão, atenção plena, aceitação, terapia focada na compaixão, segurança no mundo social, funcionamento

Abstract

Cultivating safeness from the inside out: Understanding the processes and developing a compassion-based intervention for psychosis

Introduction: Given the challenging and often distressing characteristics of experiences occurring before, during and after a psychotic episode, emotional dysfunction after psychosis is a widely common reality. Although overlooked for a long time, psychological interventions have important benefits in coping with psychotic symptoms or loss of functions, reducing the burden of the disease and enhancing patients' lives. From the recovery model's perspective, psychological interventions should promote richer and more positive self-experiences across several dimensions, thus shifting from a symptom-focused approach to a more person-based approach. This paradigm shift entails clinical and research implications regarding assessment, research on psychological mechanisms and intervention methods and outcomes. Contextual behavioural approaches, emphasizing the importance of mechanisms such as compassion, mindfulness and acceptance, have the potential to be key interventions for people with psychosis. Thus, this projects' aims were: 1) to contribute to the development and validation of adequate assessment tools, through a) the development and validation of a clinical interview for psychotic disorders based on the recovery model and b) the development and/or validation of self-report measures; 2) to extend the understanding on processes underlying the development and maintenance of psychotic symptoms and their impact; and 3) to develop, implement and evaluate a new compassion-based group intervention for people with psychosis.

Methods: The present project comprises one descriptive study, two review studies and ten empirical studies. Empirical studies were conducted in adult, clinical samples of people with experience of psychosis. Methods to assess participants included self-report measures, clinician-reported measures (clinical interviews and rating scales) and instruments filled in by a significant-other of each participant. Three empirical studies were clinical, interventional studies and followed a longitudinal design, while the others assessed

participants cross-sectionally (either for evaluating psychometric properties of instruments or associations between process and outcome variables).

Results: Regarding the studies focused on assessment, overall our results highlight the adequate psychometric properties, clinical utility and pertinence of a new clinical interview and self-report measures designed to measure experiential acceptance towards delusions and voices, and to assess antipsychotic medication adherence. In what concerns processes underlying psychotic experiences and recovery, results highlighted the pervasive role of shame, self-criticism and fears of compassion in difficulties experienced by people with psychosis, on one hand, and the impact of mindfulness and positive affect on social safeness, on the other. Clinical studies further emphasized the safety, adequacy, acceptability and usefulness of compassion, acceptance and mindfulness-based interventions in this population. Furthermore, the COMPASS intervention showed benefits regarding self-to-self and self-to-others relationships, functioning and symptoms.

Conclusions: Overall the studies presented in the research project emphasize the importance of social rank and contextual variables in the maintenance versus recovery from psychosis, from the assessment phase to the intervention planning and implementation. This entails important clinical and research implications, namely regarding the need to foster accepting and compassionate therapeutic environments rooted on care-giving social mentalities.

List of publications

Descriptive and review studies

I. Martins, M. J., Barreto-Carvalho, C., Castilho, P., Pereira, A. T., & Macedo, A. (2015). The Clinical Interview for Psychotic Disorders (CIPD): Development and expert evaluation. *International Journal of Clinical Neurosciences and Mental Health, 2*(7). https://doi.org/10.21035/ijcnmh.2015.2.7

II. Martins, M. J., Castilho, P., Barreto-Carvalho, C., Pereira, A. T., Tróia, F., Matos, O., Santos, P., Santos, T., & Macedo, A. (2016). Assessing delusional ideation: A narrative review of self-report instruments. *Psychologica, 59*(2). https://doi.org/10.14195/1647-8606_59_2_4

III. Martins, M. J., Castilho, P., Barreto-Carvalho, C. B., Pereira, A. T., Santos, V., Gumley, A., & Macedo, A. F. (2017). Contextual cognitive-behavioural therapies across the psychosis continuum: A review of evidence for schizophrenia, schizoaffective and bipolar disorders. *European Psychologist, 22*(2), 83-100. https://doi.org/10.1027/1016-9040/a000283

Empirical studies

I. Martins, M. J., Palmeira, L., Xavier, A., Castilho, P., Macedo, A., Pereira, A. T., Pinto, A., Carreiras, D., & Barreto-Carvalho, C. (2018). The Clinical Interview for Psychotic Disorders (CIPD): Preliminary results on interrater agreement, reliability and qualitative feedback. *Manuscript submitted for publication*.

II. Martins, M. J., Castilho, P., Macedo, A., Pereira, A. T., Vagos, P. (...) & Barreto-Carvalho, C. (2018). Willingness and Acceptance of Delusions Scale: Early findings on a new instrument for psychological flexibility. *Psychosis: Psychological, Social and Integrative Approaches*. https://doi.org/10.1080/17522439.2018.1502340

III. Martins, M. J., Pinto, A., Castilho, P., Pereira, A. T., (...), & Macedo, A. (2018). Assessing antipsychotic adherence from a recovery-based perspective: Psychometric properties of a new scale. *Manuscript submitted for publication*.

IV. Martins, M. J. Castilho, P., Barreto-Carvalho, C., Pereira, A. T., Vagos, P., Carvalho, D., Pascoal, A. C., & Macedo, A. (in press). A pilot study of the Portuguese version of the Voices Acceptance and Action Scale: Psychometric properties in a clinical sample with psychosis-spectrum disorders. *Análise Psicológica*.

V. Martins, M. J., Macedo, A., Barreto-Carvalho, C., Pereira, A. T., & Castilho, P. (2018). Are shame and self-criticism the path to the pervasive effect of social stress reactivity on social functioning in psychosis? *Manuscript submitted for publication*.

VI. Martins, M. J., Castilho, P., Barreto-Carvalho, C., Pereira, A. T., Carvalho, D., Bajouco, M., Madeira, N., Santos, V., & Macedo, A. (2017). Pathways from paranoid conviction to distress: Exploring the mediator role of fears of compassion in a sample of people with psychosis. *Psychosis: Psychological, Social and Integrative Approaches, 9*(4), 330-337. https://doi.org/10.1080/17522439.2017.1349830

VII. Martins, M. J., Marques, C., Barreto-Carvalho, C., Macedo, A., Pereira, A. T., & Castilho, P. (2018). Engaging with the affiliative system through mindfulness: The impact of the different types of positive affect in psychosis. *Manuscript submitted for publication*.

VIII. Martins, M. J., Castilho, P., Santos, V., & Gumley, A. (2016). Schizophrenia: An exploration of an acceptance, mindfulness, and compassion-based group intervention. *Australian Psychologist*. https://doi.org/10.1111/ap.12210

IX. Martins, M. J., et al. (2018). Recovery through affiliation: A compassionate approach to schizophrenia and schizoaffective disorder (COMPASS). *Journal of Contextual Behavioural Science*. https://doi.org/10.1016/j.jcbs.2018.07.009

X. Martins, M. J. et al. (2018). Allowing safeness to emerge amidst the threat: Further evaluation of the COMPASS program feasibility and benefits. *Manuscript submitted for publication*.

Index

CHAPTER I | THEORETICAL BACKGROUND

CHAPTER II | RESEARCH AIMS AND METHODOLOGY

CHAPTER III | DESCRIPTIVE AND REVIEW STUDIES

CHAPTER IV | EMPIRICAL STUDIES

CHAPTER V | GENERAL DISCUSSION

Preface

CFT approaches are informed by an understanding of how our affiliative emotions and our experience of social safeness can provide a platform for psychological growth and transformation. [...] Human psychological suffering does not wait for our science to evolve. Each day, millions of our brothers and sisters are living with psychosis, and they need our help to live with peace, meaning and vitality. [...] Measure your results [...] Record your observations. Find out what works, and what could be improved. And above all, share your observations [...] (Dennis Tirch, COMPASS therapists' manual – Preface)

Motivated by the applicability and clinical utility of contextual approaches' rationales for psychosis experiences (de-shaming, non-stigmatizing, hopeful, and self-empowering) combined with the encouraging results of mindfulness, acceptance and compassion-based interventions for aiding recovery from psychosis, this projects' aims were threefold: to contribute to the further evolution of psychological and psychiatric assessment, from a person-based perspective; to extend the understanding on processes underlying the development and maintenance of psychotic symptoms and their impact; and to further explore the benefits of compassion-based group interventions for people with psychosis, providing the field with a new, manualized and empirically tested intervention. The present work is divided in five chapters whose contents are detailed bellow.

Chapter I | Theoretical background. This introductory chapter provides a literature review on both theoretical and empirical developments across the grounding areas of the present project, namely clinical presentation and understanding of psychotic disorders and psychotic symptoms; psychological interventions and recovery from psychosis; contextual behavioural approaches to psychosis, namely mindfulness, acceptance and compassion as the foundation of recovery-oriented mental health care. Regarding psychotherapeutic interventions, we begin to explore the roots of psychotherapy processes, such as the evolved mind and the nature of human suffering according to evolutionary psychology and social mentalities theory. We then present the three affect regulation systems' model (Gilbert, 2005) and highlight how it can be applied, adapted and useful for the understanding of psychosis. Psychosis is then presented as an imbalance between the three systems and the empirical literature on the outputs of an overdeveloped threat-defense system is presented (i.e. studies with people with psychosis on shame, self-criticism, experiential avoidance, fears of affiliative emotions). Considering that, within the

compassion-focused therapy framework, recovery would be pursued through fostering balance in the affect regulation's systems, empirical studies regarding the outputs of this balance and/or of the soothing-safeness system are also illustrated (i.e. compassion, self-compassion, acceptance, mindfulness, social safeness). Finally, aims, processes and techniques of compassion-based approaches, more broadly, and compassion-focused therapy, in particular, are detailed, along with their empirical results with people with psychosis.

Chapter II | Aims and methodology. This chapter is aimed at providing a connection between the literature review and the aims of the present project. We start with summarizing the conclusions of international and national research with emphasis on the existing gaps and new research questions. Then, we present this project's general and specific research aims also detailing each study's specific objectives. The development of the COMPASS intervention is explained, through highlighting its theoretical and clinical foundations and briefly describing the program and the materials developed. Although specific methodology is described in each study's methods section, here we present the research design and general methodology used throughout the project (i.e. sample collection procedures, ethics and legislation, measures, and statistical analysis), highlighting the reasons behind our design/methodology choices.

Chapter III | Descriptive and review studies. This chapter comprises three descriptive and review studies, both regarding psychological assessment in people with psychosis and new treatment approaches. The results, considerations and conclusions of these preliminary studies informed the subsequent empirical studies.

Descriptive/Review **study I**: *The Clinical Interview for Psychotic Disorders (CIPD): Development and expert evaluation* – presents a new clinical interview developed in this project along with data on experts' evaluation.

Descriptive/**Review study II**: *Assessing delusional ideation: a narrative review of self-report instruments* – explores, in a narrative review, the existing self-report questionnaires designed to assess delusions in people with psychosis.

Descriptive/**Review study III**: *Contextual cognitive-behavioural therapies across the psychosis continuum: A review of evidence for schizophrenia, schizoaffective and bipolar disorders* – is a literature review using systematic methods to understand the benefits of contextual interventions in the psychosis continuum.

Chapter IV | Empirical studies. Ten empirical studies are presented in this chapter, divided in three major themes/types, following the general and specific aims of this project.

Assessment and psychometric studies[1]

Empirical study I – *The Clinical Interview for Psychotic Disorders (CIPD): Preliminary results on interrater agreement, reliability and qualitative feedback* – presents psychometric properties of the new clinical interview combining quantitative and qualitative data on CIPD's reliability, validity and clinical utility.

Empirical study II – *Willingness and Acceptance of Delusions Scale: Early findings on a new instrument for psychological flexibility* – explores the development and psychometric study of a new scale to measure self-reported experiential acceptance towards delusional thoughts.

Empirical study III – *Assessing antipsychotic adherence from a recovery-based perspective: Psychometric properties of a new scale* – pertains the development and psychometric properties of a new questionnaire to assess antipsychotic adherence from the patients' perspective.

Empirical study IV – *A pilot study of the Portuguese version of the Voices Acceptance and Action Scale: Psychometric properties in a clinical sample with psychosis-spectrum disorders* – concerns the translation, adaptation and psychometric study of the VAAS-12 to the Portuguese population.

Process studies

Empirical study V – *Are shame and self-criticism the path to the pervasive effect of social stress reactivity on social functioning in psychosis?* – details the associations between shame, self-criticism and social-related variables. It further demonstrates the mediator role of shame and self-criticism in the impact of social stress reactivity in difficulties in social functioning.

Empirical study VI – *Pathways from paranoid conviction to distress: Exploring the mediator role of fears of compassion in a sample of people with psychosis* – explores

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[1]Note on Empirical studies II-IV: Psychometric studies included assessment of dimensional structure, internal consistency and validity (in relation to associations with other measures).

fears of compassion in people with psychosis by comparing our sample with non-clinical and clinical (with depression) samples from previous studies. We also studied associations between paranoid conviction, paranoia-related distress and fears of receiving and giving compassion (to/from others and the self) and unveiled the mediator role of fears of compassion in the relationship between conviction and distress.

Empirical study VII – *Engaging with the affiliative system through mindfulness: The impact of the different types of positive affect in psychosis* – relates to the associations between mindfulness, the three types of positive affect, social safeness and psychotic symptoms. It explores the mediator role of positive affect in the relationship between mindfulness and social safeness when controlling positive and negative psychotic symptoms.

Intervention studies

Empirical study VIII – *Schizophrenia: An exploration of an acceptance, mindfulness, and compassion-based group intervention* – is a pilot study on a combined acceptance, mindfulness and compassion intervention for people with psychosis. It explores feasibility and acceptability, further illustrated by the benefits obtained by two patients.

Empirical study IX – *Recovery through affiliation: A compassionate approach to schizophrenia and schizoaffective disorder (COMPASS)* – primarily intends to detail the COMPASS intervention from its roots and starting points to its aims and session overview. We also present preliminary results on a small sample of participants that engaged in the first groups.

Empirical study X – *Allowing safeness to emerge amidst the threat: Further evaluation of the COMPASS program feasibility and benefits* – presents the results of the COMPASS clinical trial. It aims to evaluate feasibility, acceptability and potential benefits of the COMPASS intervention when compared to treatment as usual in primary (functionality, self-to-self and self-to-others relationships) and secondary outcomes (symptoms), as assessed by multiple informants.

Chapter V | General Discussion. The final chapter is devoted to an integrative and comprehensive discussion of the overall results obtained with the present project. We

synthesize and discuss the main findings highlighting their implications both to the general aim to which each finding was initially linked (i.e. assessment, processes or intervention) and to the overall field. General limitations, regarding samples, design and instruments, are disclosed and suggestions for future studies are included. On the other hand, general strengths (methodological and clinical-related) are also pointed out and broader, macro-level implications are discussed.

At the end we provide the bibliographic references used and cited throughout chapters I, II and V, considering that references used in the descriptive, review and empirical studies are presented at the end of each study.

CHAPTER I

THEORETICAL BACKGROUND

I. Theoretical background

A. Psychosis

1. Representations of psychosis: Categories, dimensions or both?

In the last decades, there has been an intense debate concerning the definitions, boundaries and characteristics of the 'psychosis' concept. Although a consensus seems far from reach in the literature, two distinct, though eventually complementary, representations of psychosis have emerged, been extensively reflected upon and studied: the categorical and the dimensional representations of psychosis.

1.1. Categorical representation of psychosis.

Current diagnostic systems, such as the fifth edition Diagnostic and Statistical Manual of Mental Disorders – DSM-5 (American Psychiatric Association, 2013) or the International Classification of Diseases – ICD-10 (World Health Organization, 1992), are mainly categorical (although, in the DMS-5, attempts have been made in order to consider dimensional variables – see Narrow & Kuhl, 2011). These systems are considered as descriptive, clinical, consensus-based, thus grounded on observable manifestations/behaviours and self-reported feelings and thoughts. Categorical systems are not rooted in any construct validators, underlying causal mechanisms or subjacent explanative/aetiological theories implying clear discontinuity between discrete entities, as has been reported by, for instance, the American Psychiatric Association (American Psychiatric Association, 1998). Nevertheless, though sharp boundaries are not to be assumed, in order to perform diagnosis, some degree of discontinuity is practically necessary (either regarding different diagnostic categories or concerning non-clinical versus clinical populations) since categories are often mutually exclusive and there is a threshold that separates 'normal' from 'abnormal' experience. Moreover, there have been reports of evidence towards a nonarbitrary boundary between, for instance, both people with and without schizophrenia and deficit and non-deficit schizophrenia (Linscott & van Os, 2010). Research utility of categorical approaches, namely success in genome-wide

association studies when comparing to other medical diagnosis, have been argued (Lawrie, 2016). Categorical representations have several advantages. Summarizing complex clinical presentations, aids in communication and clinical decision making (e.g. Clark, Cuthbert, Lewis-Fernández, Narrow, & Reed, 2017; Lawrie, 2016), and international treatment guidelines are developed for specific categories (e.g. National Institute of Health and Care Excellence – NICE). Another advantage is the high reliability in assigning patients into different diagnostic categories (which also carries important clinical and research implications) (Regier et al., 2013), including psychosis (e.g. Jakobsen et al., 2005) and first psychotic patients (Fusar-Poli et al., 2016). Moreover, several category-based instruments for diagnosis have shown adequate interrater reliability (Lobbestael, Leurgans, & Arntz, 2011) and test-retest reliability, also when considering instruments for psychotic disorders (Castle et al., 2006). Clinician tend to favour the application of diagnostic categories which are easier to use in their daily routines. Most clinical decisions are of dichotomic nature: defining which is a case or not, or to treat or not to treat, thus the utility of categories.

Psychotic disorders are classified in the DSM-5[2] under the 'Schizophrenia and other related psychotic disorders' group as encompassing "abnormalities in one or more of the following five domains: delusions, hallucinations, disorganized thinking (speech), grossly disorganized or abnormal motor behaviour (including catatonia), and negative symptoms" (APA, 2013, p. 87). The included diagnoses are presented in Table 1. Though not included in the psychotic disorders' category, DSM-5 has the specifier of 'with psychotic features' in the Bipolar I disorder category in the 'Bipolar and related disorders' chapter and in Major Depressive Disorder defined in the 'Depressive Disorders' chapter.

1.1.1. Delusional disorder.

Delusional disorder is characterized by the presence of delusional activity with at least a month of duration without functionality impairment. The absence of other psychotic symptoms (e.g. hallucinations, disorganized speech/behaviour) is required and if hallucinations are present they are not prominent and must be restrained to the delusion's theme. The theme of the delusion(s) is categorized in a specifier of type (e.g. persecutory type is the most frequent). Its lifetime prevalence has been estimated at around 0.2% (American Psychiatric Association, 2013).

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[2] Considering the absence of nationwide systematic studies in Portugal, the percentages presented throughout this chapter are the official prevalence rates reported by the American Psychiatric Association

Table 1

Diagnosis under the label of "Schizophrenia Spectrum and Other Psychotic disorders" in the DSM-5 (APA, 2013)

Code	Disorder	Specifiers
301.22 (F21)	Schizotypal (Personality) Disorder (90)	
297.1 (F22)	Delusional Disorder[a,c] (90)	Specify whether: Erotomanic type, Grandiose type, Jealous type, Persecutory type, Somatic type, Mixed type, Unspecified type Specify if: With bizarre content
298.8 (F23)	Brief Psychotic Disorder[b,c] (94)	Specify if: With marked stressor(s), Without marked stressor(s), With postpartum onset
295.40 (F20.81)	Schizophreniform Disorder[b,c] (96)	Specify if: With good prognostic features, Without good prognostic features
295.90 (F20.9)	Schizophrenia[a,b,c] (99)	
295.70 (F25.0) 295.70 (F25.1)	Schizoaffective Disorder[a,b,c] (105)	Specify whether: Bipolar type. Depressive type
	Substance/Medication-Induced Psychotic Disorder[c] (110) Note: See the criteria set and corresponding recording procedures for substance-specific codes and ICD-9-CM and ICD-10-CM coding.	Specify if: With onset during intoxication, With onset during withdrawal
293.81 (F06.2) 293.82 (F06.0)	Psychotic Disorder Due to Another Medical Condition[c] (115)	Specify whether: With delusions. With hallucinations.
293.89 (F06.1)	Catatonia Associated With Another Mental Disorder (Catatonia Specifier) (119)	
293.89 (F06.1)	Catatonic Disorder Due to Another Medical Condition (120)	
293.89 (F06.1)	Unspecified Catatonia (121) Note: Code first 781.99 (R29.818) other symptoms involving nervous and musculoskeletal systems.	
298.8 (F28)	Other Specified Schizophrenia Spectrum and Other Psychotic Disorder (122)	
298.9 (F29)	Unspecified Schizophrenia Spectrum and Other Psychotic Disorder (122)	

Note. The following specifiers apply to Schizophrenia Spectrum and Other Psychotic Disorders where indicated: [a]Specify if: The following course specifiers are only to be used after a 1-year duration of the disorder: First episode, currently in acute episode; First episode, currently in partial remission; First episode, currently in full remission; Multiple episodes, currently in acute episode; Multiple episodes, currently in partial remission; Multiple episodes, currently in full remission; Continuous; Unspecified; [b]Specify if: With catatonia (use additional code 293.89 [F06.1]); [c]Specify current severity of delusions, hallucinations, disorganized speech, abnormal psychomotor behaviour, negative symptoms, impaired cognition, depression, and mania symptoms.

1.1.2. Schizophreniform disorder and brief psychotic disorder.

These two diagnostic categories differ from schizophrenia in the duration of the episode, the expected course or the number of necessary criteria for diagnosis. Brief psychotic disorder has an estimated prevalence of 9% and is characterized by the presence of at least one psychotic symptom for a duration of more than 1 day but less than 1 month, with eventual full return to premorbid level of functioning. Schizophreniform disorder encompasses two or more psychotic symptoms (positive and/or negative) for a significant amount of time with a duration from 1 month (or less if successfully treated) to 6 months (excluding). It can be specified if with/without good prognostic features and it is estimated that about one-third of individuals with this initial diagnosis recover within the 6-month period (American Psychiatric Association, 2013).

1.1.3. Schizophrenia.

Schizophrenia is one of the most prevalent psychosis-spectrum disorders with lifetime prevalence being reported to range between 0.3%-0.7% (American Psychiatric Association, 2013). In terms of development and course, the onset of schizophrenia, that can be abrupt but is usually insidious, occurs typically between the end of adolescence and the mid-30s (American Psychiatric Association, 2013). The DSM-5 criteria for schizophrenia are presented in Table 2.

Schizophrenia was associated with an average of 14.5 years of potential life lost, with no improvement being found in studies over time (Hjorthøj, Stürup, McGrath, & Nordentoft, 2017). It is estimated that up to 6% of people with schizophrenia die by suicide and about 20% attempt suicide at least once (American Psychiatric Association, 2013). Suicide risk in schizophrenia has been associated with affective symptoms, particularly depressive mood and hopelessness, history of suicide attempt, number of psychiatric admissions, closeness to illness onset, substance abuse, among others (Popovic et al., 2014). Non-suicidal self-injury behaviours has also been reported as prevalent in schizophrenia (30% or higher) and when combined with suicidal attempts may constitute a more severe subtype, with poorer prognosis (Mork et al., 2012, 2013).

Despite the traditional view of psychosis in general, and schizophrenia in particular, as severe debilitating and chronic conditions with poor outcomes and high levels of suffering and dysfunction; and notwithstanding the deleterious consequences of symptoms and diagnosis, heterogeneous trajectories and a wide variety of outcomes have been revealed by clinical studies. Studies have found trajectories culminating in amelioration of

symptoms and also patients in which stable positive/negative symptoms and deteriorating general psychopathology symptoms were maintained. These different outcome classes were differently associated with measures of functioning, positive and negative symptoms at baseline (Jäger et al., 2014). Rates of 28-50% of symptom remission in patients with schizophrenia were found depending on criteria used (40% reported not being actively psychotic in the last two years) and rates of 22% were found for social/vocational recovery. Fifty-seven percent of individuals with schizophrenia/schizophreniform disorder reported some form of paid employment and 57% were able to function in a role at an adequate level or above (Henry et al., 2010). A systematic review with meta-analysis found remission rates of 56% and 30% regarding recovery in people with schizophrenia (Lally et al., 2017). Nevertheless, there is still debate on recovery and remission criteria (Leucht & Lasser, 2006), and rates of about 13% for recovery from schizophrenia have also been found. It has been argued that in spite of better available treatment options, the recovery rate has been stable over the last years (Jääskeläinen et al., 2013).

Table 2

Criteria for schizophrenia as stated in the DSM-5

A	Two (or more) of the following, each present for a significant portion of time during a 1-month period (or less if successfully treated). At least one of these must be (1), (2), or (3):
	(1) Delusions
	(2) Hallucinations
	(3) Disorganized speech (e.g., frequent derailment or incoherence)
	(4) Grossly disorganized or catatonic behaviour
	(5) Negative symptoms (i.e., diminished emotional expression or avolition)
B	For a significant portion of the time since the onset of the disturbance, level of functioning in one or more major areas, such as work, interpersonal relations, or self-care, is markedly below the level achieved prior to the onset (or when the onset is in childhood or adolescence, there is failure to achieve expected level of interpersonal, academic, or occupational functioning).
C	Continuous signs of the disturbance persist for at least 6 months. This 6-month period must include at least 1 month of symptoms (or less if successfully treated) that meet Criterion A (i.e., active-phase symptoms) and may include periods of prodromal or residual symptoms. During these prodromal or residual periods, the signs of the disturbance may be manifested by only negative symptoms or by two or more symptoms listed in Criterion A present in an attenuated form (e.g., odd beliefs, unusual perceptual experiences).
D	Schizoaffective disorder and depressive or bipolar disorder with psychotic features have been ruled out because either 1) no major depressive or manic episodes have occurred concurrently with the active-phase symptoms, or 2) if mood episodes have occurred during active-phase symptoms, they have been present for a minority of the total duration of the active and residual periods of the illness.
E	The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition.
F	If there is a history of autism spectrum disorder or a communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations, in addition to the other required symptoms of schizophrenia, are also present for at least 1 month (or less if successfully treated).

Note. Specifiers of course, catatonia, and current severity are available.

Equivalent rates of remission and recovery were found for first episode of psychosis and schizophrenia patients (Lally et al., 2017). Studies with pooled first episode psychosis (to note that these patients are not all diagnosed with schizophrenia neither present only schizophrenia-related symptoms) showed that 58% and 38% of patients met criteria for symptom remission and recovery respectively (mean follow up period of 5 and 7 years, respectively), with 23% meeting criteria for recovery in "worst case scenario" (Lally et al., 2017). At 5 years, about 25% presented adequate social functioning for at least 2 years (Robinson, Woerner, McMeniman, Mendelowitz, & Bilder, 2004).

Several predictors of good prognosis have been studied, such as better cognitive functioning at stabilization, shorter duration of psychosis, more cerebral asymmetry (Robinson et al., 2004), less negative, depressive and aggressive symptoms (Shrivastava, Shah, Johnston, Stitt, & Thakar, 2010), shorter duration of untreated psychosis (Penttila, Jaaskelainen, Hirvonen, Isohanni, & Miettunen, 2014; Perkins, Gu, Boteva, & Lieberman, 2005), among others. The first years after onset are seen as a "critical period" crucial for intervention (multimodal), since within this period intervention might determine illness trajectory and outcome (Birchwood & Fiorillo, 2000).

1.1.4. Schizoaffective disorder.

Schizoaffective disorder is diagnosed when, in an uninterrupted period, a major mood episode cooccurs with the presence of at least 2 psychotic symptoms, with delusions or hallucinations persisting for 2 or more weeks in the absence of the mood episode during the lifetime duration of the illness. Moreover, the symptoms of the major mood episode are present during the majority of the total duration of the active and residual portions of the illness. Lifetime prevalence is estimated to be 0.3% (American Psychiatric Association, 2013). People with schizoaffective disorder reported more current delusions and thought disorder symptoms, higher levels of lifetime positive symptoms, mood symptoms and fewer negative symptoms than patients with schizophrenia. Fewer manic symptoms and more current and lifetime psychotic symptoms than people with bipolar disorder (Mancuso et al., 2014).

In terms of outcome, schizoaffective disorder has reported similarities with both schizophrenia and bipolar disorder patients: somewhat better functioning than schizophrenia and somewhat poorer than bipolar disorder (Grossman, Harrow, Goldberg, & Fichtner, 1991). Objectively determined quality of life and service engagement was found to be intermediate in people with schizoaffective disorder in a continuum also

including major depressive disorder, bipolar disorder and schizophrenia (Kingston et al., 2018).

1.1.5. Affective disorders with psychotic features.

Bipolar disorder I is characterized by the presence of at least one manic episode and assumes that the manic and eventual depressive episode(s) are not better explained by other disorder in which they are known to appear. The estimated 12-month prevalence was up to 0.6%. The specifier for psychotic features can be used when psychotic symptoms co-occur with the major mood episode (American Psychiatric Association, 2013), which is estimated to happen in up to half of the cases (Burton et al., 2018).

For the diagnosis of Bipolar II it is needed the presence of at least one hypomanic episode and one major depressive episode in the absence of any manic episodes. The 12-month prevalence is 0.3% to 0.8%. Bipolar disorder II cannot be coded as having psychotic features but that characteristic should be written down as advised in the DSM5. Psychotic symptoms by definition do not occur in hypomanic episodes (since if they occur the episode is manic) and can only occur in depressive ones in the context of Bipolar disorder II (American Psychiatric Association, 2013). Psychotic symptoms in Bipolar disorder II have been reported as less frequent that in Bipolar disorder I (Vieta, Gastó, Otero, Nieto, & Vallejo, 1997) with an estimated lifetime prevalence of above 19% (Mazzarini et al., 2010).

Major depressive disorder is present when people present at least five depressive symptoms, one being either depressed mood or loss of interest/pleasure, with significant disfunction, in a 2-week period. "With psychotic features" is one of the available specifiers (American Psychiatric Association, 2013). In people from the general population, a prevalence of 0.4% was found for major depressive episode with psychotic features. From the subjects who fulfilled the criteria for a major depressive episode, 18.5% had psychotic features. Feelings of worthlessness and guilt were the depressive symptoms most associated with psychotic symptoms (Ohayon & Schatzberg, 2002). Lifetime prevalence of psychotic depression has been recently reported to range between 0.35% and 1%, with outcome studies reporting similar outcomes when comparing with bipolar disorder, worse when comparing with non-psychotic depression and better in relation to schizophrenia (Jääskeläinen et al., 2017).

1.2. Arguments against the categorical representation.

Notwithstanding the advantages described above for the categorical representations of psychosis, several authors have argued that the categorical explanation does not have response to two types of arguments. The first is concerning the accumulating evidence pointing to significant differences within the same diagnostic category (e.g. schizophrenia), either regarding outcomes, course, response to treatment, psychopathology, neurobiological markers or others (e.g. McGrath, 2008; Takahashi, 2013; Wigand et al., 2017).

The second is the acknowledgement that categorical representations of psychosis fail to account for, at least, three clinically observed and empirically tested forms of continuity in the psychotic experience: 1) psychotic experiences exist in a continuum in the non-clinical population; 2) there seems to be a psychosis continuum (overlap in several aspects such as symptomatic, genetic, neuroanatomic, pharmacological pathway-related) containing the different diagnostic categories; 3) there is a continuum of phenomenology across time. We will explore in more detail the two first continuums considering their relevance in the field and given their influence in our work.

1.2.1. The continuum of psychotic experiences in the non-clinical population.

This perspective refers to the idea that psychotic symptoms, such as delusions or hallucinations, exist in a continuum ranging from normality to pathology. It has been described that subclinical psychotic experiences would be more prevalent (8%) than subclinical psychotic symptoms that in turn would be more frequent (4%) than a clinical psychotic disorder (3%) (Van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009).

Several arguments have been made regarding the validity of a continuum perspective concerning psychotic symptoms in addition to the fact that psychotic/psychotic-like experiences are more prevalent that the disorder. Some examples are: similar associations of both psychotic disorders and psychotic-like symptoms with demographic variables; similar impact of genetic and non-genetic causes in clinical and non-clinical psychotic experiences; the relationship between rates of psychotic disorders and the mean level of psychosis proneness in the population; and the predictive capacity of the subclinical psychotic experiences (for a review on demographic, aetiological, community and predictive validity see Van Os et al., 2009). In fact, several empirical studies have demonstrated continuity in psychotic experiences (Barreto-Carvalho, Pinto-

Gouveia, Peixoto, & Motta, 2014; Johns & Van Os, 2001; Shevlin, McElroy, Bentall, Reininghaus, & Murphy, 2017; J. Van Os et al., 2009). Emotional, behavioural and cognitive responses to psychotic experiences seem important in distinguishing people with and without need for care (Barreto-Carvalho, Motta, Pinto-Gouveia, & Peixoto, 2017; Johns et al., 2014).

1.2.2. The continuum across psychotic disorders or the schizophrenia-bipolar axis.

The second continuum perspective and also referred to as the 'schizophrenia-bipolar axis' (Craddock, O'Donovan, & Owen, 2009; Crow, 1990; Pearlson, 2015) would range between the 'prototype bipolar disorder' and the 'prototype schizophrenia' (Craddock et al., 2009). This continuum would also include cases with both psychotic and affective features (schizoaffective or mixed disorders) that often are treated as diagnosis of exclusion and disregarded from research (Cheniaux et al., 2008; Craddock et al., 2009).

The schizophrenia-bipolar axis reflects the concerns about the dichotomous model of psychosis and tries to move towards an approach that represents more accurately the wide range of phenotypic variations and considers their biological foundations. As well known in research and clinical practice comorbidity of psychotic and mood symptoms is highly prevalent (Buckley, Miller, Lehrer, & Castle, 2009). Although in categorical representations psychotic symptoms are a specifier for bipolar disorder, studies have found that approximately half of the patients diagnosed with bipolar disorder have psychotic symptoms (Burton et al., 2018).

Results of several studies have shown a partial aetiological genetic overlap between schizophrenia and bipolar disorder (Craddock, O'Donovan, & Owen, 2005; Craddock et al., 2009; Murray et al., 2004; Purcell et al., 2009). Regarding neuropharmacological mechanisms, elevations in dopamine receptor (e.g. Pearlson et al., 1995) and good response to dopamine blockade (for a review see Murray et al., 2004) were found in both disorders. Endophenotipic comparisons have also highlighted similarities between schizophrenia and bipolar disorders, as well as the existence of a continuum of severity (with schizoaffective disorder emerging as intermediary) (for a review on etiologic, phenomenologic and endophenotypic overlap and a hypothesized continuum model of major forms of psychopathology see Pearlson, 2015).

1.3. Dimensional representation of psychosis.

Dimensional representations of psychosis preconize that instead of being of categorical nature, psychotic disorders are better be seen as comprising a set of multiple continuum dimensions (Van Os & Tamminga, 2007).

Psychosis as a transdiagnostic phenotype has been shown to have similar characteristics in clinical and non-clinical populations, to present phenomenological and temporal continuity and to underlie schizophrenia-spectrum and bipolar disorder, with overlapping affective and non-affective psychotic symptoms (van Os & Reininghaus, 2016).

Although several studies have explored the factorial structure of psychosis (with differences in methodology and measures used leading to somewhat different results) (e.g. Demjaha et al., 2009; Reininghaus et al., 2016; Russo et al., 2014) there are two main perspectives in the literature considered as important steps in a more comprehensive perspective on psychotic dimensions. This structure proved to be stable over time (being sensible to symptom-change) (Russo et al., 2014).

Russo and collaborators (2014) proposed a structure of six factors (dimensions) grouped into two high-order general factors. The first factor was described as the prototypical affective psychosis and comprised mania and disorganization dimensions. The second factor comprised hallucinations, negative symptoms, and delusions and was characterized as prototypical non-affective psychosis. Depression showed similar loadings in both factors (with opposite valence) (Russo et al., 2014).

On the other hand, a bi-factor model, with one general factor of psychosis encompassing the affective and non-affective symptom dimensions, has also been argued. The dimensions included in the general factor were: positive symptoms, negative symptoms, disorganization, mania, and depression. This model has been tested both in clinical (Reininghaus et al., 2016) and non-clinical populations (Shevlin et al., 2017) showing its validity and clinical utility.

1.4. Combined use of categories and dimensions.

The purpose of diagnosis in psychiatry and clinical psychology is to organize and comprehensively integrate several sources and types of clinical information in order to contribute to the understanding of a condition's underlying mechanisms, and especially inform clinical practice. Both representations have been found to predict clinical characteristics and risk indicators thus showing clinical utility and validity (Demjaha et al.,

2009). Evidence have accumulated for both perspectives (Linscott & van Os, 2010) and though some disparities amongst perspectives in the aforementioned debate, several authors have proposed a combined use of both representations in order to provide a more reliable, valid and ultimately clinically useful representation of the psychotic experience (e.g. Demjaha et al., 2009; Russo et al., 2014; Van Os et al., 1999). The addition of dimensional scores to diagnostic categories, and vice versa, have increased the amount of variability explained in predicting several clinical variables and risk factors (e.g. mode of onset, duration of untreated psychosis, compulsory admission) (Demjaha et al., 2009), with the combined solution presenting better results for some clinical outcomes (e.g. social disability, parasuicidal acts) than either representation alone (Van Os et al., 1999).

2. Psychotic symptoms: A brief overview.

2.1. Positive symptoms: Delusions and hallucinations.

Delusions are defined in the DSM-5 as "fixed beliefs that are not amenable to change in light of conflicting evidence" (p. 87) which may include a wide variety of themes. A recent study, in a sample of first episode psychosis, found five major themes: delusions of influence, grandiose/religious delusions, paranoid delusions; negative affect delusions and somatic delusions. Paranoid delusions were the most prevalent theme and significant associations were found among the delusional themes and hallucinations (except for grandiose/religious delusions) (Paolini, Moretti, & Compton, 2016). Delusions might include the perception that one has lost control over one's mind or body, including phenomena of thought withdrawal (thoughts were removed by an outside agent), thought insertion (thoughts put into one's mind against one's will), or delusions of control (one's body or actions are being manipulated by an outside agent) (American Psychiatric Association, 2013). It has been suggested that delusions are associated with a "jumping to conclusions" reasoning bias, a bias that appears to be specifically associated with psychosis and involves making inferences/decisions on the basis of few evidence (Dudley, Taylor, Wickham, & Hutton, 2016).

Different dimensions and correlates of delusions have been emphasized as important for clinical practice such as distress and content of beliefs (Lincoln, 2007), conviction, extension, bizarreness, disorganization, pressure, affective response, deviant behaviour resulting from delusions (grouped into delusional involvement and delusional construct) (Kendler, Glazer, & Morgenstern, 1983), belief strength, obtrusiveness, concern

(Garety & Hemsley, 1987) belief-certainty, self-monitoring, and emotional commitment (Harrow et al., 2004) among others.

Hallucinations are described as vivid, clear and uncontrollable perception-like experiences, with the impact of a normal perception, that occur without an external stimulus. Hallucinations may occur in every sensory modality (American Psychiatric Association, 2013). Lifetime prevalence of 80% was found for people with schizophrenia (at least one sensory modality) (Lim et al., 2016). Although auditory hallucinations are commonly reported as the most prevalent type of hallucinations (American Psychiatric Association, 2013), particularly verbal auditory hallucinations, Lim and collaborators revealed that only 27% of the patients reported unimodal hallucinations and 57% multimodal hallucinations. Nevertheless, auditory hallucinations were in fact the most prevalent type in the unimodal-hallucination group (68%) as well as in the multimodal group (88%) (Lim et al., 2016). The experience of 'hearing voices' is also present in a wide range of non-psychotic psychiatric disorders and non-clinical populations with distinct mechanisms being found among clinical and non-clinical voice hearers (Badcock & Hugdahl, 2012; Johns et al., 2014; Waters et al., 2012).

Conceptualizing the voice hearing experience and the interaction between the voice hearer and the voices heard according to an interpersonal approach is a growing area of interest (Chin, Hayward, & Drinnan, 2009). Voices can be conceptualized as operating in the same way as interpersonal relationships, with the voice hearing experience and content mirroring the appraisal of the self in social interactions (sense of power, social position or rank and control) (Birchwood, Meaden, Trower, Gilbert, & Plaistow, 2000).

2.2. Negative symptoms.

Negative symptoms are described as a loss or diminution of normative functions and/or a decrease in the quality of life observable by others (e.g. clinician, family members) (Kirkpatrick, Fenton, Carpenter, & Marder, 2006). These symptoms are thought to be present through the course of the disorder (including at-risk and prodromal phases) (Millan, Fone, Steckler, & Horan, 2014). There are different conceptualizations of negative symptoms (e.g. Andreasen, 1982; Kirkpatrick et al., 2006) and disagreement on the sub-domains to be included in the overall concept (Malaspina et al., 2014).

Given the consequences of the lack of agreement for effective treatment of negative symptoms, the National Institute of Mental Health (NIMH) Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS) initiative developed a

consensus definition encompassing two major types of negative symptoms – primary and secondary – and five sub-domains of negative symptoms: affective flattening, alogia, avolition, asociality, and anhedonia. Primary negative symptoms, present in about 20-25% of patients in clinical samples, are "part of the disease process itself, that is, are not secondary to such factors as depression, drug-induced akinesia, or a suspicious withdrawal" (p. 215) the latter being considered secondary negative symptoms (Kirkpatrick et al., 2006).

The subdomains would group in two general domains: diminished emotional expression (encompassing blunted/flat affect and alogia) and amotivation (including avolition, anhedonia and asociality). Affective flattening or blunting affect encompass decreases in intensity and range of emotional expression as present in verbal and non-verbal communication (e.g. facial expression, expressive gestures and other body language and in modulation of the volume, pitch, and speed of speaking). Alogia, also called poverty of speech, refers to reduced quantity and/or spontaneity of speech and loss of fluency in conversation. Amotivation (or loss of volition/avolition) is defined as the presence of deficits in initiating, maintaining and/or desiring goal-directed behaviours (e.g. work, study, sports, daily tasks, etc.) due to apathy and lack of energy, especially when tasks are effort-provoking (cognitive and/or physical) and imply significant organization. Anhedonia refers to the reduced ability to experience or anticipate pleasure. In negative symptoms anticipatory anhedonia described as the looking forward to a reward or pleasurable experience ("wanting") is more significantly impaired than consummatory anhedonia, that is, the appreciation of the experience itself ("liking"). Asociality or social withdrawal refers to the decreased interest, motivation and appreciation in relation to social interactions (Brian Kirkpatrick & Fischer, 2006; Millan et al., 2014). Although replication is still needed (Blanchard & Cohen, 2006), recent instruments aiming at specifically evaluating negative symptoms have adopted this structure, for instance, the Clinical Assessment Interview for Negative Symptoms (CAINS) (Forbes et al., 2010; Kring, Gur, Blanchard, Horan, & Reise, 2013).

The DSM-5 also acknowledges these advances in the conceptualization of negative symptoms describing them as encompassing four of the five previously described symptom sub-domains: diminished emotional expression, avolition, alogia and asociality (American Psychiatric Association, 2013).

2.3. Disorganization symptoms.

Disorganization symptoms are described in the DSM-5 as disorganized thinking (inferred from speech) and grossly disorganized or abnormal motor behaviour (including catatonia). Disorganized thinking or formal thought disorder may encompass different domains and has to have enough severity to impair effective communication: derailment or loose associations (moving rapidly among topics), tangentiality (answers with few to no relation to the question/topic being discussed), incoherence or "word salad" (severe disorganization and incomprehensiveness of speech). Regarding problems in motor behaviour, they may be revealed in any form of goal-oriented behaviour and may include catatonic behaviour (marked and severe decrease in reactivity to the environment – e.g. negativism, mutism, stupor, catatonic excitement) (American Psychiatric Association, 2013).

2.4. A note on cognitive symptoms: The relevance of social cognition in psychosis.

Although cognitive impairment is neither a diagnostic criterion for psychotic disorders (e.g. ratings of cognitive impairment severity appear in an appendix of the DSM-5) or a dimension identified for the psychosis continuum of symptoms, non-social and social cognition are of extreme relevance in psychotic disorders and interplays between cognition and psychotic symptoms have been highlighted (Madeira et al., 2016). Studies have found neurocognition and social cognition to vary in a continuum similar to other psychotic experiences (De Jong, De Gelder, & Hodiamont, 2013). Regarding affective and non-affective psychosis, recent studies have found that people with schizophrenia had performed worse than people with schizoaffective and affective disorders, with social cognition emerging as the most relevant variable to distinguish schizophrenia from other disorders (Xiao, Bartel, & Brekke, 2017).

The NIMH-MATRICS consensus defined seven cognitive domains relevant for people with psychosis: working memory, attention/vigilance, verbal learning and memory, visual learning and memory, reasoning and problem solving, speed of processing, and social cognition. These cognition domains demonstrated high reliability over time, high clinical utility as repeated measures, to be measured in practical and tolerable ways, with potential response to pharmacologic agents and significant relationship with functional outcomes (Green et al., 2004).

Both neurocognition and social cognition were associated to functional outcome with small to medium effect sizes, independent of demographic and clinical variables.

Different domains of neurocognition were differently associated with functionality outcomes (e.g. community functioning was most strongly associated with verbal fluency). Nevertheless, social cognition had stronger associations with functional outcomes than neurocognition (social cognition variables accounted for more than twice the variance in community functioning) (Fett et al., 2011). Social cognition has been argued as having a mediator role in the relationship between neurocognition and functional outcome (Schmidt, Mueller, & Roder, 2011). Moreover, authors have proposed social cognition impairment as a candidate endophenotype for schizophrenia (Green, Horan, & Lee, 2015).

Social cognition refers to the psychological operations and processes involved in perceiving, encoding, storing, retrieving and regulating information about others and the self, thus underlying social and emotional interactions with others (Green et al., 2015). The social cognitive processes that have been studied in schizophrenia are outlined by Green and collaborators (2015) with reflective processes, such as social cue perception (face perception and voice perception), mentalizing and emotion regulation considered impaired; and reflexive processes, such as emotion experience and experience sharing (motor resonance and affect sharing) described as intact or possibly intact, respectively.

3. Associated symptoms and post-psychotic distress.

In addition to psychotic symptoms, people with psychosis often present associated symptoms arising both from comorbid conditions and/or presenting themselves as consequences of psychotic symptoms or psychotic episodes. Given the challenging and often distressing characteristics of experiences occurring before, during and after a psychotic episode, emotional dysfunction after psychosis is a widely common reality. Pathways to emotional dysfunction after psychosis have been proposed and include variables as developmental aversive experiences (e.g. childhood trauma, emotional disorders during adolescence) influencing cognitive schemas about the self, others and the world and thus adaptation to psychosis and psychotic symptoms (e.g. appraisal of symptoms) (Birchwood, 2003). In this section, we briefly present the most studied post-psychotic distress symptoms and comorbidities (substance abuse, trauma, post-psychotic depression, suicidality, post-psychotic social anxiety).

3.1. Substance abuse.

Substance abuse has been shown to be more prevalent in people with severe mental illness when compared to healthy controls (Hartz et al., 2014). High rates of schizophrenia

and substance abuse comorbidity have been explained in different ways: a) common pathophysiology (genetic overlap) between the two disorders; b) "self-medication" hypothesis (substance abuse as improving some symptoms); c) diathesis-stress model (interaction between genetic predisposition and chronic substance use); and d) combination of schizophrenia-related impaired social and occupational capacity and exposure to poor social environments, concur with an increased risk of substance use (Polimanti, Agrawal, & Gelernter, 2017).

Moreover, substance abuse has been reported as a risk factor in the precipitation of a psychotic disorder such as schizophrenia. A recent, nationwide population-based, study using robust methodology, found that a diagnosis of substance abuse increased the overall risk of developing schizophrenia, even ten to fifteen years after the substance abuse diagnosis. Cannabis and alcohol abuse increased the risk by five and three times, respectively (Nielsen, Toftdahl, Nordentoft, & Hjorthoj, 2017).

Regarding the association between substance abuse and age at onset of psychosis, the age at onset was two years earlier in samples with (unspecified) substance use compared with non–substance-using controls and even higher when considering cannabis users (2.70 years) (Large, Sharma, Compton, Slade, & Nielssen, 2011). The estimated prevalence of cannabis use at first episode psychosis has been reported at 33.7% with the interval between initiation of regular cannabis use and age at onset of psychosis being around 6 years (Myles, Myles, & Large, 2016).

Differences in clinical and functional outcomes of people with psychotic disorders were found ten years after the diagnosis, depending on substance-use categories. Both episodic and persistent users had worst outcomes (e.g. symptom remission) than nonusers and people who stopped substance use within two years of diagnosis. These last two groups had similar outcomes (Weibell et al., 2017).

3.2. Trauma and trauma-related difficulties.

Trauma and trauma-related conditions are widely studied in the context of psychotic disorders. Three hypotheses regarding the relationship between trauma and psychosis have been proposed and studied: a) trauma in response to psychosis and psychiatric services (as traumatic events/contexts); b) psychosis as a reaction to trauma (precipitating influence of negative life events and/or aversive environmental conditions); and c) both psychosis and post-traumatic stress disorder as a part of a spectrum of responses to a traumatic event. Integrative models, in which a vicious circle between trauma and psychosis is created (one

influencing and being influenced by the other), have also emerged (Morrison, Frame, & Larkin, 2003).

In fact, higher prevalence of trauma related disorders has been reported in people with psychosis (e.g. Buckley, Miller, Lehrer, & Castle, 2009) and up to 40% of people with a psychotic episode within the last year presented levels of trauma symptoms with clinical relevance (Turner, Bernard, Birchwood, Jackson, & Jones, 2013). In a recent study with people diagnosed with schizophrenia, Viegas (2013) found that the recalled memory of the first episode of schizophrenia had traumatic characteristics and contributed to the frequency of paranoid delusions through current external shame.

It has been argued that a traumagenic neurodevelopmental model would be underlying the emergence of psychosis (effects present even when controlling for genetic predisposition). In fact, the strong association between aversive early experiences (e.g. emotionally overwhelming events that may constitute themselves as traumatic) and psychosis has been extensively studied and corroborated (Varese et al., 2012). For instance, both the voice hearing experience presence and the voices' content has been directly and indirectly linked to adversity exposure (McCarthy-Jones & Longden, 2016; Read, Fosse, Moskowitz, & Perry, 2014). Moreover, common neurological changes have been found in people exposed to traumatic experiences and people with psychotic symptoms (Read et al., 2014). Voice hearing in the context of 'schizophrenia' has congruently shown comparable characteristics to voice hearing in post-traumatic experiences (McCarthy-Jones & Longden, 2016). In this context, it is worth acknowledging the models informing service users' networks and survivor-led initiatives, such as the Hearing Voices Movement. These models encompass a non-diagnostic approach in which symptoms of psychosis (e.g. auditory verbal hallucinations or, as preferred, since less stigmatizing: 'voices') are meaningful, defensive, psychological responses to severe, emotionally distressing, environmental stressors (Longden, 2017).

3.3. Post-Psychotic Depression (PPD) and suicidality.

PPD, a disorder presented in the ICD-10 (World Health Organization, 1992), is known to be prevalent in psychosis samples. Thirty-six per cent of patients developed at least moderate depressive symptoms following an acute episode without increase in psychotic symptoms and 50% of first episode of psychosis (FEP) patients developed PPD (Birchwood, Iqbal, Chadwick, & Trower, 2000).

Studies have reported rates of 11% of suicide attempts one year after FEP (Nordentoft et al., 2002) and a systematic review reached a consensus on the lifetime risk of suicide of approximately 5% (for schizophrenia). Risk factors included individual (being young, male, and with a high level of education), illness-related (number of prior suicide attempts, depressive symptoms, active hallucinations and delusions, comorbid substance misuse, and the presence of insight) and familiar (family history of suicide) factors (Hor & Taylor, 2010). Emotional reactivity and negative symptoms have also been proposed as important variables (Nogueira et al., 2012).

From a psychological stance, suicidal ideation in psychosis has been associated with low self-esteem, negative illness perceptions, negative evaluative beliefs about the self and others (Fialko et al., 2006). Hopelessness and entrapment have been consistently shown as important predictors both of post-psychotic depression (Iqbal, Birchwood, Chadwick, & Trower, 2000), suicidal ideation (Li et al., 2018) and suicide risk (Pompili et al., 2007).

3.4. Social anxiety.

Social anxiety is a prevalent comorbidity among people with psychosis, although its origin is not well understood. Social anxiety disorder rates of 25% were found in people with a first episode of psychosis and rates of above 11% were reported severe difficulties in social situations (Michail & Birchwood, 2013). Twenty-nine per cent of a first episode of psychosis sample reported marked anxiety in social interactions that emerged after the FEP with the presence of social anxiety being associated with higher levels of shame, entrapment, negative social comparison (Birchwood et al., 2007). Moreover, when comparing people with social anxiety disorder and psychosis and social anxiety disorder only, comparable levels of social anxiety, autonomic symptoms and avoidance were found; and social anxiety in people with psychosis was not associated with positive psychotic symptoms (Michail & Birchwood, 2013).

B. Recovery model and recovery-based interventions for severe mental illness

1. Recovery definition(s).

There are several recovery definitions emphasizing different aspects, components, trajectories, characteristics and anchors from which to assess recovery. Although still evolving and with no consensus definition in the literature, the recovery definitions incorporate common key characteristics such being a complex and multidimensional construct encompassing a healthier, richer and more meaningful self-experience across several contexts.

Widely used working definitions of recovery include viewing recovery as 'journey of healing and transformation enabling […] a meaningful life in a community […] while striving to achieve his or her full potential' (SAMHSA, 2005); and a 'personal, unique process of changing one's attitudes, values, feelings, goals, skills, and/or roles […] living a satisfying, hopeful, and contributing life even with limitations […] development of new meaning and purpose in one's life as one grows […]' (p. 15) (Anthony, 1993). Ten elements and guiding principles of recovery were proposed. Recovery would be non-linear and based on a holistic perspective, would encompass a strengths-based approach to life and treatment, as well as individualized, person-centered care and access to peer support and would promote self-direction, increasing empowerment, sense of responsibility and hope (SAMHSA, 2005).

The most appropriate definition of recovery also depends on the purpose/objective of the people defining it – e.g. researchers defining it more in terms of outcome criteria versus consumers and family members defining it as an indefinite coping and striving process (Liberman, Kopelowicz, Ventura, & Gutkind, 2002). Therefore, there are two distinct but complementary approaches to recovery: recovery as an outcome versus recovery as a process (Silverstein & Bellack, 2008) also called clinical versus personal recovery (Slade, 2009). Recovery as an outcome is based on whether certain operationally defined criteria in certain domains are met, usually regarding psychopathology (absence/reduction in symptoms) and functioning (achieving psychosocial milestones). Recovery as a process is more related to the definitions above and refers to the subjective process of changing and embracing a meaningful life, including a broader self-concept (Silverstein & Bellack, 2008).

In a conceptual framework for personal recovery drawn from empirical studies, the 'recovery journey' is seen as an active, unique, non-linear, phased/gradual, multidimensional process, involving struggle but leading to a life-changing experience. Complementary to these characteristics, the conceptual framework also describes the recovery processes: connectedness (support from others, relationships, being part of a community), hope and optimism about the future (belief in recovery, motivation to change), identity (rebuilding a positive sense of identity overcoming stigma), meaning in life (meaning of experiences, spirituality, quality of life) and empowerment (personal responsibility, control over life and focusing on strengths) (Leamy, Bird, Le Boutillier, Williams, & Slade, 2011).

This outcome versus process perspective is intrinsically associated with a second dichotomy regarding objective (e.g. symptom severity and level of functioning) versus subjective (e.g. quality of life, personal confidence, hope, no dominance by symptoms, willingness to ask for help) aspects of recovery. Studies have found that although clinical objective recovery and subjective aspects of recovery can be conceptualized as complementary, one does not necessarily imply the other (Roe, Mashiach-Eizenberg, & Lysaker, 2011).

Recovery has also been described as a set of both internal – individuals' attitudes, experiences, and processes of change (e.g. hope, healing, empowerment, and connections) – and external conditions – circumstances, events, policies and practices (e.g. human rights, positive culture of healing, recovery-oriented services) that may facilitate recovery (Jacobson & Greenley, 2001). Regarding external conditions, the recovery model has brought to discussion several implications both in terms of clinical assessment and psychotherapy interventions.

Research informing clinical practice has been suggesting recovery-informed interventions in which the therapeutic tools and techniques should support recovery processes (Leamy et al., 2011) and measure it from an holistic perspective (Hamm, Hasson-Ohayon, Kukla, & Lysaker, 2013). Therefore, this shift to an approach more focused on a growth, self-development, empowering processes led to new advances in psychological assessment. Several instruments measuring both individual recovery and recovery orientation of services/providers have been proliferating in the past years (Burgess, Pirkis, Coombs, & Rosen, 2010; Williams et al., 2012), and validation of such measures have been made for people with psychosis (Law, Morrison, Byrne, & Hodson, 2012).

Despite the growing body of research in assessment tools within the recovery model, symptom assessment tools and diagnostic interviews for psychotic disorders seem to be somewhat aside of this movement, and clinicians and researchers usually have to combine several assessment instruments in order to perform an integrative assessment. Furthermore, even considering symptom assessment, it is important to understand the relationship people have with symptoms (e.g. conviction, perceived interference, and empowerment) in addition to frequency, severity, and duration, since such an assessment provides clinicians with intervention targets that have been associated with improvement (e.g. less symptom believability associated with lower rates of re-hospitalization – Bach, Gaudiano, Hayes, & Herbert, 2012).

2. Mindfulness, acceptance and compassion as a possible foundation for recovery-oriented mental services.

With the recovery model in mind and its emphasis on fostering hope and empowerment, mental health services and professionals have the opportunity to tailor their interventions to best suit the values and practices desired by service users (Spandler & Stickley, 2011). Recovery-oriented care has widely been advocated for people with psychosis spectrum disorders with providers' core competencies including specific therapeutic relationship skills (e.g. effective communication, appropriate self-disclosure) in addition to the technical ones (e.g. functional assessment, empowering the individual, consumer self-help and advocacy) (Silverstein & Bellack, 2008).

Compassionate acceptance has been argued to be a context in which people experiencing mental distress may develop their unique way of accepting, coping and living with their difficulties (Spandler & Stickley, 2011). The basic motivation for any therapeutic team is a compassionate motivation rooted in the caring social mentality and, specifically from a compassion-based perspective, is to be able to identify and recognize the signs of suffering of the other and to implement effective actions to alleviate it (Gilbert, 2014b; Gilbert & Irons, 2005). Mindfulness can be extremely useful in any therapeutic relationship as it has been defined as a way of paying attention with empathy, presence, and ability to listen in depth (Hick & Bien, 2008), essential in therapeutic settings, and seems to increase the quality perception of the relationship (Wexler, 2006) and even improve the results of the therapeutic process (Grepmair et al., 2007). Therefore, the helping relationship should be based on principles such as being present moment by moment, presenting a non-

judgmental understanding and loving attitude of acceptance with the constant perspective that the suffering that participants experience is part of a common human experience.

Therapeutic contexts should constitute themselves as safe and affiliative environments, rooted in an affiliative-cooperative mentality, that facilitate courage and exploration (safe/secure base) on one hand, and discourage high expressed emotion and shaming experiences on the other. Mutual helping has also been stressed as key in feelings of belonging and recovery, since the combination of the receiving care and caring for others helps people form affiliative relationships and regulate emotions (Veale, Gilbert, Wheatley, & Naismith, 2015). Although these recommendations have been directed specifically to therapeutic communities, this conceptualization can be generalized to other therapeutic settings. This is particularly important for improving health care for people with psychosis since evidence has shown psychiatric treatment and hospitalization in this context to be a potentially distressing and traumatic experience (Paksarian et al., 2014).

In summary, compassionate health care contexts would include components such as acceptance, understanding of suffering and psychosis as intelligible within individual experience and history, and a common humanity-based perspective. Compassion would be therefore a quality needed as a basis of all new innovations, policies, and practices (Spandler & Stickley, 2011). This particular therapeutic focus, in which acceptance, common humanity, equanimity and mindful presence are important vectors and compassion is the key motivation, has the potential to be more ethically responsible in terms of the general goal for mental health care interventions (de Zulueta, 2015).

C. The evolution of interventions for people with psychosis: From cognitive-behavioural therapy to contextual approaches

Although overlooked for a long time, psychosocial interventions for people with psychosis have been studied in the last decades showing consistent beneficial results in a wide range of areas, namely regarding positive symptoms, functioning, relapse rates, affective symptoms, anxiety symptoms, social and vocational functioning (Huxley, Rendall, & Sederer, 2000; Wykes, Steel, Everitt, & Tarrier, 2008). Psychological interventions have important benefits in coping with psychotic symptoms or loss of functions, reducing the burden of the disease and enhancing patients' lives (Klosterkötter,

2014; Sim, 2006). Results show that better results are achieved when combination treatment (pharmacotherapy plus psychosocial interventions) is used, compared with routine care alone (Gaudiano, 2006).

Therefore, international clinical guidelines recommend the offer of several psychosocial interventions such as Cognitive-Behavioural Therapy (CBT) both for people with persisting psychotic symptoms and people in remission, family interventions (Kreyenbuhl, Buchanan, Dickerson, & Dixon, 2010; National Institute for Health and Care Excellence [NICE], 2014), and additionally arts therapies (NICE, 2014), assertive community treatment, supported employment, skills training, and token economy interventions (Kreyenbuhl et al., 2010).

1. Cognitive-behavioural therapy.

Regarding psychotherapy in particular, CBT has been the most studied and recommended type of psychotherapy for people with psychosis (Kreyenbuhl et al., 2010; NICE, 2014). Although consensus is not easy to obtain regarding psychological therapies, studies have considered CBT superior to other psychosocial, psychotherapeutic approaches and befriending (intervention similar to placebo used in psychotherapy clinical trials) (Jones, Hacker, Cormac, Meaden, & Irving, 2012; Turner, van der Gaag, Karyotaki, & Cuijpers, 2014) in the long term in which concerns emotional regulation and depressive symptoms, though few and small differences were found (Jones et al., 2012).

Systematic reviews have highlighted CBT benefits in several outcomes, from symptoms (psychotic, mood and anxiety) to functioning, with acceptable effect sizes being found for the effectiveness of CBT for severe mental illness in general and psychosis and schizophrenia in particular (Gould, Mueser, Bolton, Mays, & Goff, 2001; Thase, Kingdon, & Turkington, 2014; Turner, van der Gaag, Karyotaki, & Cuijpers, 2014; Wykes et al., 2008). Although some have argued that smaller effect sizes were found when controlling for clinical trials' methodology (studies with high methodological rigor, including masking, have small effect sizes), it has been discussed that several issues are not accounted for in meta-analysis, for instance, heterogeneity among trials, different characteristics of patients and different outcomes ("For whom is CBT in psychosis most effective and for what outcome?") (Birchwood, Shiers, & Smith, 2014). Moreover, authors argue that CBT should not be considered a "quasi-neuroleptic" (drug metaphor: pragmatically applying an intervention that is successful in treating one disorder – depression – to another – psychosis, applying the same criteria for success – psychosis symptoms and relapse). Thus, other

targets from which to measure improvement have been suggested, such as reduced distress, emotional dysfunction, behavioural problems, interpersonal difficulties, relapse prevention and resilience, stress reactivity, stigma, self-esteem and social confidence, among others (Birchwood & Trower, 2006).

Some CBT limitations have been identified, particularly regarding high dropout rates (Startup, Jackson, Evans, & Bendix, 2005), relapse prevention (Garety et al., 2008), and difficulties in maintaining the focus of treatment on positive symptoms after remission (Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010). Moreover, although some of the proposed outcomes for CBT for psychosis above mentioned are recovery-congruent, is still not clear CBT, typically not explicitly involving an emphasis on self-experience, adequately address other targets of treatment brought into light by the recovery movement (Hamm et al., 2013)

2. Contextual cognitive-behavioural therapies: Brief overview and applications to psychosis.

The term 'Contextual Cognitive Behavioural Therapies' (Hayes, Villatte, Levin, & Hildebrandt, 2011) (CCBT) is a wide scope of therapeutic approaches. These therapies focus on broaden the person's repertoire of functional and adaptive behavioural responses to internal experiences through flexibility and acceptance. Some examples include Acceptance and Commitment Therapy – ACT (Hayes, Strosahl, & Wilson, 1999), Mindfulness-based interventions, such as Mindfulness-Based Stress Reduction – MBSR (Kabat-Zinn, 1990) and Compassion-focused Therapy – CFT (Gilbert, 2005; Gilbert & Irons, 2005). In spite of each therapy's distinctive characteristics, the CCBT approaches present some important similarities that include, among others, a specific focus on the body, the use of experiential exercises (instead of language-based strategies), and the interest on the psychological context in which the experience arises and the strategies used to deal with it (as opposed to a eliminative/reduction approach) (Hayes, 2004).

2.1. The relevance of CCBT for the psychosis continuum.

Congruently with the previously described definitions of recovery, recovery-based interventions should be strengths-based and promote a richer and more positive self-experience across several dimensions. Therefore, there is opportunity for integration of common aspects of different psychosocial approaches in the service of developing the relationship, building the person's sense of mastery (Hamm et al., 2013), and recover a

richer self-experience (reconstruction of personal narrative and enhancing capacities for metacognition) (Lysaker, Glynn, Wilkniss, & Silverstein, 2010).

In the light of the 'third wave' (Hayes, 2004) or 'contextual cognitive-behavioural therapies' (Hayes, Villatte, Levin, & Hildebrandt, 2011) (CCBT) the field has witnessed a change in the intervention paradigm (with different techniques being used with different objectives) and some different outcomes have emerged in efficacy studies (such as symptom believability, quality of life). Psychotherapeutic interventions for psychosis have been shifting from a symptom-focused approach to a more person-based approach, highlighting the importance of valued living directions, relationship with thoughts and emotions, self-to-self relationship, acceptance and willingness towards experiences and non-judgmental attention.

The CCBT for psychosis have been considered a natural evolution of the traditional cognitive-behavioural therapy aiming at a broader conceptualization and treatment approach to psychotic symptoms (Tai & Turkington, 2009). These approaches seem to have a specific potential to help the recovery process for people with psychosis due to several aspects:

1. The absence of questioning regarding the specific content or rationality of thoughts and specific focus on engagement with difficult experiences instead of focusing on symptom reduction/elimination can be important in increasing therapy adherence.

2. The focus on valued living directions and motivations and the stimulation of behavioural activation and social interactions can be particularly useful for patients with negative symptoms and/or associated depressive symptomatology.

3. Focusing on emotional regulation, reducing shame, self-criticism and helping patients find ways of activating positive affect systems may also be particularly useful for this population.

4. Moreover, helping patients understand that experiences are transient, separate from the self and a part of a continuum may help reduce fears of relapse, self-stigma, guilt and shame (de-shaming process) related to symptoms, as well as promote hope for recovery.

2.2. Empirical evidence supporting CCBT for psychosis.

Several CCBT studies have been emerging in the field of recovery in the psychosis continuum with promising results and systematic reviews and meta-analysis that might inform us on their utility and efficacy are now available.

In the last few years, systematic reviews of mindfulness and acceptance-based interventions for psychosis have proliferated. Studies have shown that these interventions appear to be feasible and have a beneficial role, as adjunct interventions, without relevant adverse effects, in the treatment of psychosis when specific adaptations are made. Efficacy data regarding clinical outcomes, although preliminary and in need of further replication, show promising results, maintained or enhanced in follow-up assessments, both in terms of symptom reduction (e.g. positive and negative symptoms, insight, general psychopathology and negative affect), increased quality of life and functioning (work and social contexts) with reduced need for acute care (e.g. hospitalizations, crisis contacts), relationship with symptoms (e.g. distress related to symptoms, fear of emotional states, fear of relapse) and emotional regulation (Aust & Bradshaw, 2017; Davis & Kurzban, 2012; Lam & Chien, 2016; Martins et al., 2017; Potes et al., 2018; Shonin, Van Gordon, & Griffiths, 2014). While some studies reported that smaller effects were found in studies with stronger methodological designs and when assessors were blind to treatment allocation (Aust & Bradshaw, 2017); others argued that most of the significant improvements on the patient outcomes were found in studies with relatively larger sample size and higher quality of study design (Lam & Chien, 2016). Dropout rates' range varied within reviews, though consistently below 25% (Martins et al., 2017). Comparisons with control groups yield inconsistent results, with some studies failing to detect differences in some outcome measures (Potes et al., 2018). These differences between systematic reviews seem to be due to different methodological choices, namely in the inclusion and exclusion criteria, affecting number and type of the studies included.

Meta-analytic studies have shown moderate efficacy (pre-post analyses) of mindfulness-based interventions for psychosis in several outcomes. with no adverse effects being reported. Nevertheless, there are still few studies (Cramer, Lauche, Haller, Langhorst, & Dobos, 2016; Khoury, Lecomte, Gaudiano, & Paquin, 2013), with different inclusion and exclusion criteria, and a consensus has not been reached.

Khoury and collaborators found that the efficacy regarding symptom-related, functioning, quality of life measures had smaller effect sizes when studies compared the Mindfulness-based intervention with a control group. Improvement was maintained at follow-up and no differences were found between treatment modalities (individual versus group). The effects were stronger for negative symptoms and for acceptance-based interventions. However, authors suggest caution in drawing definite conclusions both regarding comparisons between treatments and long-term effectiveness since heterogeneity

was moderate to high in several parameters. In an additional and extremely relevant analysis, the improvement in clinical outcomes from pre- to post-intervention was moderated by the effects of mindfulness, acceptance and compassion strategies combined together (Khoury et al., 2013).

On the other hand, in a study including only randomized controlled trials, although short-term moderate effects were found for total psychotic, positive psychotic symptoms, hospitalization rates, duration of hospitalization, and mindfulness, long-term effects were found only for total psychotic symptoms and duration of hospitalization, with no effects (short or long term) emerging for negative symptoms, affect or acceptance (Cramer et al., 2016).

Although evidence for these approaches to psychosis is growing, reviews point out several methodological limitations of current studies. For instance, the sample sizes, absence of active control conditions, no control of confounding variables, few studies reporting effect size analyses, few studies performing mediational analysis or even correlational analysis (changes in outcome associated with changes in process measures), lack of/reduced duration of follow-up assessments, high risk of bias in some parameters, absence of formal treatment fidelity assessments, among others, are important limitations present in the majority of the studies and authors advise caution in generalization of results. Moreover, there is high heterogeneity of inclusion criteria both regarding the type of participants included (psychosis versus psychosis continuum versus severe mental illness), the interventions accepted (all CCBT approaches versus mindfulness-based interventions versus mindfulness interventions excluding the ones in which mindfulness is solely a component, such as ACT) and the type of studies comprised (only RCT versus all studies).

Apart from the methodological limitations and quality of evidence, overall the majority of studies are still focused on objective aspects of recovery such as symptom reduction, diminishing symptom impact and functioning (e.g., social, work – which can be conceptualized as a reflection of psychosocial deficits or goals, also an objective aspect of recovery) (Martins et al., 2017). Although we have witnessed a change in the intervention paradigm, with different theoretical models envisioning different recovery perspectives, with new methods emerging or similar techniques being used with different objectives, few studies have focused on subjective aspects of recovery as their primary outcomes (outcomes such as quality of life and relationship with symptoms have been reported in few studies). Recovery-based outcomes in the intrapersonal dimension, such as emotional regulation, meaning in life, sense of hope, self-empowerment, self-efficacy and self-

directedness; as well as regarding interpersonal relationships, for example, integration in the community, compassionate relating, connectedness with others, sense of belonging, safeness in social situations may be useful outcomes to explore for people with psychosis and have been suggested in systematic reviews (Lam & Chien, 2016; Martins et al., 2017), intervention and process-based studies (Castilho, Pinto, et al., 2017; Martins, Marques, et al., 2018; Martins, Castilho, Santos, & Gumley, 2016).

D. Understanding the development of and recovery from psychosis: From the theoretical framework to empirical studies

According to Gilbert, Bailey and McGuire (2000) there are a few underlying factors in which psychotherapy, is rooted on and evolve from: the process of natural selection (how humans came to be humans), what humanity evolved to do (e.g. motivations and social roles) and which physiological mechanisms are behind those actions and motivations (Gilbert, Bailey, & McGuire, 2000). One might also add the nature of human suffering as one of the essential understandings from which psychotherapy should be conceptualized.

1. The evolved mind and the nature of human suffering.

The human brain is a product of evolution, has been shaped following the Darwinian 'selection for function' (Panksepp, 2004) and has been conceptualized as having a "tricky" nature. The major trade-off of human brains is the combination and interaction of 'old brain' emotions and motivations (shared with other animals) and 'new brain' abilities, such as complex thinking, theory of the mind, symbolic representation, observing, sense of self and self-identity (Gilbert, 2014b). This combination might lead to a sense coherence when we use the abilities of reflecting and understanding of one's mind and those of others to adequately engage in different social roles and social relationships. Nevertheless, emotional and mental suffering arise when this interaction 'old brain' – 'new brain' is not successful (Gilbert, 2010). The capacity to pay attention to, reflect on and interpret mental states (e.g. sensations, thoughts, feelings and emotions) of the self and others, can stimulate threat emotions and maintain these physiological systems in a state of activation in the body, even when the (perceived) threat is no longer present (Gilbert, 2014b).

Most forms of psychological suffering, conceptualized here as adaptive reactions to specific environments with the evolved function to alert to threat and elicit defensive actions (Gilbert, 1993), are related to social relationships. From an evolutionary approach, the degree to which the person's social world negatively influences the obtainment of social goals (e.g. inclusion in the group) is proportional to the experienced suffering (Gilbert, 2014b) which will, in turn, activate shame-avoidant behaviours sometimes incongruent with other self-interests (Gilbert et al., 2000).

2. Social mentalities theory.

Social mentalities are sets of related and coordinated motives, emotions, information-processing routines and behaviours originating different internal patterns of neurophysiological activity. These social mentalities would emerge in response to external signs (e.g. how others behave in relation to the self) in order to respond adequately to specific social evolutionary challenges (e.g. care-giving, mating) originating different social roles (Gilbert, 1989). Internal organization of social mentalities and their integration is shaped through engagement with the social world, during the child's development. In order to enact desired social roles in different domains in a successful way, people need to be competent in sending, receiving and decoding social signals (Gilbert, 2000).

Some of the more important archetypal social mentalities have been suggested: care eliciting, care giving, formation of alliances, and social ranking (Gilbert, 2005). Two central mentalities, that will be further explored here, are 'caring and supporting' versus 'competitive attacking' or 'social ranking' social mentalities (Gilbert, 2000).

The caring and supporting social mentality can involve both care eliciting and care giving. Care eliciting is rooted on forming relationships with others who can provide protection in order to invest in survival and emotional regulation (exclusively in mammals). Competencies in this mentality comprise assessing proximity and seeking the other, distress signalling, and responsiveness to care signals of others. Care giving, on the other hand, involves pursuing relationships motivated by the desire to increase the chances of survival, growth and reproduction of the cared other through investing time, energy and other resources. Competencies involve being able to identify and respond to distress, assess and provide for the needs of others and display empathy and sympathy (Gilbert, 2005). The combination of care-seeking and caregiving social mentalities has been theorized and empirically studied as underlying compassion and self-compassion, depending on the context the mentalities are activated. The care-seeking mentality signals distress and need

for care, and the caregiving mentality responds with compassionate thought and emotion directed inwards or outwards (Gilbert, 2005; Hermanto & Zuroff, 2016). Care-giving, care-eliciting and cooperation mentalities constitute themselves as the roots of the hedonic mode (Gilbert, 1992).

The 'competitive attacking' or 'social ranking' mentality concerns the desire for social power and guides response to (perceived) social threat, being motivated by the desire to succeed and fear of failure in which subduing, defeating or outperforming others (seen as competitors) is key. Information-processing routines (e.g. social comparison) further fuel competitive behaviour. Seeking status in the eyes of others is motivated by the striving for social acceptance, valorisation and inclusion (or control over others). Underlying these motivations there is heightened sensitivity to social comparison and shame combined with fears of 'not being good enough' and this mentality and its outputs have been associated with higher vulnerability to psychological distress and disorders (Gilbert, 2005).

Social mentalities theory is also key to understanding the inner experience of the self and the nature of the internal self-talk. It has been proposed that internal relationships strongly resemble external relationships. Therefore, internal signs would have similar (or the same) effects as external signs, and under some circumstances, they might activate brain systems that evolved to cope with threat and give rise to similar behavioural patterns. For instance, positive signals such as self-approval, self-care and self-support would lead to positive affect, confidence and exploration behaviours through the activation of certain brain patterns while self-attack, self-criticism and self-shame (negative internal signals) would lead to defensive fight-flight-submit responses. Psychosis has been presented as a prototype of this internal dominant–subordinate relationship (e.g. shaming voices seen as dominant and the self believed to be subordinate) (Gilbert, 2000) and the 'paranoid mind' would emerge due to heightened sensitivity to social threat cues, motivated by optimizing the likelihood of survival (keeping the self safe from harm), leading to attentional and attributional bias (Gumley & Schwannauer, 2007).

3. Affect regulation: The three-systems' model.

Compassion-focused Therapy, the main framework of this thesis that will be explored in detail in next sections, takes an evolutionary functional view to emotions in which three evolved functions of emotions emerge, namely to alert for threat and activate defensive strategies; to inform on availability of resources/rewards activating seeking-engagement strategies; and to inform on safeness and allow for non-action in the form of

contentment and openness (Gilbert, 2014b). These functions are described and conceptualized in the three affect regulation systems' model (Gilbert, 2005).

The three affect regulation systems' model (Gilbert, 2005) derives from research in the area of neurophysiology and neuroscience of emotion. It suggests the existence of three different but interactive emotion regulation systems (one underpinning negative affect and two positive affect-related), sensitive and responsive to different types of stimuli (Depue & Morrone-Strupinsky, 2005). These systems would be sensitive to specific signs and give rise to a series of brain patterns, mediated by specific neurotransmitters, that underlie the experience of different emotions, thoughts, and behaviours (Gilbert, 2005) and the three would have a social and a non-social side, active versus passive responses, with different outcomes (Gilbert, 1993).

The threat-defence system refers to focusing attention, detect and appropriate respond to different types of threat. In the presence of a potential threat, this system quickly, automatically and unconsciously activates a series of emotional (anger, anxiety, disgust, shame), behavioural (fight, flight, immobilization, submission), cognitive and physiological responses. The system may also remain active after the threat disappears with the focus remaining on the consequence of that threat (damage or loss) (Gilbert, 2014a). The drive system is a system of positive affect oriented towards the quest for resources geared towards survival and well-being. Bound predominantly in reaching and getting, and linked to the dopaminergic system, the emotions elicited by this system are usually experienced as exciting and activating (e.g. vitality, excitement, enthusiasm and energy). This system is also often linked to competitive motives, dominance and social status (Gilbert, 2014b). Finally, the soothing system is usually characterized as a more specialized positive affect system linked to endorphin and oxytocin systems that can down regulate threat activation (Depue & Morrone-Strupinsky, 2005). Especially linked to the caring mentality and particularly linked to attachment and connection to others, the soothing system gives rise to positive emotions such as connectedness, warmth, contentment, happiness and well-being. An output that is particularly associated with this system is called "safeness". This is different from safety in the original model since the search for security implies dealing with a threat and therefore it is intimately connected with the threat system. Safeness would involve a non-defensive and curious experience linked to affection and kindness (Gilbert et al., 2008). It encompasses an active component (active safeness) which refers to feelings of interest, freedom, creativity, openness to experience, and actions

of exploration; and a passive one (passive safeness) in which people are quiescent, calm and relaxed (Gilbert, 1989).

4. The application of the three-systems' model in psychosis: Processes leading to relapse and maintenance of the difficulties.

4.1. The imbalance in the affect regulation systems.

Gumley and collaborators have further explored the three-systems' model, in addition to other theoretical perspectives, and applied it to a formulation of recovery in people with psychosis (Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010). Considering the three-systems' model, in psychosis there would be an imbalance in the affect regulation systems, with threat-activation arising from several internal and external sources creating an overly stimulated threat-system (hypersensitivity to threat). This overactivation of the threat system would be combined with few sources of soothing and safeness result from an underdeveloped soothing system unable to counter the easy and fast activation of the threat-system. This imbalance between the (frequency and intensity of) activation of the different systems would have its origins in evolved mechanisms (derived from the consequences of humans having a 'new brain' that allows us to anticipate negative consequences, ruminate on past events, and self-criticizing, thus maintaining vicious circles of threat-based responses – Gilbert, 2010), combined with aversive early experiences (Gilbert, 2005), as well as genetic predisposition (Gilbert, 2004).

This threat-based functioning rooted on aversive interpersonal environment and experiences is fuelled by the presence of several internal and external perceived sources of threat (Gumley et al., 2010). In fact, it has been argued that problems in affect regulation systems might cause subsequent maturation of frontal cortical processing systems with, for instance, people oriented to threat- instead of safeness-processing in early life having difficulties in feeling safe in the social world (Gilbert, 2004). These emotional experiences and external world perceptions often co-occur with cognitive/perceptual changes (e.g. subclinical psychotic symptoms) that constitute themselves as internal threats potentially leading to relapse. Fear of relapse has been described as an internal threat prevalent in people with psychosis. The associated external threat of psychiatric interventions is also important (Gumley et al., 2010; Gumley et al., 2015).

4.2. The roots and loops of the imbalance: from insecure attachment styles to the threat-focused mind in psychosis.

The soothing system is rooted in and evolves from attachment styles created and maintained through peoples' development and interactions with significant others. A threatening-non-investing attachment history would prime the defence system (in detriment of the soothing-safeness system which in turn becomes under stimulated) with defensive responses (anger/fight, anxiety/flight, submission/appeasement and anxious clinging) being overly activated. As a consequence, the person would become threat-focused and more likely to engage in a social mentality of social ranking (need to compete for social place and resources) presenting high-rank seeking and low-rank avoiding behaviours (Gilbert, 2005).

In fact, in individuals with psychosis, several studies have emphasized the high prevalence of insecure attachment patterns (such as attachment anxiety and attachment avoidance) (Berry, Barrowclough, & Wearden, 2007). These insecure attachment styles have been associated with both increased symptoms of psychosis (with poorer engagement with mental health services and more hospitalizations) and recovery-related outcomes concerning quality of life, quality of interpersonal relationships, emotional regulation and coping mechanisms in recovery (Berry et al., 2007; Gumley, Taylor, Schwannauer, & MacBeth, 2014; Ponizovsky, Nechamkin, & Rosca, 2007).

To our knowledge, there are no studies with people with psychosis exploring the role of attachment styles in developing lower social rank perceptions and how this would impact personal recovery (a study with people with bipolar disorder found submissiveness, though not social comparison, to be associated both with insecure attachment and higher levels of mood variations – Gilbert, McEwan, Hay, Irons, & Cheung, 2007). Nevertheless, considering the findings on attachment insecurity in psychosis and congruently with this hypothesis, research on social rank has shown that people with early psychosis have smaller social networks, are less satisfied with and feel more excluded by their peer group than matching controls. Furthermore, people with psychosis tend to perceive themselves as being of lower social rank, compare themselves negatively and engage in submissive behaviour more often than controls (Allison, Harrop, & Ellett, 2013). Perception of low social rank was also associated with lower reported personal recovery, higher emotional distress (Wood & Irons, 2016), experienced stigma and psychotic symptoms (Wood & Irons, 2017). Perceived social rank was found to be the most significant predictor of recovery from psychosis (Wood & Irons, 2017).

In the following sub-sections, we present research regarding the associations between psycho-emotional mechanisms associated with social rank and the threat-focused mind (shame, self-criticism, experiential avoidance and fears of compassion) and outcomes relevant for people with psychosis in non-clinical and clinical samples.

4.2.1. Shame and self-criticism in psychosis.

In addition to and associated with lower perceived social rank and its consequences to recovery, people with psychosis usually have negative self-evaluations focused on personal mistakes and shortcomings (internal shame), thus existing negatively in the minds of others (external shame) (Gilbert & Andrews, 1998) that are perceived as frightening, untrustworthy or as having negative intentions towards the self. Research on shame and psychotic and psychotic-like experiences has been emerging in the last decades.

In non-clinical samples, studies have focused primarily in the relationship between shame, shame memories and paranoia, aiming primarily at understanding the development of paranoia and the impact of memories of shame and current levels of social rank variables (e.g. shame, submissiveness). Regarding hypothesis for the development of non-clinical paranoia, self-reported traumatic impact and centrality of shame memories (shame memory as a reference point for identity) emerged as important predictors of paranoia even when controlling for current external shame (Matos, Pinto-Gouveia, & Gilbert, 2013). Early emotional memories of shame, threat and submissiveness were also found to predict paranoia both directly and indirectly through increased current external shame. External shame and submissiveness directly predicted paranoia (Castilho, Xavier, Pinto-Gouveia, & Costa, 2015; Pinto-Gouveia, Matos, Castilho, & Xavier, 2014) whereas internal shame had impact on paranoia only through submissive behaviours (Pinto-Gouveia, Matos, Castilho, & Xavier, 2014).

In clinical samples, when comparing to other chronic physical illness with comparable levels of depressive symptoms, people with psychosis presented higher levels of external shame (Keen, George, Scragg, & Peters, 2017). Regarding the development of paranoia, distal and proximal factors (e.g. shame, submissive behaviour, negative social comparison, aversive early experiences) predicted paranoid ideation several aspects of paranoid ideation (Carvalho, Motta, Pinto-Gouveia, & Peixoto, 2016, 2018).

Regarding the association between shame and psychotic symptoms, Castilho et al (2017) found that external shame was strongly and positively correlated with the frequency of paranoid ideation and inversely associated with social safeness in a sample of people

with psychosis. Moreover, the impact of the frequency of paranoid ideation in the decrement of social safeness operated through current feelings of external shame (Castilho, Pinto, et al., 2017). Regarding negative symptoms of psychosis, external shame also revealed to have a mediator role in the relationship between negative symptoms (in general and regarding specific symptoms) and the ability to feel safe and connected in the social world (Argel, 2018).

Other studies with clinical samples have tried to understand the impact shame in post-episode adaptation and post-psychotic distress (e.g. depression, trauma and social anxiety). Shame and loss of social goals, roles and status have been associated with Post-Psychotic Depression following FEP (Upthegrove, Ross, Brunet, McCollum, & Jones, 2014), different types of shame with trauma symptoms and, specifically, external shame associated with psychosis significantly predicted post-psychotic trauma even when controlling for shame proneness and depressive symptoms (Turner, Bernard, Birchwood, Jackson, & Jones, 2013). With respect to post-psychotic social anxiety, it has been associated with higher levels of shame, entrapment, negative social comparison (Birchwood et al., 2007). It has been argued that shame cognitions arising from illness-related stigma and self-stigma such as diagnosis-related shame and feelings of humiliation, rejection from others, entrapment and loss of control are more preeminent in people with psychosis and social anxiety disorder and might have a pervasive role in maintaining social difficulties (Michail & Birchwood, 2013).

Regarding studies exploring the relationships between shame and other social rank variables and recovery-related outcomes, the research is still in its beginning. Associations between external shame, experienced stigma, social rank, positive symptoms, emotional distress and personal recovery were found (Wood & Irons, 2016). External shame mediated the relationship between experienced stigma and depression (Wood & Irons, 2017).

Self-criticism has been described as a safety strategy to deal with/avoid feelings of shame (Gilbert, 2010), as well as an essential component of internal shame (Gilbert et al, 2004; Gilbert & Procter, 2006). It has been widely associated to psychopathology being prevalent in clinical populations (Baião, Gilbert, McEwan, & Carvalho, 2015) although fewer studies have been developed regarding psychotic-like experiences in non-clinical populations and in clinical populations with psychosis.

In a non-clinical population, the self-hating form of self-criticism significantly predicted paranoia after controlling for depressive symptoms (also a significant predictor) and self-reassuring abilities (Mills, Gilbert, Bellew, McEwan, & Gale, 2007).

In a mixed sample (people with paranoid delusions, people with depression and healthy individuals) paranoid ideation remained associated with the self-persecuting function of self-criticism when controlling for depressive symptoms (Hutton, Kelly, Lowens, Taylor, & Tai, 2013). In studies with people with psychosis, participants have reported higher levels of self-criticism, particularly self-hating/attacking, and lower levels of self-reassuring abilities and self-correcting criticism, when compared to non-clinical controls (Hutton et al., 2013). Self-critical thoughts of self-hatred and inadequacy were found to have negative influence on psychotic symptoms, voice power and expressed emotion of voices respectively (Connor & Birchwood, 2013). Shame and self-criticism were found to be associated with higher levels of stress reactivity in response to social situations and more social functioning difficulties in people with psychosis. Shame and self-criticism mediated the relationship between social stress reactivity and social functioning (Martins, Macedo, Barreto-Carvalho, Pereira, & Castilho, 2018).

4.2.2. Avoidance-based emotion-regulation strategies.

The threat-focused processing is necessary though not sufficient to relapse: the way people deal with these threats is key to understand relapse and recovery from psychosis. In order to deal with these internal and external threats, the threat system might recruit threat-based strategies that though aimed at self-protection, will lead to unintended consequences (e.g. dissociation, loss of affect, social isolation, increased emotional distress, criticism/emotional overinvolvement from others) further stimulating the threat system, accelerating relapse and hindering recovery (Gumley et al., 2010). Research has shown emotional regulation difficulties in people with psychosis, with patients presenting more difficulties in understanding, being aware of and accepting internal experiences, such as emotions, comparing with healthy controls (Lincoln, Hohenhaus, & Hartmann, 2013).

Threat-based strategies are usually rooted on experiential avoidance (i.e. trying to alter or avoid internal experiences such as feelings, thoughts, physical sensations seen as unpleasant or even threatening). These strategies aiming to avoid unpleasant internal experiences, in turn, exacerbate them and bring negative consequences to recovery from psychosis as is the case of well-known and studied strategies such as self-criticism (e.g. Connor & Birchwood, 2013; Martins, Macedo, et al., 2018) subordination and submissive behaviours (e.g. Gilbert et al., 2001; Upthegrove, Ross, Brunet, McCollum, & Jones, 2014), preoccupation and worry (e.g. Startup, Freeman, & Garety, 2007).

Several studies have pointed out the importance of experiential avoidance in people with psychosis and/or in regard to psychotic experiences in clinical and non-clinical populations. In non-clinical samples, higher levels of paranoia were associated with more frequent use of strategies based on experiential avoidance in daily life (Udachina et al., 2009). In addition, paranoia was found to be predicted by aversive early experiences that shaped the way people perceive themselves (negative self-concept) and deal with negative mental states (experiential avoidance) in adulthood. Moreover, experiential avoidance had a mediator role in the relationship between negative self-concept and paranoid ideas (Udachina et al., 2009; Udachina & Bentall, 2014). Further exploring these links, Udachina and collaborators (2009) found an alternative, equivalent model, in which higher levels of experiential avoidance had a deleterious effect on self-esteem which in turn increased paranoia. In higher levels of stress, the more experiential avoidance influenced negative self-beliefs (Udachina et al., 2009).

Studies further researching on the vulnerability to and emergence of delusions from daily hassles found thought control strategies (ineffective attempts to avoid or alter unpleasant thoughts) were highly related to the emergence of delusions, diminished self-esteem and delusional thinking in stressful life occurrences. Experiential avoidance in response to life hassles leaded to increased delusional or delusion-like activity and distress in clinical and non-clinical samples, with a full mediation effect emerging in the sample of people with diagnosed psychosis (Goldstone, Farhall, & Ong, 2011a). Complex models involving enduring vulnerabilities, proximal environmental stressors and maladaptive psychological coping also pointed out experiential avoidance as an relevant variable, acting as a mediator, in vulnerability to delusions and delusion-like experiences (Goldstone, Farhall, & Ong, 2011b) and hallucinations in people with established psychosis (Goldstone, Farhall, & Ong, 2012). Experiential avoidance was also shown to play a mediator role in the impact of current fears of abandonment and rejection (by mother) has in the maintenance of paranoid ideation in people with psychosis (Castilho, Martins, et al., 2017).

In prediction studies with non-clinical samples, strategies based on experiential avoidance (i.e., thought suppression and rumination) predicted hallucination-proneness (Varese, Udachina, Myin-Germeys, Oorschot, & Bentall, 2011). Experiential avoidance also predicted auditory and visual hallucination-like experiences (Langer, Cangas, Pérez-Moreno, Carmona, & Gallego, 2010). Specifically, regarding auditory verbal hallucinations in clinical samples, coping strategies based on avoidance of private experiences (dissociation and experiential avoidance) predicted negative outcomes such as

increased frequency, severity of auditory hallucinations, as well as their associated distress (Varese et al., 2011).

4.2.3. Fears of affiliative emotions.

Attachment security has been described as particularly important to being able to engage in pro-social and affiliative-related social mentalities, such as care eliciting and care giving mentalities (Gilbert, 2005). Felling secure and safe in the social world, connected and interested in caring for others and the self would allow to develop several abilities necessary for compassion (being aware of and sensitive to suffering, attuned in a caring way to the experience of pain and motivated to engage with and alleviate it either if it comes from the self and/or others) (Gumley & Macbeth, 2014).

Considering the developmental pathways commonly experienced by people with psychosis it is understandable that people with psychosis often struggle with countering the activation of the threat system through the engagement with the affiliative one. Even in the presence of soothing-affiliative clues and adequate responses to suffering (e.g. giving and receiving compassion to/from self/others), people with psychosis might activate threat-related responses.

Research has focused on how fears of compassion might negatively influence recovery from psychosis. Higher levels of fears on all flows of compassion were found in people with psychosis when comparing with non-clinical samples (Martins et al., 2017). Fears of compassion were associated with higher levels of paranoid ideation (Carvalho, 2015; Martins et al., 2017), feelings of self-disgust (Carvalho, 2015) and negative symptoms (Cruz, 2017). Fears of self-compassion were found as a relevant predictor of distress associated with paranoid ideation (Carvalho, 2015) and fears of receiving compassion (both from self and others) mediated the relationship between paranoid conviction and paranoia-related distress (Martins et al., 2017). Fear of receiving compassion from others was found to be the only fear of compassion mediating the relationship between negative symptoms and feeling safe and connected in the social world (social safeness) (Cruz, 2017).

5. Recovery from psychosis: Fostering balance in affect regulation through engaging with the affiliative system.

Compassionate responding emerges as an emotional recovery-oriented alternative to threat-based responses to external and internal threats. Learning to switch from threat-

based social mentality oriented by a threat-based processing to a caring mentality characterized by sensitivity, sympathy, distress tolerance, empathy, nonjudgement, acceptance and warmth may be key in psychotherapy for people with psychosis (Gumley et al., 2010).

Understanding of the origins and organization of the threat and safeness processing has been argued as important in intervening with people with psychosis (Gilbert, 2004). In fact, authors have recommended that along with reducing the sense of threat there is also the need to stimulate and learn to activate the soothing-safeness system (Gumley et al., 2010). In order to provide a comprehensive review of the mechanisms that facilitate engaging with- and stimulating the soothing-safeness system, in the sub-sections bellow we present research on compassion, self-compassion, acceptance and mindfulness in people with psychosis.

5.1. Compassion and self-compassion.

Processes studies on compassion and self-compassion in psychosis and how those variables influence outcomes relevant for recovery are still in its beginning. In non-clinical samples, paranoid beliefs were found to be inversely associated with self-kindness and abilities of self-reassurance (Mills et al., 2007). People with psychosis presented lower levels of self-compassion when comparing with healthy controls (Collett, Pugh, Waite, & Freeman, 2016). Lower levels of self-compassion were found to be associated with greater fears of madness, suicide ideation, unfavourable social comparison, negative self-schemas, worst self-esteem and increased depressive symptoms (Collett et al., 2016) with lack of self-compassion emerging as an important predictor of depression (Gonçalves, 2016; Viegas, 2013). Reduced self-compassion also mediated the relationship between external entrapment and depression (Viegas, 2013).

Self-compassion has also been associated with lower levels of positive psychotic symptoms (e.g. distress and severity of voices – Dudley, Eames, Mulligan, & Fisher, 2018), excitement and emotional discomfort (Eicher, Davis, & Lysaker, 2013), negative symptoms and cognitive disorganization (Gumley & Macbeth, 2014). Self-compassion (long with cognitive fusion) mediated the relationship between paranoia or hallucinations and distress (Bolderston, Newman-Taylor, & Deveson, 2014; Rothwell, Newman Taylor, Bolderston, Deveson, & Maguire, 2015). In a related work, Newman-Taylor and collaborators (2017) found that self-compassion inversely predicted general distress in people with psychosis (K. Newman-Taylor et al., personal communication, March 9, 2017).

Self-compassion was found to mediate the relationship between mindfulness of voices and severity of voices (Dudley et al., 2018).

In a qualitative study also exploring the compassion in the narratives of people with psychosis, Gumley and Macbeth (2014) found compassion to be negatively associated with positive, negative and cognitive disorganization symptoms, as well as emotional dysregulation (excitement and emotional distress), with different associations emerging depending on type of compassion measure. Results also showed that the relationship between compassion narrative and cognitive symptoms was mediated by negative components of self-compassion (self-coldness: self-judgement, isolation and over-involvement) (Gumley & Macbeth, 2014).

Also, in a qualitative study, with people recovering from psychosis, Waite and collaborators (2015) stressed the iterative pattern between internal processes of recovery (e.g. self-reliance, confidence, self-belief) culminating in a more positive self-concept and a more adaptive relationship with the self. Self-compassion emerged as a strategy to tone down the pervasive effects of self-criticism, lessening the impact of threat-based defensive responses and promoting recovery through self-acceptance. Compassionate self-acceptance would, therefore, foster the maintenance cycle of well-being and recovery leading to feelings of empowerment, hope and agency regarding psychosis, culminating in post-traumatic growth (Waite, Knight, & Lee, 2015).

5.2. Acceptance.

Experiential acceptance has been shown to predict quality of life and, negatively, negative affect in people with psychosis (Vilardaga, Hayes, Atkins, Bresee, & Kambiz, 2013). Associations with recovery-related measures, such as not feeling dominated by symptoms, willingness to ask for help, personal confidence and hope, purpose and psychological well-being, were found in a population with chronic mental illness (including psychosis). Specifically, regarding auditory verbal hallucinations (voices), experiential acceptance predicted emotional resistance to voices and although experiential acceptance isolated did not reach significance, psychological flexibility predicted emotional outcomes in people with persisting auditory hallucinations (Morris, Garety, & Peters, 2014). Authors even propose acceptance as a mechanism through which people who hear voices may protect themselves from developing a clinical disorder (Vilardaga et al., 2013).

Siqueira and Oades (2015) found experiential acceptance to be associated with specific aspects of recovery, such as not feeling overpowered by symptoms, being willing to ask for help, feeling confident and hopeful and having a purpose (Siqueira & Oades, 2015).

5.3. Mindfulness.

In what concerns the association between mindfulness and psychotic-like symptoms, in non-clinical samples, associations between mindfulness, psychosis-proneness, subjective happiness and positive affect have been found (Erisman, 2010).

Research comparing people with psychosis and healthy controls has found lower levels of mindfulness in patients (Tabak, Horan, & Green, 2015). Recent studies have connected mindfulness with lower severity of positive (e.g. general, paranoia and auditory hallucinations in particular) and negative symptoms (Carvalho, 2015; Dudley et al., 2018; Martins, Marques, et al., 2018) and lower distress elicited by them, with mindfulness emerging as a mediator in the relationship between self-compassion and severity of voices (Dudley et al., 2018). Also regarding research in verbal auditory hallucinations, mindfulness showed a mediator role in the relationship between dysfunctional styles of relating with voices (dominance, intrusiveness and dependence) and negative affect (Perona-Garcelán, Rodríguez-Testal, Senín-Calderón, Ruiz-Veguilla, & Hayward, 2017). Carvalho (2015) found associations between facets of mindfulness (describing, non-judging and act aware), paranoia and self-disgust. The describing facet of mindfulness mediated the relationship between self-disgust and distress associated with paranoia. In respect to negative symptoms, Tabak and collaborators (2015), in a study with people diagnosed with schizophrenia, found associations between mindfulness facets (acting with awareness, non-judgmental attitude and non-reacting) with self-reported motivation (behavioural activation and inhibition) a construct usually associated with negative symptoms, though not with negative symptoms per se (Tabak et al., 2015).

E. Compassion-focused therapy and perspectives on compassion and self-compassion

Compassion-Focused Therapy (Gilbert, 2009a, 2014b; Gilbert & Procter, 2006) is a widely used psychotherapeutic approach that has its theoretical roots in the evolutionary

and biopsychosocial approaches to psychological difficulties, with an importance influence of the Theory of Social Mentalities (Gilbert, 1989). The CFT main therapeutic focus is to develop compassion and self-reassurance as emotion regulation strategies and it was primarily developed for complex and chronic conditions linked to high levels of shame and self-criticism. The therapeutic strategies are very diversified and can be common to other therapeutic approaches (e.g. guided discovery, socratic questioning, mindfulness, exposure, imagery, among others), nevertheless the focus is always on developing and/or potentiating a compassionate mind. The Compassionate Mind Training is a specific training developed to help people cultivate these qualities and skills (a 'compassionate mind') through compassion-based therapeutic strategies and practices (Gilbert & Irons, 2005; Gilbert & Procter, 2006).

Compassion, within the Compassion-focused Therapy (CFT) framework, is defined in terms of its attributes/qualities (engagement with suffering) and transformative skills (alleviation and prevention of suffering) which constitute the two psychologies of compassion (Gilbert, 2009a, 2014b).

Therefore, compassion comprises engagement abilities within a motivation rooted in a caring mentality to turn towards suffering focusing on well-being. This involve being able to be sensible to suffering and capable of distinguishing emotions, thoughts and needs of the 'being' that is cared for and, when in contact with suffering, have an emotionally connected response to it (sympathy) instead of an avoidance or emotionally disconnected one. The ability to tolerate suffering is essential to being able to be open to emotions associated with it. Distress tolerance implies 'being with' different emotional levels and complexity in an accepting and kind way, without trying to avoid, contradict, invalidate or denying them. With these abilities, a sense of empathy and mentalization is developed and people became able to take the perspective ('empathic bridging') of the 'being' that is cared for (that can also be a specific part of the self). The accepting, non-judgmental, de-shaming and caring attitude is essential throughout this process (Gilbert, 2009a, 2014a).

In a complementary way, the compassion skills imply bringing feeling of kindness, warmth and support to the therapeutic targets (common to other psychotherapies):

1. Using attention in a helpful and compassionate way and refocusing attention with kindness when needed (mindfulness can be a helpful way to practice attention refocusing);

2. Being able to reason about the self, others and the world in a compassionate manner, focused on support and helpfulness;

3. Behave compassionately or, in other words, use behaviour to alleviate suffering and, simultaneously, promote well-being and growth;

4. Allowing the appropriate emotional response to emerge and cultivate compassionate emotional responses towards the self and others (e.g. the flows of compassion – (Gilbert, 2009b);

5. The use of imagery and meditation practices is encouraged to activate the affiliative and soothing system of emotion regulation;

6. The use of sensory practices (e.g. voice tones, breathing rhythms – Gilbert, 2009b, 2014b) is also promoted.

There are three flows or directions of compassion: directing compassionate feelings to others (giving compassion), experience compassion as it is directed towards us by others (receiving compassion) and feeling compassion for ourselves (self-compassion) (Gilbert, 2009b). In a different perspective, Neff (2003) conceptualizes self-compassion as comprising three, conceptually distinct though interactive and complementary, main elements: the ability to direct kindness and understanding to oneself (self-kindness) as opposed to self-criticism and judgement directed to perceived failures, inadequacies or negative characteristics of the self; embracing a perspective in which the individual's experience is a part of the larger human experience (common humanity) rather than perceiving personal experience as isolating; and being able to be aware of difficult private experience (such as thoughts, feelings, physical sensations) in a balanced way without overidentification (mindfulness) (Neff, 2003).

1. Acceptance, mindfulness, compassion and loving kindness: An opportunity for integration within the framework of compassion-focused therapy.

Since in compassion-focused therapy, as in other CCBT, different but profoundly interconnected processes are fostered, trained and promoted, through complementary techniques and practices, such as acceptance, mindfulness, compassion and loving kindness, in this section we sought to explore the differences and similarities between these constructs in order to reflect upon their possible integration in Compassion-focused Therapy.

Acceptance can be defined as the active and aware embrace of private experiences without unnecessary attempts to change their frequency or form (Hayes, Pistorello, & Levin, 2012). This attitude has been described as crucial both to Mindfulness and Compassion. Several definitions of mindfulness stress the importance of a receptive

(Brown & Ryan, 2003), non-judgmental (Kabat-Zinn, 1994), non-evaluative (Marlatt & Kristeller, 1999) attention. Acceptance has been described as one of several foundations of mindfulness practice (Kabat-Zinn, 1990) and mindfulness has been proposed as a practice to foster and from which to teach acceptance (Baer, 2003). In compassion-focused therapy, non-judgmental acceptance towards both the self and others is described as one of the compassion attributes. Experiential acceptance (as described above) is also promoted in CFT when concerning mindfulness practice to prepare the mind for compassion practices (Gilbert, 2010).

On the other hand, the interrelations and frontiers between Mindfulness, Compassion and Loving kindness have been widely discussed without consensus. It has been argued that these are difficult constructs to define and clearly discriminate considering their common origins, similarities and overlaps. In some empirical studies compassion practices and LKM have been referred to as one undifferentiated construct (providing participants with mixed instructions) also using mindfulness, making it difficult to discriminate between the three (Hofmann, Grossman, & Hinton, 2011; Shonin, Van Gordon, Compare, Zangeneh, & Griffiths, 2015). Despite of the evident opportunity for integration, these constructs are in need for clear and accurate working definitions in order to explore their interrelationships and clinical applications (Shonin et al., 2015; Tirch, 2010).

The three constructs have been drawn from Buddhist psychology and according to it different words and definitions are suggested to the terms compassion (*karuna* described as the desire to prevent suffering), loving-kindness (*metta* as the desire to bring positive emotional states) and mindfulness (*pali* as a state of mind comprising attention, awareness and memory) (Tirch, 2010).

On the differentiation between the kindness-based meditations (meditation practices that aim at eliciting kindness in a conscious way – Galante, Galante, Bekkers, & Gallacher, 2014) – compassion and loving kindness, several authors (e.g. Boellinghaus, Jones, & Hutton, 2014) have argued that the main difference is that the first is specifically devoted to dealing with the experience of suffering and the latter refers to directing unconditional love, warmth and care to others and self with acceptance of both pleasurable and difficult parts.

Considering the distinctions between mindfulness and compassion/self-compassion (with loving kindness being deeply related to compassion in some of these aspects), some conceptual and practical differences have been suggested:

1. Regarding the target of attention, Mindfulness would have a wider scope (any internal or external experience) given the focus of compassion being specifically on suffering and the wish for alleviating it (even the mindfulness component of self-compassion is described as aiming at balanced awareness of negative thoughts and feelings – Neff & Dahm, 2015). LKM, on the other hand, specifically focuses on practicing good intentions towards others/self, i.e. the wish for the self/other to experience positive emotions. Thus, both compassion and loving kindness pertain to the experience of the emotional state as the object of mindful awareness, thus providing mindfulness with specific (emotional) attentional objects and emotional modes (e.g. with kindness, compassion) of attending to those objects (Hofmann et al., 2011).

2. The object of attention in mindfulness, compassion and loving kindness seems also to be different since in mindfulness targets the way of dealing with the experience (e.g. thoughts, emotions, memories) whereas compassion aims at relating to the person experiencing suffering – the experiencer (Neff & Dahm, 2015) similar to what happens in loving kindness which is directed towards the self or the other (though the experiencer is not necessarily in suffering).

3. Compassion and loving kindness seem more active and less contemplative than Mindfulness considering that these practices move beyond the accepting observation of the internal experience to an intention to relieve suffering (in compassionate actions) (Boellinghaus et al., 2014) or to wish others/self to experience positive emotions both in meditation practice and everyday life (Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008).

In addition to these conceptual differences, with empirical studies tried to understand the differential contributions of mindfulness, compassion and loving kindness in psychological health (Sears & Kraus, 2009; Shonin et al., 2015; Woodruff et al., 2014), research has shown that mindfulness and compassion/self-compassion have shared variance (Woodruff et al., 2014). Therefore, there is room for integration of these three somehow different yet complementary constructs.

Authors have fostered the integration of mindfulness and compassion on theoretical models in which one constitutes a component of the other, giving the main emphasis either on compassion or on mindfulness. As an example of the first hypothesis, as stated above, Kristin Neff states mindfulness as an important component of self-compassion (Neff, 2003). On the other hand, the IAA (Intention-Attention-Attitude) mindfulness model postulate compassionate service as an important intention for practice (intention) and 'heart qualities' such as kindness being crucial attitudinal foundations of mindfulness (attitude)

(Shapiro, Carlson, Astin, & Freedman, 2006). From a different perspective but also considering compassion as an important attitude for mindfulness practice, in empirical studies different mindfulness profiles have emerged considering levels of nonjudgement attitude (a component of self-compassion according to Neff & Dahm, 2015) (Sahdra et al., 2017).

Mindfulness and compassion have been described as co-creating one another (Tirch, 2010), nevertheless, it has been argued that it is possible to be mindful of difficult internal experience without the self-compassionate active move to alleviate suffering (Neff & Dahm, 2015). Neff and Dahm (2015) argue that mindfulness and (self)compassion are able to mutually enhance one another since mindfulness provides the basis for the compassionate response to be free of avoidance tendencies (e.g. being kind to avoid pain) and compassion provides the secure base in order to mindfully experience difficult internal experiences.

Specifically, regarding Compassion-Focused Therapy, mindfulness and compassion complement one another though the primordial focus is on developing compassionate relationships with self and others through compassionate mind training. Mindfulness has been described as a way of accessing the soothing-safeness system helping people shift from a 'doing mode' to a 'being mode'. In the two psychologies or mindsets of compassion, attention sensitivity as the ability to search for and be attentive to suffering is described as an important engagement attribute (Gilbert, 2014b).

Also, as stated above, being mindful implies bringing certain qualities to attention in the present moment, such as non-judgement and purpose. Being aware of either positive or negative/suffering-evoking internal experiences (particularly the latter ones), with this kind of attitude, is essential to developing and cultivating compassion. Thus, in CFT, formal Mindfulness practices are frequently introduced early in therapy and compassion practices usually start with mindfully focusing attention on a present moment anchor (e.g. breathing, sign of suffering). On the other hand, some metta/loving kindness components can be also found in compassion-focused practices (Gilbert & Choden, 2014) (e.g. practice of visualizing the Compassionate Other – Gilbert, 2013) with the purpose of enhancing positive emotional states of kindness, unconditional care for the self/others well-being and promoting awareness of connectedness between all beings.

2. Empirical studies on compassion-based approaches to psychosis.

Compassion-based approaches for psychosis and psychotic-like experiences have been accumulating empirical evidence over the past years, from studies in non-clinical populations (intervention and experimental), case studies, non-randomized intervention studies, to randomized controlled trials (RCT). Qualitative studies on the benefits of intervention studies as perceived by the participants have also been emerging.

Regarding compassion-based approaches' effects in non-clinical populations, the most studied psychotic-like experience has been paranoia. Lincoln and collaborators (2013) randomized healthy participants with varying levels of subclinical symptoms of psychosis into either a compassion-focused (trained the application of a compassion image) or a neutral control (neutral image) condition. After induction of negative emotions and the use of the corresponding imagery exercise, participants in the compassion-focused condition had significantly higher decreases in paranoia than controls. The effect of the compassion-based imagery on paranoia was mediated by decreases in negative emotions but not when regarding self-esteem. The intervention effect was moderated by baseline symptomatology with individuals with higher psychosis proneness being the only ones to responded to the CF-condition with a significant decrease in paranoia (Lincoln et al., 2013). In a similar study with people with psychosis with paranoid ideation, Ascone and collaborators found that the compassion-imagery had more positive effects on self-reassurance and happiness than the control condition (Ascone, Sundag, Schlier, & Lincoln, 2016).

In a case series with three participants hearing malevolent verbal auditory hallucinations (voices), Mayhew and Gilbert (2008) found that the 12-session CFT intervention was feasible and acceptable. Participants showed decreases in depression, psychoticism, anxiety, obsessive–compulsive symptoms, paranoia, interpersonal sensitivity and self-criticism at post-intervention. Moreover, all participants' voices became less malevolent, persecuting and more reassuring (Mayhew & Gilbert, 2008).

Specifically, for negative symptoms of psychosis, a study exploring feasibility and potential benefits of loving-kindness meditation in three individuals with a diagnosis of schizophrenia and persistent negative symptoms found, although not consistent amongst participants, improvement in asociality, blunted affect, motivation to pursue goals, relaxation and coping with hallucinations (Johnson et al., 2009).

In a professional and lived experience collaboration, Kennedy and Ellerby (2016) presented a case example of a person diagnosed with schizophrenia engaging in both one-

to-one and group CFT the latter aiming at developing mindful curiosity about one's experience of psychosis (threat and emotional regulation-based psychoeducation as well as several breathing-, imagery-, and diary-based exercises). The participant reported higher levels of hope, perception of self-worth, and connection with others. Also developed stronger abilities of mindful observing of internal experience, kinder voice tone and reported higher belief flexibility, as well as lower levels of distress related to verbal auditory hallucinations (which reduced frequency and perceived power) (Kennedy & Ellerby, 2016).

Regarding clinical intervention studies, a study aiming to evaluate feasibility and initial benefits of a loving kindness intervention (six group sessions) in people with a psychotic disorder with significant negative symptoms, found the intervention to be feasible acceptable (with attendance rate of 84% for intent-to-treat) and perceived as useful. Decreased negative symptoms and increased positive emotions, mastery, self-acceptance and satisfaction with life were found (Johnson et al., 2011). Laithwaite and collaborators (2009) found benefits associated with a compassion-focused intervention (20 group sessions) for people with psychosis residing in high security settings. Improvement was found in social comparison, shame, depression, self-esteem, and general psychopathology, maintained at 6-weeks follow-up (Laithwaite et al., 2009).

The only RCT on CFT for psychosis found that CFT (16 group sessions) was feasible, acceptable, and not associated with adverse effects (low attrition – 18%). The CFT group had greater observed clinical improvement (measure of improvement/exacerbation relative to baseline) and revealed higher levels of compassion in their recovery narratives. Compassion was conceptualized as a care-giving, affiliative mentality and measured using coded semi-structured interviews which intended to stimulate a narrative around the experiences of psychosis and recovery. It was operationalized in terms of a narrative strategy in which aspects of psychosis were associated with warmth, acceptance and understanding. Compassion revealed to be associated with lower levels of depression, entrapment, shame, perceived social marginalization, intrusiveness, and fear of relapse (Braehler et al., 2013).

CHAPTER II

RESEARCH AIMS AND METHODOLOGY

II. Research aims and methodology

Beginning with a synthesis of the previous research and the recommendations for future studies, we will provide the international and national research framework in which the present project is rooted and from which it was designed. The present chapter will summarize the general and specific aims of the present research project, emphasizing the connection, sequentiality, and complementarity of the different studies presented in detail in Chapters 3 and 4. Given that the main focus of this research project was the development of an intervention programme, the intervention development will also be detailed and the COMPASS intervention will be briefly presented. General research methodology will be presented, namely discussion of research design, participants and sample collection, compliance with ethics and legislation, presentation of the measures used and brief description of the statistical analysis plan. The specific methodology choices, procedures and study's characteristics (e.g. sample characterization, data collection procedures, specific statistical procedures) are presented in detail in each study (cf. Chapter 4 | Empirical studies).

1. International and national research framework underlying the research project

Research has been showing the relevance of, in working with people with psychosis, reducing levels of self-criticism, shame, and social comparison (Birchwood et al., 2007; Connor & Birchwood, 2013; Hutton, Kelly, Lowens, Taylor, & Tai, 2013; Turner et al., 2013; Upthegrove, Ross, Brunet, McCollum, & Jones, 2014; Wood & Irons, 2016), on one hand, in combination with promoting levels of compassion, self-compassion (Bolderston, Newman-Taylor, & Deveson, 2014; Dudley, Eames, Mulligan, & Fisher, 2018; Eicher, Davis, & Lysaker, 2013; Gumley & Macbeth, 2014; Gumley & Macbeth, 2014; Rothwell, Newman Taylor, Bolderston, Deveson, & Maguire, 2015), mindfulness (Dudley, Eames, Mulligan, & Fisher, 2018; Perona-Garcelán, Rodríguez-Testal, Senín-Calderón, Ruiz-Veguilla, & Hayward, 2017; Tabak et al., 2015) and acceptance abilities (Goldstone, Farhall, & Ong, 2011a; Goldstone, Farhall, & Ong, 2012; Langer, Cangas, Pérez-Moreno, Carmona, & Gallego, 2010; Varese, Udachina, Myin-Germeys, Oorschot, & Bentall, 2011; Vilardaga, Hayes, Atkins, Bresee, & Kambiz, 2013) on the other.

Furthermore, promising results regarding compassion-based interventions for people with psychosis (Braehler et al., 2013; Laithwaite et al., 2009; Johnson, et al., 2011).

In Portugal, contextual behavioural research as applied to psychosis is still in its beginning. To our knowledge, research in psychological approaches to treatment of psychosis-spectrum disorders (e.g. clinical trials of psychological therapies) is almost inexistent, and studies on the psychological processes underlying and maintaining psychotic symptoms and psychosis-related difficulties are still scarce. Specifically, in the Centre for Research in Neuropsychology and Cognitive Behavioural Intervention (CINEICC, Faculty of Psychology and Educational Sciences, University of Coimbra), a research centre with a growing body of research on the role of contextual behavioural processes and interventions in psychopathology and health, and in the Department of Psychology (Faculty of Human and Social Sciences) of the University of Azores, a well-known centre for the study of schizophrenia, studies exploring contextual variables with non-clinical and clinical populations had started to emerge in the last decade.

In what concerns psychotic symptoms and psychotic-like experiences, the development and maintenance of paranoia has been the most studied outcome and studies have found an impact of external shame, internal shame traumatic impact and centrality of shame memories, early emotional memories of shame, threat and submissiveness in adult non-clinical and clinical samples (Carvalho, Motta, Pinto-Gouveia, & Peixoto, 2016, 2018; Castilho, Xavier, et al., 2015; Lopes, 2010; Pinto-Gouveia, Matos, Castilho, & Xavier, 2014; Viegas, 2013) and adolescent samples (Sousa et al., 2015), both regarding experiences with caregivers and peers (e.g. bullying victimization) (Carvalho et al., 2016). In addition to early aversive experiences, studies have also found proximal factors, such as social comparison, current shame, submissive behaviours to predict paranoid cognitions in a mixed sample of patients, unaffected family members and healthy controls, with patients differing from people without psychosis (Carvalho et al., 2018). Experiential avoidance was found to mediate the relationship between current attachment styles and paranoid ideation (Castilho, Martins, et al., 2017).

In what concerns comparisons between clinical and non-clinical samples, the continuum model has been empirically studied (Carvalho, Pinto-Gouveia, Peixoto, & Motta, 2014; Lopes, 2010) with relevant results confirming the continuum hypothesis of increased frequency and intensity of paranoia from non-clinical (without and with vulnerability – family members of an affected patient) to clinical populations (acute and in remission) (Barreto-Carvalho, Pinto-Gouveia, Peixoto, & Motta, 2014). On the other hand,

expressions of paranoia were found to differ in terms of their cognitive, emotional and behavioural components, with patients being unable to identify triggering situations and using more maladaptive coping strategies (Barreto-Carvalho, Motta, Pinto-Gouveia, & Peixoto, 2017). One Portuguese study found that early aversive experiences helped shape the voice hearing experience (e.g. omnipotence and malevolence) and that these experiences mirrored other interpersonal relationships (Barreto-Carvalho, Motta, & Peixoto, 2015).

Regarding interventional studies, only one Portuguese pilot trial was conducted on contextual therapies for people with psychosis. This study, comparing acceptance and commitment therapy with both pharmacotherapy-only and pharmacotherapy plus psychoeducation found, in a small sample, benefits of ACT regarding symptoms, contextual processes (acceptance and cognitive fusion), quality of life and social safeness (Castilho, Pinto, et al., 2015). Although the advances in this area, both internationally and nationally, are promising, further research is needed.

First, there are still lacking adequate, empirically validated measurement instruments, rooted upon the recovery model and the contextual behavioural science framework, for people with psychosis in general and for Portuguese population in particular. Particularly, there was a need for a clinical interview for psychotic disorders that allowed assessing diagnostic criteria (following the DSM-5) and, both from the clinician and patient's perspectives, psychosocial correlates of symptoms (such as interference), specifically, recovery-related correlates (e.g. empowerment). On the other hand, a review of instruments assessing the psychosocial correlates of delusions emphasized the absence of a measure that assessed acceptance, willingness and committed action in the context of delusional ideation (Martins, Castilho, Barreto-Carvalho, et al., 2016). Moreover, instruments measuring the degree to which patients adhere to pharmacological treatment did not include psychosocial variables known to influence, for instance, anti-psychotic medication adherence, thus the need for a new measure. On the other hand, some instruments relevant in the area of contextual science in psychosis were still not adapted or psychometrically studied for the Portuguese population.

Second, although some research exists on contextual variables in psychosis, mostly research has focused on symptoms and how these variables impact on symptoms instead of focusing on recovery-oriented outcomes. Moreover, there was still lacking research on the specific role of shame, combined with its defensive strategy – self-criticism, in promoting social difficulties in people with psychosis. Furthermore, there was a gap on

research in psychosis regarding fears of compassion (a common block in compassion-based interventions particularly with chronic patients with insecure attachment issues) and the role of mindfulness in facilitating the engagement with the soothing system, through activation of positive affect. Specially, the impact of this activation on social outputs relevant for compassion-focused therapy (e.g. social safeness) was still not explored.

Third, and related to the main aim of this project, further research was needed in regards to compassion-based, psychotherapeutic interventions for people with psychosis. In order to develop a complete, up-to-date and intervention there was the need to a) revise and critically analyse the previous research on clinical trials; b) contact authors who developed and applied previously tested interventions and together analyse the strengths and limitations of the interventions; c) conduct small-scale pilot trials in order to assess the feasibility, acceptability and qualitative feedback on themes and exercises; and d) develop and test the intervention in a pilot study considering feedback from clinicians, patients and their informal care givers.

2. General and specific research aims

The general research aims of this project are threefold and concern improving the assessment in people with psychosis, exploring the processes underlying both the difficulties people with psychosis experience and the positive indicators of health and well-being, and, contribute to the treatment of people with psychosis. These general aims were subdivided in specific aims and are presented in Table 3, along with the aims of the empirical studies that derived from the specific aims.

Table 3
General and specific aims

Broad targets	General Aims	Review or descriptive study	Empirical Study	Study-specific aims
To contribute to the development and validation of adequate assessment tools	Development and psychometric study of clinician-rated and self-report instruments	I	I	• To develop and evaluate the psychometric properties of a new clinical interview for psychotic disorders (CIPD)
		II	II	• To review the state of the art regarding self-report instruments to assess delusional ideation
				• To develop and psychometrically study a new self-report instrument designed to measure acceptance, committed action, non-entanglement, and non-struggling regarding delusions (WADS)
			III	• To develop and empirically assess the psychometric properties of a new self-response scale aimed at assessing anti-psychotic adherence (AMAS)
	Translation, adaptation and psychometric study of self-report measures		IV	• To translate, adapt and study the psychometric properties of the Voices Acceptance and Action Scale
To extend the understanding on processes underlying the development and maintenance of psychotic symptoms and their impact	Exploration of the relevance of specific psychological mechanisms, such as shame and self-criticism, fears of compassion, mindfulness, and positive affect in psychosis-related outcomes		V	• To explore the associations between external shame, self-criticism, social stress reactivity and social functioning difficulties
				• To understand the mediator role of shame and self-criticism in the relationship between stress reactivity and social functioning.
			VI	• To characterize Fears of Compassion in psychosis, comparing it to results from nonclinical and depression samples
				• To explore the role of FOC in the relationship between paranoid conviction, and paranoia-related distress
			VII	• To compare levels of positive affect and social safeness between psychosis, non-clinical and depression samples
				• To explore associations between positive and negative symptoms, mindfulness, positive affect and social safeness
				• To understand the mediator role of positive emotions in the relationship between mindfulness and social safeness

Broad targets	General Aims	Review or descriptive study	Empirical Study	Study-specific aims
To develop, implement and evaluate a new compassion-based group intervention for people with early psychosis	Revision of the existing contextual behavioural therapy (CCBT) intervention studies and their strengths and limitations	III		• To summarize the empirical results found for CCBT for the psychosis continuum (Schizophrenia, Schizoaffective and Bipolar disorders) and to provide a comprehensive and critical overview of results from high quality clinical trials
	Exploration of contextual approaches and strategies in people with psychosis		VIII	• To develop a 5-session group intervention based on the processes proposed by contextual therapies: acceptance, mindfulness and compassion (C.MAP) for people with schizophrenia
				• To evaluate participants' feedback on exercises and sessions (acceptability) to inform future research and practice
				• To present and discuss the evolution of two of the participants
	Development of a new group compassion-based intervention for people with psychosis		IX X	• To develop, implement and assess efficacy of a new group compassion-based intervention for people with psychosis (COMPASS)

3. The development of the COMPASS intervention

The Compassionate Approach for Schizophrenia and Schizoaffective disorder (COMPASS) program builds upon the available research on CCBT approaches, mindfulness, acceptance and compassion-based, for the psychosis continuum. Several steps were made in order to develop an intervention that integrated the previous knowledge and best suited the specific population. First, we have revised in detail the existing literature both regarding efficacy studies of contextual approaches (with a particular focus on CFT) for people with psychosis, mechanisms hypothesized to maintain psychotic symptoms and associated symptomatology and mechanisms associated with well-being, functionality and, ultimately, recovery. Whenever available (either online or after request from the authors) treatment protocols and clinicians' manuals were also analysed. Second, we contacted authors that previously investigated compassion-focused approaches to psychosis (namely, Professor Andrew Gumley and Dr. Christine Braehler were consultants in the present project) to obtain feedback on previous interventions and discuss how interventions could improve. The development of the COMPASS intervention benefited from the supervision of Dr. Christine Braehler. We have also learnt from experiences of renown experts in the field of contextual approaches to psychosis, such as Dr. Charles Heriot-Maitland, Professor Eleanor Longden, Professor Chris Irons among others, through courses, workshops and individual discussions. Third, we conducted a small-scale clinical pilot study (Study IX, Chapter 4 | Empirical Studies) in order to assess feasibility of contextual approaches and to explore the opinions of people with psychosis regarding mindfulness, acceptance and compassion rationales and practices. All these steps informed the development of the COMPASS intervention.

3.1. Theoretical and clinical foundations of the COMPASS intervention and brief outline.

The program is rooted on the evolutionary and compassion-focused therapy's framework of the human mind's functioning and, thus, their understanding of human suffering. Particularly, the main framework of the COMPASS program is the affect regulation system's model (Gilbert, 2005) and the compassion-focused therapy rationale as it was adapted for psychosis (Gumley et al., 2010).

It was primarily based on the group intervention protocol from Braehler, Harper, & Gilbert (2013). All recommendations regarding participants' selection, setting up the group (with exception to the duration of the intervention due to setting constraints), structure of

sessions and support outside of sessions were followed. Clinical observations and feedback from previous studies with CCBT interventions for psychosis were also considered and discussed and helped to tailor the intervention to the population (Braehler, Gumley, et al., 2013; Castilho, Pinto, et al., 2015). Also, information (participants' and clinicians' feedback) and experience gathered from a pilot study on contextual strategies applied to psychosis (mindfulness, acceptance and compassion) were also considered (Martins, Castilho, Santos, & Gumley, 2016) and qualitative information on patients' perspectives on mindfulness and compassion exercises was also collected and analysed (Leal, Martins, & Castilho, 2018).

COMPASS evolves through three phases, comprising twelve modules that were tested in consecutive, weekly sessions: "Building Trust and Group as a Safe Place" (Sessions one to four); "Compassionate Mind Training" (Sessions five to ten) and "Revisiting Recovery and Compassionately Planning Ahead" (Sessions eleven and twelve). It comprises Therapist's and Participant's (with recorded practices) Manuals and was developed to be delivered in a closed group format (5 to 10 participants with a psychosis-spectrum disorder), independent of the context (e.g. psychiatry outpatient services, community groups, day hospital, etc.). In addition to the group sessions each participant also has the possibility to schedule two individual sessions with the therapist(s) and a booster session is offered after three months. A detailed overview of the COMPASS intervention along with preliminary results in a small sample can be found in Empirical Study XI.

4. General research methodology

The methodology presented in this topic refers to general research design and procedures common to the different studies comprised in this project. Specific methodological and statistic options, as well as a description of the instruments used, are described in further detail in each study (cf. Chapter 3 | Descriptive and review studies, and Chapter 4 | Empirical Studies).

4.1. Considerations on descriptive and review studies.

The present project had three studies that were not empirical studies. Study I is a descriptive study and describes in detail de development of and contents included in the Clinical Interview for Psychotic Disorders (CIPD). It also presents the results from an expert panel of recognized professionals in the main areas of mental health. Each

professional was asked to evaluate each question of the interview (5-point Likert scale) regarding pertinence and clarity.

Studies II and III are reviews of the literature deemed pertinent for the subsequent empirical studies. Research synthesis or literature reviews have several advantages since they summarize in a comprehensive way research results for clinicians, policy makers, general public and highlight areas that need further research (Moncrieff, 2003).

Study III is a narrative review on self-report instruments assessing delusions. Narrative reviews are comprehensive narrative syntheses and critical analysis of the literature, providing an up-to-date knowledge about a specific topic or theme, and usually do not follow a systematic method for collecting the relevant studies (Uman, 2011). We used broad criteria of inclusion and exclusion in our review and attempts were made to find the most relevant articles concerning self-report instruments for delusions.

Notwithstanding the importance of narrative reviews, narrative reviews are not a strong form of evidence to provide information for clinical decisions (e.g. decisions on treatment) since they comprise several sources of bias and are generally broader in nature (Uman, 2011). Study II aimed at rigorously identifying, reviewing and critically discussing the existing contextual behavioural interventions for people within the psychosis continuum. The most adequate design for Study II was performing a systematic review. A systematic review uses systematic methods, described in an explicit way (thus allowing for replication), to identify, select and critically assess (e.g. risk of bias assessment) the available research in order to provide a systematic and synthetic summary of the existing studies characteristics and results (Higgins & Green, 2011). We have carefully analysed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines and the recommendations from the Cochrane Collaboration (Higgins & Green, 2011). Nevertheless, this design was not possible due to practical issues, such as available time-frame and human resources allocated to the study. We attempted to standardize the methods used as much as possible (very similar to the systematic method), nevertheless, some criteria to consider a study as a systematic review were not met (mainly the ones regarding selection of studies including unpublished results).

4.2. Research design.

The majority of the empirical studies comprised in this project follow a cross-sectional design. Although cross-sectional designs do not allow to assume causality, authors have argued that these methods are still valid to unveil the associations found

between the variables tested and to test if these associations are related with the underlying theoretical model (Hayes, 2013; Mueller & Hancock, 2007). Notwithstanding the limitations of cross-sectional designs, we considered that this was the most feasible design for the studies regarding development and psychometric study of assessment instruments and process studies taking into account several aspects, such as the populations characteristics (low prevalence, low levels of insight, results easily affected by burden, low levels of engagement in assessment moments), the designs used by previous research in similar studies, the exploratory nature of the majority of studies, the human resources available. Regarding the intervention studies, it was necessary to follow a longitudinal design since the aim was to analyse the influence of an intervention throughout the time (therapeutic change). Longitudinal designs, which imply at least two different and independent assessment moments, allow to infer direction and temporality in the relationship between variables, analysing the influence of time (e.g. stability or change) (Cole & Maxwell, 2003). This design has several advantages and amongst them is its application to early intervention treatment outcomes (Anstey & Hofer, 2004).

Ideally, the most adequate design to explore the benefits of the COMPASS intervention would be to perform a Randomized Controlled Trial, since RCT are the best way to obtain convincing evidence (e.g. considering the evaluation by the GRADE approach – Guyatt et al., 2008). An RCT has several methodological issues that must be followed rigorously, such as the random allocation of participants per intervention type (concealment of allocation being recommended), the accurate measurement of potential confounding variables, some type of blinding, among others (Banerjee, 2003). After a careful analysis of the methodology and its feasibility, we considered that some RCT characteristics would not be possible to achieve due to time (e.g. randomization of participants would not be possible since it would imply a large number of participants available at the same time in a population with a very low prevalence and with known engagement difficulties), sample (e.g. the sample size did not allow for the control of important confounding variables) and human resources concerns (e.g. the blinding of assessment would not be possible since the research and clinical team is both providing the intervention and conducting assessments). On the other hand, though less robust to measure efficacy (the effect of the intervention in ideal circumstances), practical studies aim to investigate the effectiveness of the intervention under real clinical settings (Banerjee, 2003), which is an important aim of this project.

Therefore, we performed a non-randomized controlled trial. Although participants were not formally randomized we minimally controlled research/clinician bias by taking a two-step approach. First, we have invited all participants with criteria to engage in the COMPASS intervention (recruitment for the experimental group); and, secondly, after the experimental group was closed all participants with criteria were included in the control group. The experimental condition consisted in the COMPASS intervention plus Treatment As Usual (TAU) and the control condition that received TAU only. Both groups were assessed through a structured interview and provided self-report measures at baseline and at the end of the COMPASS intervention or the equivalent period for the control group. After the post-treatment assessment, participants from the control group were given the opportunity to complete the COMPASS intervention. All participants that completed the COMPASS intervention were assessed three months after the intervention completion and were asked for self-report measures filled in by a significant other.

4.3. Participants and sample collection procedures.

The sample collection occurred between December of 2015 and July of 2018, in several health and education institutions. Recruitment for the interventions' studies was performed at three First Episode of Psychosis (FEP) units and one Community Mental Health Team (CMHT) from four of the institutions (cf. Table 4 for a description of the sample collection in each site)

Table 4
Description of the sample collection in each site

Institution	Clinical sample	
	Cross-sectional studies	Longitudinal studies
Associação para a Recuperação de Cidadãos Inadaptados da Lousã	✓	
Associação Quinta das Pontes – Comunidade Socioterapêutica	✓	
Centro Hospitalar do Baixo Vouga	✓	✓
Centro Hospitalar do Médio Ave	✓	✓
Centro Hospitalar e Universitário de Coimbra	✓	✓
Centro Hospitalar Leiria Pombal	✓	✓
Centro Hospitalar Tondela Viseu	✓	✓
Hospital Magalhães Lemos	✓	

In all recruitment sites, the sample collection procedure followed a non-probabilistic, convenience sample technique. Although all studies comprised clinical samples of people with a psychosis-spectrum disorder, there were slight differences in inclusion and exclusion criteria among studies, since some studies needed specific diagnostic criteria to be present (e.g. presence of specific symptoms for the validation of symptom-specific instruments). In Table 5 inclusion criteria are summarized and sample size for each study is included. A more detailed description of each sample can be found in each empirical study.

Table 5
Sample sizes and inclusion/exclusion criteria in each empirical study

Criteria	I	II	III	IV	V	VI	VII	VIII	IX	X
N	30	91	157	54	77	72	56	5	10	44
Psychosis-spectrum disorders (any type)	✓		✓	✓	✓	✓	✓			
with past/present auditory verbal hallucinations				✓						
with past/present delusions		✓								
Schizophrenia								✓		
Schizophrenia/Schizophreniform/Brief Psychotic disorder/Schizoaffective disorder (first 5 years)									✓	✓

4.4. Ethics and legislation.

Before data collection, the project received approval from the Portuguese Data Protection Authority (reference number: 12214/2015), Faculty of Psychology and Educational Sciences of the University of Coimbra ethics committee and Faculty of Medicine of the University of Coimbra ethics committee (reference number: CE-028/2014).

The validation of the Clinical Interview for Psychotic Disorders received further financial support and constituted itself as an independent project. The preliminary study was supported by the Faculty of Medicine of the University of Coimbra and Santander Totta Bank (grant reference FMUC-BST-2016-217). Janssen Cilag Limited funded the research project aimed at further validating the interview (protocol reference R092670SCH4058). This project also had the Portuguese Data Protection Authority (process number: 2962/2018) and Faculty of Medicine of the University of Coimbra ethics

committee (reference number: CE-098/2017) approval. All studies were also approved by each collaborating institution ethics committees and/or institution's clinical/directive boards.

The planning and implementation of the present research project complied with the Portuguese legislation (AR, 1966; 1998; 2004). The international scientific associations' ethic recommendations were also followed – Helsinki Declaration (World Medical Association, 2000), European Commission (2009, Pauwels & European Commission, 2007), the American Psychological Association (2010; Fisher, 2012). The recommendations of the Order of the Portuguese Psychologists' Code of Ethics (2011) were also taken into consideration.

Regarding data collection procedures, all participants had an individual session with a member of the research team (after referral and brief explanation of the study by each participants' primary clinician). In this session, it was given oral and written information about the study's objectives, procedures to follow, the possible benefits, drawbacks and expected risks, as well as participants' and researchers' rights and responsibilities. Anonymity, confidentiality and data protection procedures were assured, all questions were answered and participants were informed that they can withdraw their consent at any time without any consequences. If the participant agreed to participate in the study, itself or her/his legal representative signed a consent form. The investigator also signed and dated this form, thus indicating that informed consent was obtained and that the participant has had the opportunity to ask questions and these have been properly answered. The participant or her/his representative received a copy of a patient information sheet (with e-mail and telephonic contact of the principal investigator) and the informed consent form signed. The confidentiality of the data of each patient was respected at all times. In order to warrant the confidentiality of study data, personal and clinical data was only accessed by the principal investigator and team of collaborators. Study participants were identified by a unique code. Only the principal investigator had access to the correspondence between research codes and personal information.

In what respects to data analysis and study's results' publication, the principle of the scientific integrity was applied and therefore, all ethical principles inherent to scientific research were considered. Considering our social responsibility, during the present project, in addition to the scientific knowledge added to the field, we have produced materials that can be used in health care services in order to further improve recovery-oriented

interventions for people with psychosis (e.g. clinical interview, self-report instruments, manualized intervention).

4.5. Measures.

In the present project were used different types of measures, both regarding their format (interview versus questionnaire) and the informant rating the instrument: a) clinician-rated instruments, b) self-report instruments filled in by the participant; and c) self-report instruments filled in by each participant's significant other (only in the COMPASS intervention efficacy study – Study XI). All participants also provided socio-demographic data and clinical data (e.g. number of hospitalizations, age at illness/treatment onset, diagnosis) either during the clinical interview or through self-report clinical data questionnaires (at the beginning of the assessment protocol in the studies including self-report only). Overall, measures comprised assessment of symptomatology (psychotic symptoms and general psychopathological symptoms), functionality (in several areas of life), quality of life and quality of social relationships, adherence to treatment, defensive emotional reactions (e.g. shame, reactivity to stress), defensive coping with internal experience strategies (e.g. self-criticism, fears of compassion) and community integration. Instruments used in each study and type of information collected are presented in Table 6. A detailed description of each instrument and justification of the variables and instruments chosen is presented in each empirical study (cf. Chapter 4 | Empirical studies).

4.6. Statistical analysis.

In the present section, we briefly present the statistical analysis used throughout this project. The detailed description of the statistical procedures chosen as well as the reasons for choosing the specific analysis is presented in each study's methods sections.

Overall, quantitative data analysis was conducted using PASW (Predictive Analytics Software) Statistics (SPSS Inc, Chicago, IL, USA), version 21; SPSS macro PROCESS (Hayes, 2017); MPlus (Muthén & Muthén, 2007) software; MedCalc Statistical Software, version 16.4.3 (MedCalc Software bvba, Ostend, Belgium; https://www.medcalc.org; 2016); and qualitative data were analysed using NVivo qualitative data analysis Software (QSR International Pty Ltd. Version 10, 2012).

Table 6
Instruments used in each study and type of information collected

Instruments	I	II	III	IV	V	VI	VII	VIII	IX	X
Clinician-rated and Participant rated										
Clinical interview for Psychotic disorders (CIPD)	✓				✓	✓	✓		✓	✓
• only for establishing diagnosis					✓	✓	✓		✓	
• as an active assessment instrument	✓									✓
Clinician-rated										
Positive and Negative Syndrome Scale (PANSS)	✓						✓		✓	✓
Personal and Social Performance Scale (PSP)	✓				✓				✓	✓
Global Assessment of Functioning Scale (GAF)	✓									
Self-report										
Acceptance and Action Questionnaire (AAQ-II)									✓	
Anti-psychotic Medication Adherence Scale (AMAS)			✓							✓
Beliefs About Voices Questionnaire (BAVQ-R)				✓						
Depression, Anxiety and Stress Scales (DASS-21)										✓
Fears of Compassion Scale (FCS)						✓			✓	✓
Five Facets of Mindfulness Questionnaire (FFMQ-15)			✓							
Five Facets of Mindfulness Questionnaire (FFMQ-39)								✓		
Forms of Self-Criticism and Reassurance Scale (FSCRS)					✓			✓	✓	✓
Medication Adherence Scale (MARS)			✓							
Other as Shamer Scale (OAS)					✓			✓	✓	✓
Paranoia Checklist (PC)						✓		✓		
Reactivity to Stressful Situations Scale (RSSS)					✓					✓
Satisfaction with Life Scale (SWLS)		✓						✓		
Self-Compassion Scale (SELFCS)									✓	✓
Southampton Mindfulness Questionnaire (SMQ)							✓			✓
Types of Positive Affect Scale (TPAS)							✓			✓
Voices Acceptance and Action Scale (VAAS-12)				✓						
Willingness and Acceptance of Delusions Scale (WADS)		✓								✓
Feasibility and adequacy of intervention Measure – Qualitative & Quantitative (Interview & Questionnaire)								✓		

Instruments	I	II	III	IV	V	VI	VII	VIII	IX	X
Significant Other-Rated										
Family Questionnaire (FQ)										✓
Community Integration Scale for Adults with Psychiatric Disorders – Family version (CIS-APP)										✓

The significance level was set at .05 for all quantitative statistical procedures. All studies include descriptive statistics to describe samples' characteristics and the study's measures. Scales' internal consistency was assessed using Cronbach's alpha and reliability was considered adequate if $\alpha \geq .70$. In one study we used the Guttman's Lambda-2 as indicative of the measures' internal consistency, with values higher than .70 being considered acceptable. Composite reliability (CR) and average variance extracted (AVE) were also estimated in some studies as additional measures of instruments internal reliability and validity with values of $CR > .70$ and $AVE > .50$ being desirable (Hair, Anderson, Tatham, & Black, 1998). Univariate and multivariate normality were tested and normality was assumed if z-score values of skewness and kurtosis (calculated through skewness and kurtosis divided by their standard deviations) were between -1.96 and 1.96, if we obtained a non-significant Shapiro-Wilk/Kolmogorov-Smirnov test (depending on sample size) (univariate) and/or if Mardia's multivariate skewness and kurtosis test was non-significant (Mardia, 1970) (multivariate).

Pearson/Spearman (depending on normality tests) correlation coefficients were computed to examine the magnitude of the associations between study's variables and to determine scales' validity in psychometric studies. Cohen's criteria for interpretation of correlation coefficients were used, in which correlations in the order of .10 are "small," those of .30 are "medium," and those of .50 are "large" in terms of magnitude of effect sizes (Cohen, 1988, p. 79).

The PROCESS macro developed by Hayes (2013) was used to test simple, parallel and sequential multiple mediation analyses. PROCESS utilizes the bootstrapping method, with 95% bias-corrected confidence interval (CI) and resampled 5000 times. This method assesses total (c path), direct (c' path) and indirect effects of variables in a way that maximizes power and is robust against non-normality. The indirect effect represents the impact of the mediator variable on the original relation. The indirect effect is significant when CI does not include zero, which suggests that the difference between the total and direct effects was different from zero.

Dimensional analysis, in psychometric studies, were performed in two ways: confirmatory factor analysis and exploratory factor analysis, both performed in MPLUS software due to the non-normality of the data and relatively small sample size in some studies. Whenever exploratory analysis was needed, the number of factors to extract was decided through parallel analysis. Non-parametric estimators were used (Weighted Least Squares with Mean and Variance Adjustment – WLSMV or the Maximum Likelihood Robust estimator – MLR, since it has performed well with non-normal ordinal data – Li, 2016). To assess model fit, we first used the chi-square goodness-of-fit. A non-significant chi-square is desired as it suggests that the reproduced and observed covariance matrices do not differ significantly; hence, the data fits the proposed model structure (Kline, 2011). Moreover, the guidelines provided by Hu and Bentler (1999) were taken as indications of goodness of fit of the measurement models under analyses. Specifically, the model was considered a good fit for the data if a combination of the following indexes was found: Root Mean Square Error of Approximation (RMSEA) $\leq .06$; Comparative Fit index (CFI) $\geq .95$; Standardized Root Mean Residual (SRMR) $\leq .09$ (Hu & Bentler,1999), with a 95% confidence interval. The criteria used for exclusion of items was them presenting crossloading values higher than .32 (Tabachnick & Fidell, 2001).

Using the Medcalc Statistical Software, the kappa coefficient was computed in order to determine the reliability of dimensional assessments (interrater reliability/agreement). Kappa values greater than 0.7 indicate good agreement, Kappa values ranging from 0.5 to 0.7 indicate fair agreement, and Kappa values less than 0.5 indicate poor agreement (Williams & Manatunga, 1992).

In intervention studies, Wilcoxon signed-rank test was used to assess the significance of within differences between baseline and post-intervention. Effect sizes were calculated following Rosenthal's (1994) formula ($r = z/\sqrt{N}$) for non-parametric tests. For between group differences, the Mann-Whitney U test was used, with effect sizes computed through eta squared. Here, effect sizes were interpreted according to Cohen (1988) that reports the following intervals to r: small effect (.1 to .3) moderate effect (.3 to .5) and strong effect (.5 or higher); and to $\eta2$: no effect (0 to .003), small effect (.010 to .039), intermediate effect (.03 to .11) and large effect (.14 to .20).

CHAPTER III

DESCRIPTIVE AND REVIEW STUDIES

The "Clinical Interview for Psychotic Disorders" (CIPD):

Development and expert evaluation

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The "Clinical Interview for Psychotic Disorders" (CIPD):
Development and expert evaluation

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Abstract

New treatment approaches for psychosis indicate that effective interventions require a therapeutic focus on emotional regulation, cognitive appraisals, and functioning. Efficacy of psychotherapeutic interventions' evaluation has changed from exclusively assessing symptom frequency/severity to a comprehensive and functional assessment of interference, functioning, and the relationship people have with symptoms. This shift led to new needs in clinical assessment. This study aimed to develop and submit to expert evaluation a new clinical interview for psychotic disorders which considers the new needs of the field. CIPD was developed by a multidisciplinary team considering the DSM-5 criteria for psychotic and affective disorders. Relevant information was retrieved from leading research in the area of assessment and evaluation of interventions in psychosis. An expert panel of recognized professionals in the main areas of mental health evaluated each question of the interview (5-point Likert scale) regarding pertinence and clarity. A detailed description of CIPD is presented. Results from the experts' evaluation showed that, overall, the CIPD questions were evaluated as pertinent and clear for the target population. CIPD assesses both diagnosis or presence of psychotic symptoms and symptoms' psychosocial correlates. Psychotherapy and pharmacotherapy may benefit from CIPD since it may detect subtle changes caused by intervention and changes in areas other than symptom reduction.

Keywords: assessment, CIPD, clinical interview, psychosis.

Introduction

Psychotic disorders are defined in the DSM-5 (APA, 2013) as encompassing five specific domains of psychopathology: hallucinations, delusions, disorganized thought (speech), disorganized or abnormal motor behaviour (including catatonia), and negative symptoms. The term 'psychotic disorder' as a clinical entity can be used as a generic diagnostic term since it covers a set of severe conditions usually associated with high levels of adjustment difficulties, suffering, and poor clinical (psychopathological and physical) and social outcomes (Sim, 2006). Nevertheless, several longitudinal and long-term studies have showed rates of approximately 50% for significant improvement and relative independence in functioning outcomes, as well as rates of approximately 25% for full recovery (for a review see Silverstein & Bellack, 2008) in severely mentally ill patients.

Clinical assessment in psychosis

There are several assessment instruments for assessment of the psychosis spectrum: both in clinician-rated form and patient self-report form. The most widely used clinician-rated instruments including assessment of psychotic symptoms are: a) the Brief Psychiatric Rating Scale (BPRS, Overall & Gorham, 1962), a scale designed to measure several psychiatric symptoms along a 1-7 scale, including mood, behavioural, and psychotic symptoms among others; and b) the Positive and Negative Symptoms Scale (PANSS, Kay, Fiszbein & Opler, 1987), a scale designed specifically to assess severity of psychotic symptoms also in a 1-7 rating scale, encompassing scales of positive and negative symptoms and general psychopathology. Recently, the Signs and Symptoms of Psychotic Illness (SSPI, Liddle, Ngan, Duffield, Kho, & Warren, 2002) – a 20 item scale assessing 6 major psychopathological processes, common in psychosis – was developed with the aim of overcoming limitations of the two previously described instruments.

Research context-specific interviews and symptom-based instruments such as the following examples have also been developed and are widely used: a) Diagnostic: the Diagnostic Interview for Genetic Studies (DIGS, Nurnberger et al., 1994), Diagnostic Interview for Psychoses (DIP, Castle et al., 2006), or the Psychiatric Interview for Genetic Studies (EP-GENE, Pereira et al., 2013); b) Symptom-specific: the Clinical Assessment Interview for Negative Symptoms (CAINS, Kring, Gur, Blanchard, Horan, & Reise, 2013); Psychotic Symptom Rating Scale (PSYRATS, Haddock, McCarron, Tarrier, & Faragher, 1999) for hallucinations and delusions.

Interviews for genetic studies may be of particular utility in terms of epidemiological and genetic research and for initial assessment of diagnosis in clinical practice rather than for a comprehensive assessment of symptom severity or change. They are often extensive and particularly diagnosis and phenomenology-oriented. On the other hand, although symptom-specific instruments are often more practical for clinical contexts and very comprehensive in terms of symptom severity, the diagnosis-valence is not always present or sufficiently addressed (e.g. PANSS).

The Recovery model and assessment challenges

Notwithstanding the tradition of looking at psychotic disorders as exclusively biological conditions requiring mostly treatment within a biological framework, research stressed out the benefits of a bio-psycho-social approach with psychosocial interventions playing a major role in coping with symptoms, reducing the disease's burden, and enhancing patients' lives. Particularly interventions based on the theory of learned behaviour and cognitive mediation – mainly cognitive-behavioural therapy – have been shown as effective for this population (Klosterkötter, 2014; Sim, 2006; Thase, Kingdon, & Turnington, 2014; Wykes, Steel, Everitt, & Tarrier, 2008).

The recovery model in mental health has been receiving growing attention in the field of psychotic disorders, mainly in schizophrenia. Although still an evolving and rather controversial concept, recovery has been defined as a complex and multidimensional process that can be characterized under two different approaches: objective aspects of recovery (recovery as an outcome) and subjective aspects of recovery (recovery as a process). Recovery as an outcome is based on whether certain operationally defined criteria in certain domains (usually regarding psychopathology and functioning) are met, and recovery as a process is more related to the subjective process of changing and embracing a meaningful life (Silverstein & Bellack, 2008) (with several guiding principles being highlighted, such as self-directedness, empowerment, and hope among others (SAMHSA, 2005)), this being independent of the person's clinical improvement (Roe, Mashiach-Eizenberg, & Lysaker, 2011). These different definition approaches were also shown to be dependent on who is defining recovery. For example, researchers defining it more in terms of outcome criteria versus patients or family members defining recovery as an ongoing change process (Liberman, Kopelowicz, Ventura, & Gutkind, 2002). Studies did not reveal an association between symptom severity (objective recovery) and subjective self-report of being in recovery (Roe et al., 2011). The 'recovery journey' has been associated with

several characteristics, such as being an active, unique, multidimensional, and non-linear process, evolving through stages, encompassing different processes, namely connectedness (with others/community), hope and optimism about the future, identity, meaning in life, and empowerment (Leamy, Bird, Le Boutillier, Williams, & Slade, 2011).

Research informing clinical practice has been suggesting recovery-informed interventions where the therapeutic tools and techniques should support recovery processes (Leamy et al., 2011). Therefore, interventions should be strengths-based and promote a richer and more positive self-experience across several dimensions. Psychotherapeutic interventions have been shifting from a symptom-focused approach to a more person-based approach, highlighting the importance of valued living directions, relationship with thoughts and emotions, acceptance and willingness towards experiences and non-judgmental attention (e.g. Gilbert & Procter, 2006; Hayes, Strosahl, & Wilson, 1999).

In order to provide evidence-based interventions – as recommended in international guidelines (National Institute for Care and Excellence [NICE], 2013) – and considering the different targets proposed by the new models of intervention in psychosis, this paradigm shift in intervention should be accompanied by changes in assessment.

Integrated assessment of Psychosis: Assessment tools derived from the Recovery Model

This shift to an approach more focused on a growth, self-development, empowering process led to new advances in the assessment of psychosis. Several instruments measuring personal recovery from psychosis have been proliferating in the past years. Some commonly used instruments are the Recovery Assessment Scale (Giffort, Schmook, Woody, Vollendorf, & Gervain, 1995) (41 items assessing mainly hope and self-determination), the Mental Health Recovery Measure (Young, Ensing, & Bullock, 2005) (a 30-item scale measuring constructs as self-empowerment, self-redefinition, functioning, well-being, among others), the Self-Identified Stage of Recovery (Andresen, Caputi, & Oades, 2010) (a brief measure aiming to assess the stage of recovery of the consumer, from one's own perspective), the Illness Management and Recovery Scales (Mueser, Gingerich, Salyers, McGuire, & Reyes, 2005) (measure with client and clinician versions measuring aspects of illness management and recovery), among others.

With the intention of summarizing and critically analysing data for the existing measures, several comprehensive and integrative systematic reviews on existing and psychometrically tested self-report measures specifically developed for severe mental

illness, mainly psychotic disorders emerged (Burgess, Pirkis, Coombs, & Rosen, 2011; Cavelti, Kvrgic, Beck, Kossowsky, & Vauth, 2012; Law, Morrison, Byrne, & Hodson, 2012). The Recovery Assessment Scale has been suggested as the best available measure (e.g. Cavelti et al., 2012; Law et al., 2012). Interestingly, along with the evolution of assessment measures for personal recovery, the recovery orientation of mental health services has also been of major interest in research, with several measures being developed (for a review see Williams, Leamy, Bird, Harding, Larsen, Le Boutillier, Oades, & Slade, 2012).

Despite the growing body of research in assessment tools within the Recovery Model, symptom assessment tools and diagnostic interviews seem to be somewhat aside of this movement, and clinicians and researchers usually have to combine several assessment instruments in order to perform an integrative assessment. Furthermore, even considering symptom assessment, it is important to understand the relationship people have with symptoms (e.g. conviction, perceived interference, and empowerment) in addition to frequency, severity, and duration, since such an assessment provides clinicians with intervention targets that have been associated with improvement (e.g. less symptom believability associated with lower rates of rehospitalization (Bach, Gaudiano, Hayes, Herbert, 2013)).

Therefore, the present study had two major objectives. First, we aimed at developing a user-friendly, clinically relevant, comprehensive, and practical clinical interview that could be used both in research and clinical settings. We intended to provide researchers and clinicians with an assessment tool developed for assessing both diagnosis or presence/absence of psychotic symptoms, the psychosocial correlates of the symptoms (such as the relationship with symptoms, empowerment or interference caused by symptoms) and the most relevant co-morbidities (and their possible relationship with psychotic symptoms). Therefore, we intended to develop a clinical interview that allows a comprehensive assessment of symptom change (evaluation of clinical interventions). Moreover, to our knowledge, there are still no interviews based on DSM-5 criteria specifically developed for psychotic-spectrum disorders.

The second goal was to submit the developed interview to the quantitative and qualitative evaluation of an expert panel in order to preliminarily assess content validity.

Method

CIPD rationale and development

The CIPD was developed by a multidisciplinary team that comprised professionals from Psychiatry or Psychology backgrounds with experience in both: a) assessment and clinical intervention; and b) development and validation of assessment tools, including diagnostic interviews (for severe mental illness and other psychiatric populations).

With the DSM-5 release, the psychotic-spectrum diagnostic assessment is in need for updated assessment tools, particularly clinical interviews. Thus, the CIPD was developed based upon the DSM-5 criteria for psychotic disorders, mood-related disorders, and to a lower extent substance-use related disorders, social anxiety disorder, and trauma-related disorders (the main focus being on the psychotic symptoms). The in-depth and critical analysis of the DSM-5 criteria constituted the basis for the development of the diagnostic valence of the interview. Additionally, international guidelines were consulted in order to refine the assessment of specific symptoms (e.g. the 'National Institute of Mental Health's consensus conference on negative symptoms' (Kirkpatrick, Fenton, Carpenter, & Marder, 2006)). The additional phenomenological assessment questions were derived from literature review and discussion between clinical psychologists and psychiatrists with expertise in psychotic disorders and severe mental illness.

One of the main strengths of the CIPD, in comparison with interviews designed exclusively for a diagnostic purpose, is that it also includes several additional questions and ratings not needed or intended for diagnostic purposes. This clinical valence of the CIPD aims at evaluating the psychosocial correlates of the symptoms and, therefore, at being useful throughout the therapeutic process (identifying targets for intervention, assessing change, evaluating the efficacy of interventions). These questions and ratings were also derived from literature review and discussion of clinical practice. Several existent diagnostic and symptom assessment interviews (psychotic-spectrum and other disorders) were also analysed and discussed for strengths and limitations.

The development of the optional section (assessing social anxiety and trauma) was motivated by recent research emphasizing social anxiety symptoms and post-traumatic symptoms to the psychotic experience. The co-morbidity of psychotic-spectrum disorders and social anxiety disorder is widely known (e.g. Michail, 2013). On the other hand, the experience of a psychosis diagnosis and psychotic symptoms has been considered as a challenging or traumatic life event (e.g. Birchwood, 2003) and several studies have

associated the occurrence of psychotic symptoms with post-traumatic stress disorder (e.g. Ibáñez, Sevillano, Serven, & Sánchez, 2014). Therefore, this optional section aims at assessing symptoms that can be ameliorated with intervention.

A main concern during the development process was the inclusion of the patients' views and opinions regarding their experience. The CIPD tries to promote an active participation by the patients instead of them being mere passive subjects of the clinical assessment. In our opinion, this is a major limitation of the existing interviews.

The CIPD evolved from multiple drafts. After agreement from the development team, the CIPD was then submitted to an expert panel evaluation in order to assess: the relevance of the items and the clarity of language for the specific population (procedure below). All rating forms and observations were analysed. Questions with overall low scores suffered major transformations or were eliminated. Based on quantitative and qualitative data obtained, the sections with major modifications were the 'Delusions' subsection (question reformulation), 'Negative symptoms' subsection (question reformulation and additional questions were added for better assessment), the 'Disorganized Behaviour and Speech and Catatonia' subsection (question reformulation, elimination of questions particularly regarding observable behaviour). In all sections, assessment of interference, frequency, and severity were refined with additional questions and key instructions for the interviewer. In order to obtain more reliable scores regarding negative symptoms, disorganization and motor symptoms, questions were also reformulated to include ratings based on clinical observation ('Clinical observation items' with specific instructions and recommendations) when the interview aims to assess current symptoms in "the last week".

Expert panel evaluation

Participants.

A group of 17 professionals with extensive experience in working with psychotic-spectrum disorders were invited to join an expert panel whose purpose was to critically evaluate the CIPD. We benefited from the evaluation of 6 psychiatrists, 5 clinical psychologists, 4 nurses (with specialization in Mental Health and Psychiatric Nursing) and 2 social workers (working in severe mental illness settings). The participants had in average 17 years of professional experience in severe mental illness and psychotic disorders settings (5 to 32 years). Participants were part of community mental health teams specialized in

psychotic disorders, worked in first psychotic episode services, dual disorder diagnosis units and/or in acute inpatients units.

Procedure.

The experts were asked to carefully analyse and evaluate the interview in terms of two criteria: a) pertinence of the items and b) clarity of language (for the specific population) along a 0 (not at all pertinent/clear) to 5 (extremely pertinent/completely clear) scale. All questions of the interview were intended to be rated and a rating form was distributed with the interview. Participants were instructed to write suggestions, comments and critiques whenever they felt appropriate. For all questions with a score (either on pertinence or clarity) below 3, the participants were asked to correct or suggest modifications to the question.

Results

CIPD basic format

The CIPD is a new semi-structured clinical interview, based on DSM-5 criteria, for the assessment of the psychotic-spectrum.

In order to better meet the objectives of the clinician/ researcher, the CIPD can be used with different timeframe periods. At the beginning of the interview, the clinician/ researcher must choose the time period that best suits the assessment goals (e.g. lifetime for diagnosis; last week for monitoring change/evaluation of interventions) and follow the instructions that help the participant to better understand the period of time to which all the interview will be referring to. An important note is that there are slight differences in assessment depending on the time period chosen. For example, if the assessment is focusing on the present moment (last week) some ratings should be made by clinical observation (e.g. disorganization, some negative symptoms), but when assessing under a lifetime perspective, questioning should be privileged.

The CIPD follows a clinical approach of interviewing where questions are grouped by diagnosis and criteria for a specific diagnosis. If the patient fails to meet certain criteria, the interview provides "skip out" instructions directing the interviewer to the following criteria or diagnosis. The diagnosis sections tend to begin with an introduction to the section (what is going to be assessed) followed by one or two direct close-ended questions about specific symptoms (inviting a 'Yes' or 'No' response). If there is a positive answer, the

CIPD allows the clinician/researcher to gather comprehensive symptom information through a) requests for elaboration; or b) follow up questions (inviting more elaborate answers). It could be necessary for the interviewer to ask more questions in order to understand the presence/severity/interference of the symptoms. Regarding specific symptoms (known to be of difficult assessment either because of stigma/shame issues or lack of insight), additional questions are already suggested as supplementary questions. On the other hand, if a symptom is clearly present (e.g. delusions, negative symptoms) it should be scored accordingly even if the patient denies it. There are adaptations in several questions for patients with poor insight (in sections where insight might be particularly compromised). This interview also has a clinical focus on the current psychosocial impact of symptoms. At the end of each psychotic symptom section, the participant is asked to rate the interference associated with the symptom along a 0 (no interference) to 5 (extreme interference) scale. In the delusions section, the participant is also asked to rate the conviction associated with the belief (0 – I currently do not believe this – to 5 – I currently am certain that this corresponds to reality – scale). At the end of each psychotic symptom section (delusions, hallucinations, negative symptoms, disorganization and catatonia) the patients are also asked to place themselves in a continuum (with the aid of a visual analogue scale) regarding the perceived sense of empowerment towards symptoms (see Table 1). In the substance use section, the interviewer asks the participant about motivations for substance use, including motives linked to psychosis, along a 0 (I never use [substance] because of that) to 5 (I always use [substance] because of that) scale. At the end of each major section, participants are also asked to evaluate how the difficulties in the area just assessed have disturbed their lives (0-5 scale) in different areas (family, romantic relationship, work/school, social relationships, finances, and daily routine).

The clinician has to evaluate symptom severity, frequency and interference along a 0 (Minimal severity, without clinically relevant distress | Not present | No interference at all) to 5 (Maximal Severity – it may represent danger to self or others | Occurs constantly | Major interference in all areas of life, seriously impaired functioning with difficulties in activities of daily living) rating scale. All points of the interviewers' scales are defined at the beginning of the interview. Table 2 presents the summary table with instructions for clinician-rated measures and patient-rated scales that is provided for each psychotic symptom and that can be converted in quantitative scores.

Sections of the CIPD

The CIPD comprises a brief open-ended questioning overview followed by three mandatory sections and one optional section. The mandatory sections are only mandatory if the objective is to perform diagnosis. The CIPD can also be used to evaluate the efficacy of interventions and therefore clinicians/researchers can apply only the sections of interest (e.g. psychotic symptoms section to assess change in severity, conviction, interference, or empowerment regarding psychotic symptoms). The sections of the CIPD are described in detail below.

Introduction.

The first moments of the interview are aimed at establishing a non-directive relationship with the patient. The interviewer is instructed to explain the functioning of the CIPD and provide all explanations about procedures. The time period that will be used must be clarified at this moment (following instructions provided). This overview ends with an open-ended question about possible problems/difficulties that the participant might have/had in the past. This section also includes a rating scale (assessed by the patients and their clinicians) regarding adherence to anti-psychotic medication.

Psychotic-spectrum disorders.

The first section aims at a detailed assessment of psychotic (positive and negative) symptoms and is divided into two sub-sections. In the 'positive symptoms' section, the CIPD comprises the assessment of delusions and hallucinations – with specific questioning for the most common delusion themes and hallucinations' sensory modalities. It has also additional phenomenological assessment concerning thought alienation. Disorganized speech, behaviour, and catatonia are also targets of assessment. The 'negative symptoms' section includes assessment of blunted/ inappropriate affect, alogia, anhedonia, asociality, and avolition. This section also provides questions aimed at assisting the differential diagnosis between negative and depressive symptoms. In all subsections, there are questions that allow to specify whether symptoms occur(ed) during depression, mania, substance use, medical illness or in the absence of these conditions.

Table 1

Measuring empowerment regarding psychotic symptoms

Component	Guiding descriptions	A	B	C	D
Perceived ability to cope	I do not feel at all capable of dealing with it				
	I feel I am barely capable of dealing with it				
	I feel I am moderately capable of dealing with it				
	I feel I am quite capable of dealing with it				
	I feel I am definitely capable of dealing with it				
Perceived control & Ideas to improve*	I feel that none of the aspects of these difficulties are at all dependent of me (there is nothing I can do. I have no ideas).				
	I feel that the aspects of these difficulties are not only dependent of me (there are few I can do. I have ideas but I do not think I could act on them).				
	I feel that some aspects of these difficulties are dependent of me (there is something I can do. I have ideas that I intend to try in the future.)				
	I feel that some aspects of these difficulties are dependent of me (there are several things I can do. I have ideas that I intend to try soon).				
	I am certain that some aspects of these difficulties are dependent of me (there are several things I can do. I have already acted on my ideas)				
Hope	I do not have any hope that improvement is possible.				
	I have little hope that improvement is possible.				
	I have some hope that improvement is possible.				
	I am quite hopeful that improvement is possible.				
	I am certain that improvement is possible.				

Note. A = Delusions; B = Hallucinations; C = Negative Symptoms; D = Disorganization and Catatonia.

*The idea to improve does not have to agree with mental health professionals' therapeutic plans (e.g. taking medication, going to appointments), these are ideas the patient considers to be useful.

Table 2

Guiding questions for clinician and participant-rated scores

Item to assess	Clinician-rated (CR) / Participant-rated (PR)	Guiding questions and instructions*
Duration	CR	For how long did/do the [symptom] last? (days/weeks/months/years?)
Conviction	PR (0-5 rating scale)	How much do you think this idea [symptom] corresponds to reality? How much do you believe this to be true?
Interference	PR (0-5 rating scale)	How much do you think this [symptom] interferes with your life? It may be necessary to explain what interference means (see questions of Interference CR)
Interference	CR (0-5 rating scale)	How does [symptom] affect you emotionally? Does the [symptom] influence your everyday life? Your ability to work? What did you stop doing/became difficult to do because of [symptom]? Do you have new behaviours/actions because of [symptom]? Did [symptom] alter your relationship with others? How? (+ previous questions + clinical observation)
Frequency	CR (0-5 rating scale)	Does this [symptom] appear every day/week/how often? (+ previous questions + clinical observation)
Severity	CR (0-5 rating scale)	(previous questions + clinical observation)

Note. *All ratings (except for duration) refer to the current symptomatology. Current symptomatology can be considered in a period of 1 and a half months (maximum) for participants without present symptoms.

Mood-related disorders.

The second section aims to evaluate major dysfunctional mood episodes (depressive, manic, and hypomanic). A guided differential diagnosis subsection with bereavement is provided (following DSM-5 criteria) for use when appropriate. This section also allows a qualitative assessment of self-concept and social comparison with others and assessment of suicide risk (current signals, past risk factors and present association between psychotic symptoms and suicidality).

Substance-related and addictive disorders.

The third section provides questions aiming at assessing the presence of alcohol and cannabinoid-related disorders and associated interference. These two substances were selected because they are usually the most prevalent in combination with a psychotic-spectrum disorder. Taking into consideration that some patients have poor insight, some questions are adapted to these cases. Optional questions about the motives that precede substance use are provided, including motivations related with psychotic symptoms (alleviation/elimination) and medication side effects.

Associated symptoms [Optional].

In this last optional section, the CIPD allows clinicians to assess the presence of social anxiety symptoms and trauma related to the psychotic experience (that might include psychotic episodes, hospitalizations, and stigma).

Appendices.

At the end of the interview is provided a table illustrating the correspondence between the CIPD questions and the items required to score the Operational Criteria Checklist for Psychotic Illness (OPCRIT 4.0; McGuffin, Farmer, & Harvey, 19913).

Diagnosis included and diagnosis-independent ratings

The following diagnoses can be generated by the CIPD: 1) Section 1: Psychotic-Spectrum disorders – Delusional Disorder [297.1 (F22)]; Brief Psychotic Disorder [298.8 (F23)]; Schizophreniform Disorder [295.40 (F20.81)]; Schizophrenia [295.90 (F20.9)]; Schizoaffective Disorder [295.70 (F25.0/1)]; 2) Section 2: Mood-related disorders – Major Depressive Disorder [296.xx (F32/33.xx)]; Bipolar I Disorder [296.xx (F31.xx)] e Bipolar II Disorder [296.89 (F31.81)]; 3) Section 3: Substance-related and addictive disorders:

Alcohol use disorder [305/3.xx (F10.xx)]; Cannabis use disorder [305/4.xx (F12.xx)]. In the optional section (Section 4: Associated Symptoms) no diagnoses can be defined, nevertheless, the clinician/researcher can derive important information about social anxiety and trauma associated with the psychotic experience. Throughout the interview, if there is evidence of other (primary or co-morbid) disorders not covered by CIPD, other assessment tools must be used.

Several diagnosis-independent ratings are available for each set of symptoms, such as severity, conviction, frequency, interference in several areas of life, and empowerment. These ratings are performed both by the interviewer and the participant. The interview also allows a 'risk of suicide' score and independent scores for several motives for substance use.

CIPD Output

The CIPD has a checklist at the end which helps the clinician/researcher to organize the qualitative, categorical, and quantitative information gathered and establish diagnostic output and a differential diagnosis. The interview also provides several quantitative subscales for objective severity, frequency, and interference of psychotic, mood and substance use-related symptoms (clinician-rated – through provided rating scales) and conviction (regarding delusional activity) and perceived interference in several areas of life (all sections) (patient-rated). A total score of empowerment is also an output for psychotic symptoms. These scales can be combined in total scores for frequency of positive symptoms; severity of positive symptoms; severity of negative symptoms; interference of positive symptoms (interviewer rated and patient-rated); interference of negative symptoms (interviewer rated and patient-rated). It is also possible to compute a total score regarding the psychotic illness. A total score of interference for each area is provided as well, since the patient is also instructed to assess subjective interference of the positive and negative symptoms in the various areas of life (family; work/school; social relationships; finances; and daily routine), as well as a total score of empowerment with psychotic symptoms. In the mood section, the CIPD provides total scores for interference and severity of symptoms (clinician rated) and interference in several areas of life (patient rated). The same scores are available for the 'substance use' section with, additionally, individual scores for each motive for substance use. A total score for suicide risk, as well as a total score for adherence to anti-psychotic medication, can also be computed. It is possible to score the OPCRIT 4.0 from the scores obtained in the CIPD.

Expert panel evaluation

The results from the expert panel evaluation are presented in **Table 3**.

Discussion

Considering the paradigm shift in intervention and, consequently, assessment of psychosis motivated by the recovery model, the present study aimed at developing a clinically relevant, comprehensive, and practical clinical interview. This interview intended to provide an assessment of diagnosis or presence/absence of psychotic symptoms, the psychosocial correlates of the symptoms (such as the relationship with symptoms or interference caused by symptoms) and co-morbidities. The developed interview – CIPD – was then submitted to an expert panel for evaluation.

The expert panel evaluation revealed high scores both in terms of the pertinence of questions for diagnosis, phenomenology assessment, and psychosocial correlates of symptoms, as well as regarding language suitability for the psychosis population. This provides useful indicators of the possible acceptability of the CIPD by professionals working with psychosis populations and their perception of clinical utility. Nevertheless, this was solely a preliminary content validity evaluation and the CIPD is in need of further psychometric studies and evaluation of routine use.

Clinical relevance

A semi-structured clinical interview with the aim of assessing both diagnosis or presence/absence of psychotic symptoms and the psychosocial correlates of the symptoms is an extremely useful tool for clinicians for a) assessing intervention targets; b) monitoring change; and c) evaluating the efficacy of their psychotherapeutic interventions. After validation, the CIPD can also be useful in clinical research as an outcome measure in all forms of therapeutic intervention in psychosis.

Table 3
Experts panel evaluation

	Highest possible score	Clinical psychologists (*n* = 5) Mean (SD)	Psychiatrists (*n* = 6) Mean (SD)	Nurses (Psychiatry) (*n* = 4) Mean (SD)	Social workers (Psychiatry) (*n* = 2) Mean (SD)*
Professional experience in mental health (years)	-	16.60 (7.06)	18.50 (9.01)	23.25 (8.62)	5.50 (0.71)
Psychotic Symptoms (Total)	215				
Pertinence		117.70 (3.14)	118.95 (1.60)	120.32 (0.75)	--
Clarity		113.41 (5.77)	114.17 (4.39)	119.03 (1.15)	116.70 (2.83)
Psychotic symptoms (Positive Symptoms – Total)	175				
Pertinence		166.54 (3.91)	167.31 (2.99)	169.39 (1.50)	--
Clarity		160.93 (7.52)	161.14 (5.44)	166.81 (2.31)	163.14 (7.07)
Psychotic symptoms (Delusions)	65				
Pertinence		59.98 (0.89)	60.38 (0.00)	60.38 (0.00)	--
Clarity		57.11 (3.30)	57.55 (2.48)	58.60 (1.54)	56.88 (3.54)
Psychotic symptoms (Hallucinations)	35				
Pertinence		30.11 (0.89)	30.71 (0.00)	30.71 (0.00)	--
Clarity		29.60 (0.73)	29.55 (1.33)	30.71 (0.00)	30.21 (0.71)
Psychotic symptoms (Disorganization symptoms)	35				
Pertinence		29.46 (1.90)	28.88 (2.40)	30.43 (0.57)	--
Clarity		29.26 (1.79)	27.88 (2.86)	29.71 (0.82)	29.21 (2.12)
Psychotic symptoms (Negative Symptoms – Total)	40				
Pertinence		34.43 (1.30)	35.29 (0.82)	35.63 (0.00)	--
Clarity		32.95 (2.32)	33.60 (2.30)	34.88 (1.50)	35.13 (0.71)
Mood Section	90				

Pertinence		83.68 (3.05)	85.11 (0.41)	83.03 (2.87)	--
Clarity		80.48 (4.21)	82.27 (2.84)	84.28 (1.15))	85.28 (0.00)
Substance – Use section	105				
Pertinence		99.44 (1.79)	100.24 (0.00)	98.24 (4.00)	--
Clarity		96.84 (5.08)	99.07 (1.60)	98.49 (1.50)	100.24 (0.00)
Social Anxiety section	40				
Pertinence		35.23 (0.89)	34.77 (2.09)	34.88 (1.50)	--
Clarity		33.80 (1.91)	34.44 (2.09)	35.38 (0.50)	35.63 (0.00)
Trauma section	35				
Pertinence		30.11 (0.89)	29.86 (2.10)	29.96 (1.50)	--
Clarity		29.29 (2.05)	30.36 (0.56)	30.46 (0.50)	30.71 (0.00)
Diagnosis specific questions	315				
Pertinence		304.87 (9.49)	306.75 (3.01)	308.08 (2.45)	--
Clarity		295.07 (12.34)	296.91 (7.89)	303.83 (3.86)	304.08 (8.49)
Diagnosis-independent ratings	95				
Pertinence		88.67 (2.61)	90.26 (0.00)	87.26 (6.00)	--
Clarity		84.46 (8.32)	87.93 (4.76)	89.93 (0.58)	88.76 (2.12)

Note. SD = Standard deviation.

*Considering the academic background (in terms of psychopathology) in Portugal for social workers, we instructed the two professionals to evaluate the interview only regarding clarity.

In terms of practicality, the CIPD is not intended to be extensively time-consuming and the absence of detailed assessment of other (non-related to psychosis) psychiatric conditions/symptoms contributes to this end. In the overall process of developing the CIPD, we were concerned with suiting the interview for the severely mentally ill, taking into account this population's special features such as cognitive and attention deficits, difficulties in abstract thinking, negative symptoms, poor rapport, poor mentalization and theory of mind skills, and difficulties in interpersonal relationships. This concern was aimed at reducing the patient's and clinician's burden in the diagnosis and assessment process (this advantage is also transposable to research settings where reducing the participant's burden is even more advised). A clinical interview that allows both symptom and diagnostic assessment and subjective experience of symptoms and psychotic illness in a manner congruent with the Recovery model for severe mental illness offers important advantages. The fact that two important components of clinical assessment are covered with a single instrument (instead of using multiple assessment tools) can contribute to lighter assessment (and, therefore, a more valid one). Nevertheless, the CIPD does not aim at replacing or constituting itself as an alternative to other tools developed considering the recovery approach (assessing non-symptom related specific aspects of recovery) and a combination with those instruments may be needed for an integrative assessment. For instance, although the 'empowerment with symptoms' scales' provided by CIPD were developed based on 'empowerment' definitions congruent with the Recovery Model, they do not intend to measure empowerment in a global sense (in terms of life directedness, independence of health services, social empowerment, and other more general components). Since CIPD is an interview for psychotic symptoms (although assessed in a way not exclusively focusing on symptom frequency/severity) the main aim of the empowerment scales is to understand the way people experience symptoms to be in their control, believe in the possibility of improving difficulties, have sense of hope and plans for improvement. The potential advantage of CIPD is to include a wider assessment of symptoms and relationship with symptoms in a tool that also allows for diagnostic purposes.

Recommendations and future directions

Given the semi-structured nature of the CIPD, this interview is designed to be administered by interviewers that: a) have basic understanding of psychopathology, mental state examination, psychiatric disorders, and in-depth knowledge of psychotic disorders; b)

are familiar with assessment and diagnostic procedures; c) are able to exercise clinical judgment (further questioning for differential diagnosis when needed and for decision-making based on direct observation of manifest psychopathologic symptoms in the context of poor insight). It is recommended that the clinician/researcher have some time available after the interview in order to review answers and score the rating forms. In spite of the information collected through the expert panel, the CIPD's clinical and research utility should be tested in clinical and research settings. The validation of the CIPD is already under way with the following parameters: a) interrater reliability; b) convergent and divergent validity of specific sections of the CIPD; c) sensitivity and specificity (ability to detect differences in different psychotic diagnostic categories and ability to correctly identify the diagnosis given by the patient's psychiatrist); c) factor structure of the quantitative ratings; and d) predictive validity (measuring change after clinical intervention).

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Competing interests

The authors declare no conflict of interest.

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Assessing delusional ideation:

A narrative review of self-report instruments

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A narrative review of self-report instruments

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Abstract

According to recent models of recovery in psychosis, the patients' perspectives about their own difficulties, symptoms and goals (health-related and in other areas) are of major importance in intervention. Self-report measures have been increasingly studied and several authors have pointed out their validity, reliability and clinical utility in people with psychotic-disorders. The present study sought to review and critically analyse the available self-report instruments for assessing delusions. Four instruments met the inclusion criteria: Characteristics of Delusions Rating Scale; Beliefs Rating Scale; Peters Delusions Inventory; and Conviction of Delusional Beliefs Scale. All scales assess delusions in a multidimensional perspective and present adequate psychometric properties, although with high variability within studies. Refining the psychometric studies of the existing instruments (mainly confirmatory factor analysis, reliability and diagnostic accuracy analyses) and developing new instruments focused on coping are future areas of research interest.

Keywords: assessment; delusions; psychosis; self-report measures

Resumo

As perspetivas dos pacientes acerca das suas próprias dificuldades, sintomas e objetivos (relacionados com a sua saúde e outras áreas) são de extrema importância para as intervenções, principalmente tendo em conta modelos recentes baseados na recuperação (no original *recovery*) das perturbações psicóticas. Cada vez mais os instrumentos de autorresposta têm sido estudados, sendo que vários autores têm defendido a sua validade, fiabilidade e utilidade clínica para pessoas com o diagnóstico de uma perturbação psicótica. Este estudo teve como objetivo rever e analisar de forma crítica os instrumentos de autorresposta existentes para a avaliação da ideação delirante. Quatro instrumentos preencheram os critérios de inclusão: a escala de características dos delírios (*Characteristics of Delusions Rating Scale*), a escala de avaliação das crenças (*Beliefs Rating Scale*), o inventário de delírios de Peters (*Peters Delusions Inventory*) e a escala de convicção nas ideias delirantes (*Conviction of Delusional Beliefs Scale*). Todas as escalas avaliam as ideias delirantes de uma perspetiva multidimensional e todas apresentam propriedades psicométricas adequadas. No entanto elevada variablidade foi encontrada entre os estudos. O refinar dos estudos psicométricos destes instrumentos (principalmente o investimento em análises de estrutura factorial, fiabilidade e acuidade diagnóstica) e o desenvolvimento de novos instrumentos focados no *coping* com os delírios são áreas de investigação de interesse para o futuro.

Palavras-chave: avaliação; delírios; psicose; instrumentos de autorresposta

Introduction

Delusional beliefs are core symptoms in psychotic disorders and can be conceptualized as fixed and rigid cognitive representations that are not amenable to change despite clear or reasonable conflicting evidence (APA, 2013). It has long been argued that delusions should be assessed multi-dimensionally, laying particular emphasis on distress and content of beliefs (Lincoln, 2007). Nevertheless, different authors have suggested different dimensions to assess in delusional activity, such as conviction, extension, bizarreness, disorganization, pressure, affective response, deviant behaviour resulting from delusions (grouped into delusional involvement and delusional construct; Kendler, Glazer, & Morgenstern, 1983), distress, belief strength, obtrusiveness, concern (Garety & Hemsley, 1987), belief-certainty, self-monitoring, and emotional commitment (Harrow et al., 2004), among others.

The most common method to assess delusions is through clinical interviews of psychotic symptoms. The most psychometrically sound and widely used interviews specifically designed to evaluate psychotic symptoms are the Positive and Negative Symptom Scale (PANSS; Kay, Fiszbein, & Opler, 1987) and the Psychotic Symptom Rating Scales (PSYRATS; Haddock, McCarron, Tarrier, & Faragher, 1999). Both assess the presence of delusions, with PANSS evaluating delusions' severity and PSYRATS assessing several dimensions of the delusional experience, namely preoccupation, duration, conviction, frequency and intensity of distress, and life disruption. A classical and very useful scale is the Dimensions of Delusional Experience (Kendler et al., 1983) that was developed to assess five dimensions of delusional experience (conviction, extension, bizarreness, disorganization and pressure). Other examples of relevant interviews are the Signs and Symptoms of Psychotic Illness rating scale (SSPI; Liddle, Ngan, Duffield, Kho, & Warren, 2002), the Brown Assessment of Beliefs (BABS; Eisen et al., 1998), both intending to assess conviction and insight on beliefs in a range of possible diagnoses. Nevertheless, comprehensive assessment of specific aspects (e.g., relationship with symptom, coping with symptom's strategies) is often difficult. In this regard, Wessely and collaborators (1993) developed the Maudsley Assessment of Delusions Schedule (MADS) which includes a very useful section on behavioural reactions to the nuclear belief.

Although clinical interviews are extremely useful in clinical and research settings, they are usually time consuming and not well suited for the general population and/ or populations with subclinical symptoms. Self-report instruments are increasingly popular,

in clinical and research settings, considering its advantages in terms of their practicality (i.e. time, administration issues). Additionally, self-report allows the researcher to gain access to the respondents' perceptions. This acknowledgement of the persons' view of their difficulties, goals (health-related and in other areas) and life-orientation has been highly valued in more recent recovery-based models of psychosis. These types of models postulate autonomy, independence and empowerment with consumers participating in all decisions (Frese, Knight, & Saks, 2009).

Although self-report measures may have some disadvantages in assessing psychotic symptoms or assessing other symptoms in populations with psychosis (e.g., due to possible cognitive deficits, lack of awareness and/or insight, shame-related difficulties, social desirability – for a review see Bell, Fiszdon, Richardson, Lysaker, & Bryson, 2007) some studies have been emerging defending the use of self-report in this context. Regarding insight, it has been found that patients with schizophrenia are able to accurately report symptoms and personality characteristics and a distinction has been made between awareness of symptoms and awareness of illness (Bell et al., 2007), thus emphasizing the potential validity of self-report measures for this population. Rabinowitz et al. (2008) also found results supporting the reliability and validity of patient reports, specifically for symptom severity, with a significant linear trend emerging between the clinician and patient-rated measures (differences between the clinician's and patient's ratings attributed to poor insight). In a study comparing a self-report measure (BASIS-R) and a clinician-rated method (the Brief Psychiatric Rating Scale), Niv, Cohen, Mintz, Ventura, and Young (2007) found good concurrent validity and the self-report measure was found to identify moderate and severe psychosis. The authors argued the validity of using self-report assessment of psychotic symptoms, highlighting its advantages of practicality (easier to administer, interpret and score) and reliability. Considering the delusions assessment, Bell et al. (2007) also state that although self-report do not allow to perform diagnosis, such instruments may have utility in assessing specific information on delusions (e.g., distress, preoccupation) and comparing clinical and non-clinical populations.

Specifically, for delusions' assessment, Lincoln, Ziegler, Lüllmann, Müller, and Rief (2010) found good agreement ratings between self (using several multidimensional questionnaires) and observer-rated assessment of delusions, the latter being an indicator of the reliability of patient information (although lack of insight may cause reduced reliability). The concordance of patient and clinician ratings did not vary according to symptom severity, duration of the disorder or patient status (in or outpatient).

Considering the growing body of research on psychosis assessment, reviews have been emerging on assessment instruments and methods for psychotic symptoms. In 2010, Ratcliff, Farhall, and Shawyer identified and explored ten scales measuring different aspects of auditory hallucinations and divided them into four categories: multidimensional assessment, coping strategies, rating of beliefs and acceptance or mindfulness scales. Killian et al. (2015) analysed ten instruments for assessing negative symptoms that included blunted affect, the focus of the review, considering instrument type, characteristics, administration and psychometric properties.

Another review, performed by Lako and collaborators (2012) focused on associated depressive symptoms in people with schizophrenia: six instruments met the criteria and were analysed regarding several psychometric properties, symptom dimensions, type of rater (self-report or clinician-rated), training needed, duration and other characteristics. With the aim of shedding light into the 'simple delusional syndrome' and specifically to describe and analyse the 'Simple Delusional Syndrome Scale' (SDSS), Forgácová (2008) briefly reviewed the characteristics of three widely known rating scales: the Dimensions of Delusional Experience Scale (Kendler et al., 1983), the Belief Rating Scale (Jones & Watson, 1997) and the Brown Assessment of Beliefs Scale (Eisen et al., 1998), additionally to describing the SDSS. The authors also reviewed the importance of rating scales for clinical practice and evaluation of treatment efficacy. Notwithstanding the relevance of this review, considering the growing body of research over recent years, an updated review is in need in the field. Moreover, the aim of the cited review was not to provide a detailed analysis of the most relevant instruments in delusion assessment and several relevant and useful instruments were not described. Therefore, the aim of the present study was to provide an updated narrative review of existing valid and reliable self-report instruments for assessing several aspects of the delusional activity. We focused specifically on self-report measures considering the importance being given to the self-assessment of experiences in psychosocial interventions for psychosis. The patient's perspective has been highly valued in recent research (e.g., Ashcroft, Barrow, Lee, & MacKinnon, 2012; Gumley & Macbeth, 2014) and self-report measures have been widely used in clinical trials either for assessing symptoms or therapeutic processes (for a review of clinical studies see Wykes, Steel, Everitt, & Tarrier, 2008).

Method

Search strategy

To identify relevant studies, two leading electronic databases were searched, namely MEDLINE/PUBMED and b-on. Google scholar was also searched; references from relevant articles and prior reviews were also analysed. Articles published in English language from the first available date until April 2016 were considered. Key words included a combination of two groups of terms: a) Assessment-related terms, which included key words as 'assessment', 'evaluation', 'validation', 'psychometric', 'instrument', 'measure', 'questionnaire', 'scale'; b) Delusion-related terms, including words as 'delusion', 'delusional ideation', 'belief. In a first phase (screening) we examined titles and abstracts to select pertinent articles, then articles seemingly to have the eligibility criteria (see below) were retrieved and fully analysed.

Eligibility criteria

Our inclusion criteria included: a) self-report instruments; b) developed for assessing delusions in clinical populations; c) with at least one parameter regarding psychometric properties made available. Instruments based on clinician assessment or clinical interviews were excluded and self-report instruments developed only to assess overvalued beliefs in non-clinical populations (and therefore with no clinical application to people with psychosis) were also not subject of analysis. Instruments limited to assess specific types of delusions (e.g., persecutory delusions) were also excluded. Instruments without any psychometric study, although used in other (cross-sectional, treatment) studies, were not considered.

Analytic strategy

In the present review, we analysed the specific aims of each instrument as well as their practical aspects, such as issues regarding administration, instructions, number of items, response scale. In terms of psychometric properties, each instrument was evaluated regarding its reliability and validity. Reliability was assessed based on reported internal consistency with values above .70 being considered acceptable (Kline, 1999) and test-retest correlation when reported, with higher values indicating higher temporal stability. Validity comprised analysis of convergent and divergent validity. Magnitude of correlations was

interpreted according to Cohen (1988). Whenever provided factor structure was analysed based on exploratory or confirmatory adjustment data.

Results

Four instruments met the inclusion criteria. The psychometric properties available for each scale are presented in Table 1 and the description of each instrument's aims, instructions and response scale is presented below.

Characteristics of Delusions Rating Scale (CDRS; Garety & Hemsley, 1987)

The CDRS comprises eleven belief characteristics, namely conviction, preoccupation, interference (influence on behaviour), resistance (disliking the experience), dismissibility (from the mind), absurdity, self-evidentness, reassurance seeking (from others), worry, unhappiness (caused by belief), and pervasiveness (inability to attend other thoughts). The participant is asked to rate each belief characteristic using a visual analogue scale (with each end-point described) which is then converted into a 10-point scale.

Beliefs Rating Scale (BRS; Jones & Watson, 1997)

In the BRS the participants are instructed to rate in twelve diagrams representing the belief characteristics, the degree to which each characteristic represents their experience (1 to 5 – with higher scores meaning higher levels of endorsement). The twelve characteristics include conviction, influence on behaviour, influence on cognition, truthfulness, importance (to the participant), frequency, acceptability (to others), use of imagination required, speed of formation, perceptual evidence, focused thought, and evoked affective content.

Peters Delusions Inventory (PDI; Peters, Joseph, & Garety, 1999)

Although initially developed to assess delusions in non-clinical populations, the PDI has been used and has direct applicability to people with psychosis. The PDI has a 40-item (original) and a 21-item version. The original version was developed from the Present State Examination (Wing et al., 1974) and included eight categories (5 items each): delusions of control; misinterpretations, misidentification, and delusions of reference; delusions of persecution; expansive delusions; delusions concerning various types of influence and primary delusions; other delusions; simple delusions based on guilt, depersonalization, hypochondriasis; thought reading, insertion, echo, broadcast.

Additionally to the 'yes' or 'no' answer, when the participant gives a positive answer he is asked to rate the experience in a 5-point Likert scale for distress, preoccupation and conviction. The 21-item version was based on the highest loading items after a principal component analysis of the 40-item version.

Conviction of Delusional Beliefs Scale (CDBS; Combs et al., 2006)

The CDBS is a specific measure to assess conviction in delusions and comprises nine items reflecting emotional, cognitive and behavioural aspects of conviction. The participant is instructed to rate each item in a Likert scale ranging from 1 (not at all/never) to 5 (all the time/always) and the CDBS items are summed to obtain a total score, with higher scores reflecting greater belief conviction. An important advantage for the specific population is that the CDBS items and instructions are written at a 5th grade reading level.

In summary, all four instruments represent delusions as dimensional constructs, two scales focus on belief characteristics (CDRS and BRS), one scale assesses different types of delusions regarding its presence and associated characteristics (PDI) and one scale specifically focuses on different aspects of the 'conviction' characteristic (CDBS).

Other relevant instruments not included in the review

Several instruments were excluded from the review for different reasons. Considering that persecutory delusions are the most common type of delusions (APA, 2013) several instruments have specifically focused on paranoid and persecutory delusions. Although this specificity was not the aim of this review it is important to acknowledge the theoretical, clinical and psychometric relevance of some specific instruments. The majority of the available instruments focus on assessing the paranoid ideas' presence, frequency, conviction and associated distress. Nevertheless, there are also scales aimed at assessing the beliefs the participant has about their paranoid thoughts and also the cognitive, emotional, physical and behavioural coping responses elicited by them. Other measures were excluded from the review because they were developed to assess delusion-like experiences in the clinical population and therefore lack applicability in clinical settings. One scale, that aims to assess willingness to experience delusions and acceptance of the delusional experience, fulfilled all criteria but was excluded from the review due to its current unpublished status. These relevant scales are cited in Table 2 along with the reasons for exclusion.

Table 1

Overview of the psychometric properties of the reviewed instruments

| Instrument | Reference and sample | Reliability | Validity | | | Dimensional structure |
			Convergent	Divergent	Criterion/ Diagnostic accuracy	
Characteristics of Delusions Rating Scale*	Garety & Hemsley, 1987 *N* = 55; with delusions regardless of diagnosis	Temporal Stability: n/a Internal consistency: n/a	Cluster analysis. Group membership (high, moderate and low scores on characteristics): Associations with both psychiatrist diagnosed 'clinical depression' and self-rated depression (WDI) were found. Associations between characteristics are presented (relative independence of most of the variables).			EFA: Principal Components Analysis with varimax rotation: 4 components (distress, belief strength, obtrusiveness and concern) (100% of variance) CFA: n/a
Beliefs Rating Scale	Jones & Watson, 1997 *N* = 20 (paranoid schizophrenia); *N* = 20 (Anorexia); *N* = 20 (controls)	It is stated that pilot studies confirmed reliability and temporal stability, although values are not reported	The scale differentiated the delusion in schizophrenia from the overvalued idea in anorexia for seven of the 12 belief variables. Significant differences were also found between delusions and normal religious beliefs.			EFA: n/a CFA: n/a
Peters Delusions Inventory	Original study: Peters, Joseph, & Garety, 1999 (40-item) *N* = 20 (inpatients with psychosis); *N* = 272 (non-clinical sample)	Temporal Stability: *r*=.82; *p*<.05 (non-clinical) Internal consistency: alpha=.88 (non-clinical)	Percentages of common variance between 33% and 58% with measures of schizotypy (STA), aberrant beliefs (MgI) and delusions (DSSI) – non-clinical	n/a	All scales and ratings were significantly higher in the clinical group.	EFA: For 36 items (items with very low or very high rates of endorsement were eliminated). Principal components analysis with varimax rotation: 11 components (religiosity, persecution, grandiosity, paranormal beliefs, thoughts disturbances, suspiciousness, paranoid ideation, negative self, 'catastrophic ideation and thought broadcast', 'ideas of reference and influence') (59.1% variance explained) CFA: n/a

Instrument	Reference and sample	Reliability	Validity		Criterion/ Diagnostic accuracy	Dimensional structure
			Convergent	Divergent		
	Jung et al., 2008 (40-item, Korean version) $N = 310$ (non-clinical); $N = 60$ (inpatients with psychosis)	Temporal Stability: $r=.67$(non-clinical) Internal consistency: alpha=.92 (non-clinical)	Significant moderate correlations with STA and psychosis proneness	n/a	Higher endorsement and ratings in clinical group.	EFA: Principal component analysis with varimax rotation: 10 components (somatic concern, grandiose ideas, religious or superstitious ideas, passivity experiences, persecutory ideas, thought disturbances, 'jealousy and suspiciousness', paranormal beliefs, olfactory hallucination, idea of guilt) (57% variance explained) CFA: n/a
	Verdoux et al., 1998 (21-item, French version) $N = 444$ (non-clinical)	Temporal Stability: n/a Internal consistency: n/a	n/a	n/a	n/a	EFA: Principal components analysis with varimax rotation: 7 components (persecution, thought disturbances, grandiosity, religiosity, paranormal beliefs, reference guilt and apocalypse) (55.3% variance explained) CFA: n/a
	Peters, Joseph, Day, & Garety, 2004 (21-item) $N = 33$ (patients with delusions); $N = 444$ (non-clinical)	Temporal Stability: $r=.78-.81$ Internal consistency: alpha=.82 (non-clinical) and alpha=.90 (clinical)	Strong correlations with DSSI	No correlations with extroversion, introvertive anhedonia andcognitive disorganization (O-LIFE)	Higher alpha in the clinical sample. All ratings higher in the clinical group.	EFA: Principal Component Analysis with a forced 1-component solution (100% variance explained) CFA: n/a
	Lopez-Ilundain, Perez-Nievas & Otero, 2006 (21-item; Spanish version) $N = 365$ (non-clinical)	Temporal Stability: n/a Internal consistency: alpha=.75	n/a	n/a	n/a	EFA: Principal components analysis with varimax rotation: 7 components (influence, depressive, paranoid, grandiosity, referential, magic thinking and religiousness) (53.7% variance explained) CFA: n/a

| Instrument | Reference and sample | Reliability | Validity | | Criterion/ Diagnostic accuracy | Dimensional structure |
			Convergent	Divergent		
	Lincoln, 2007 (21-item; German version reporting results from Lincoln, Keller, & Rief, 2009 – validation study published in German) $N = 53$ (schizophrenia); $N = 359$ (non-clinical)	Temporal Stability: n/a Internal consistency: alpha=.89 (clinical); alpha=.85 (non-clinical)	Strong correlation with the SPQ	n/a	n/a	EFA: n/a CFA: n/a
	Preti et al., 2007 (21-item; Italian version) N=81 (mental disorder with psychotic features); N=210 (non-clinical sample)	Temporal Stability: n/a Internal consistency: n/a	n/a	n/a	The clinical group scored significantly higher on PDI. In males, the PDI scores were statistically different across general groups (control, psychosis, organic illness, anxiety) but not between psychotic diagnoses. Cut-off>8 provides the best combination of sensitivity (0.74), and specificity (0.79) (AUC, 0.815). Predictive positive value = 57%; Negative predictive value = 88%	EFA: n/a CFA: n/a

| Instrument | Reference and sample | Reliability | Validity | | Criterion/ Diagnostic accuracy | Dimensional structure |
			Convergent	Divergent		
	Jones & Fernyhough, 2007 (21-item) *N* = 493 (non-clinical)	Temporal Stability: n/a Internal consistency: alpha=.77; factor alphas ranging from .55 to .80	n/a	n/a	n/a	EFA: Principal axis factoring with oblique rotation for the three-factor structure hypothesized (34.1% variance explained; loadings from .32 to 96) CFA: n/a
	Fonseca-Pedrero, Paino, Santarén-Rosell, Lemos-Giráldez & Muñiz, 2012 (21-item, Spanish version) *N* = 660 (non-clinical)	Temporal Stability: n/a Internal consistency: alpha=.91	Statistically significant correlations (small to moderate) with trait and state anxiety (STAI) and negative affect (PANAS)			EFA: Principal Unweighted least squares with Promin rotation: unifactorial structure (RMSR=0.097; goodness-of fit index=0.93) CFA: n/a
	Kao, Wang, Lu, Cheng, & Liu, 2012 (21-item; Taiwanese version) *N* = 154 (affecrive and non-affective psychosis); *N* = 99 (non-clinical)	Temporal Stability: .81 (total) to .87 (6 months) Internal consistency: alpha=.90 (schizophrenia); alpha=.94 (affective psychosis); alpha=.94 (non-clinical)	Statistically significant correlations (small to moderate) with BPRS	n/a	Endorsement higher in clinical group. PDI able to discriminate between clinical and non-clinical. Cut-off>5 provides the best combination of sensitivity (0.81), and specificity (0.61) (AUC = 0.752)	EFA: Principal component analysis with varimax rotation: 10 components (62.48% variance explained) CFA: n/a
	Prochwicz & Gaweda, 2015 (21-item, Polish version) *N* = 421 (non-clinical)	Temporal Stability: n/a Internal consistency: alpha= Total: alpha=.85; Guttman's split-half reliability=0.84; Subscales: alphas ranged from 0.85 to 0.87 and Guttman's split-half reliability from .83 to .85	n/a	n/a	n/a	EFA: Principal axis factor analysis with oblimin rotation: 14 components (58.68% variance explained) CFA: n/a

Instrument	Reference and sample	Reliability	Validity		Criterion/ Diagnostic accuracy	Dimensional structure
			Convergent	Divergent		
Conviction of Delusional Beliefs Scale	Combs, Adams, Michael, Penn, Basso & Gouvier, 2006 $N = 50$; schizophrenia, schizoaffective disorder or delusional disorder	Temporal Stability: $r=.81$; $p<.05$ (1 week), $r=.83$; $p<.05$ (2 weeks), $r=.77$; $p<.05$ (4 weeks) and $r=.70$; $p<.05$ (6 weeks) Internal consistency: alpha=.80	Moderate to strong correlations with conviction items (BABS and CDS), % of conviction rating scale and BPRS thought disorder scale	Weak correlations with other dimensions of the BABS and BPRS anergia; negative correlations with BPRS affect and disorganization, insight scale and Zung depression scale	n/a	EFA: Principal Components Analysis: unidimensional structure CFA: n/a

Note: EFA = Exploratory Factor Analysis; CFA = Confirmatory factor analysis; n/a = not available; BABS = Brown Assessment of Beliefs Scale; BPRS = Brief Psychiatric Rating Scale; CDS = Characteristics of Delusions Scale; DSSI = Delusions Symptom-State Inventory; MgI = Magical Ideation Scale; O-LIFE = Oxford-Liverpool Inventory of Feelings and Experiences; PANAS = Positive and Negative Affect Schedule; SPQ = Schizotypal Personality Questionnaire; STA = Schizotypal Personality Scale; STAI = State-Trait Anxiety Inventory; WDI = Wakefield Depression Inventory.
*Psychometric data also available for the CDRS (German version) as an expert rating scale from Gentner et al (2010).

Table 2
Relevant excluded instruments and reasons for exclusion

Instrument	Reference	Reason for exclusion
Paranoia Scale	Fenigstein, A. & Vanable. P.A. (1992). Paranoia and self-consciousness. *Journal of Personality and Social Psychology, 62*(1), 129-38. https://doi.org/10.1037/0022-3514.62.1.129	Specifically assess paranoid/persecutory/referential thoughts
Referential Thinking Scale	Lenzenweger, M.F., Bennett, M.E., & Lilenfeld, L.R. (1997). The Referential Thinking Scale as a measure of schizotypy: Scale development and initial construct validation. *Psychological Assessment, 9*, 452–463. https://doi.org/10.1037/1040-3590.9.4.452	
Paranoia Checklist	Freeman, D., Dunn, G., Garety, P.A., Bebbington, P., Slater, M., Kuipers, E., Fowler, D., Green, C., Jordan, J., Ray, K., 2005a. The psychology of persecutory ideation I: a questionnaire survey. *Journal of Nervous and Mental Disease, 193*, 302–308.	
The Beliefs about Paranoia Scale	Morrison, A.P., Gumley, A.I., Ashcroft, K., Manousos, I.R., White, R., Gillan, K., Wells, A., & Kingdon, D. (2011). Metacognition and persecutory delusions: tests of a metacognitive model in a clinical population and comparisons with non-patients. *British Journal of Clinical Psychology, 50*(3), 223-233. https://doi.org/10.1348/014466510X511141	
Persecutory Ideation Questionnaire	McKay, R., Langdon, R., & Coltheart, M. (2006). The Persecutory Ideation Questionnaire. *Journal of Nervous and Mental Disease, 194*, 628-631. https://doi.org/10.1097/01.nmd.0000231441.48007.a5	
Green et al Paranoid Thoughts Scales	Green, C.E., Freeman, D., Kuipers, E., Bebbington, P., Fowler, D., Dunn, G., & Garety, P.A. (2008). Measuring ideas of persecution and social reference: the Green et al. Paranoid Thought Scales (GPTS). *Psychological Medicine, 38*(1), 101-11. https://doi.org/10.1017/S0033291707001638	
Reactions to Paranoid Thoughts Scale	Lincoln, T.M., Reumann, R., & Moritz, S. (2010). Is there a functional way of responding to paranoid intrusions? Development of the Reactions to Paranoid Thoughts Scale. *Cognitive Neuropsychiatry, 15*(4), 377-96. https://doi.org/10.1080/13546800903378211.	
Cardiff Beliefs Questionnaire	Pechey, R. & Halligan, P. (2011). The prevalence of delusion-like beliefs relative to sociocultural beliefs in the general population. *Psychopathology, 44*(2), 106-15. https://doi.org/10.1159/000319788.	
Delusions-Symptoms-States Inventory	Bedford, A., & Deary, I. J. (1999). The Delusions-Symptoms-States Inventory (DSSI): Construction, applications and structural analyses. *Personality and Individual Differences, 26*(3), 397-424.	Includes other symptoms; not specific for delusions
Willingness and Acceptance of Delusions Scale	Martins, M.J., Carvalho, C., Castilho, P., Pereira, A.T., Vagos, P., Carvalho, D., Bajouco, M., Madeira, N., Nogueira, V., & Macedo, A. (2016). Assessing Psychological Flexibility in Psychosis: Development and initial validation of the Willingness and Acceptance of Delusions Scale. Manuscript submitted for publication.	Non-published. Submitted for publication. All other criteria are met and preliminary psychometric data is available from Martins et al (2015).

Discussion

Self-report measures for delusions have been shown to be not only clinically useful but also reliable (Lincoln et al., 2010). The present study sought to identify and review clinically significant and psychometrically studied instruments for assessing delusional activity in clinical population. Four self-report measures met the inclusion criteria and were analysed. All four instruments considered the delusional activity as a multidimensional phenomenon and try to assess one (conviction in the CDBS) or more (the others) dimensions and characteristics of delusions. The perspective of considering delusions as a multidimensional construct has been advocated by several authors (e.g., Garety & Hemsley, 1997) and assessment of positive symptoms has gradually included different aspects and dimensions of delusional activity (Steel et al., 2007). The assessment of dimensions such as distress, conviction or influence on behaviour is particularly useful in evaluating efficacy of psychosocial interventions for psychosis, since one of the aims of these interventions is promoting well-being, minimal impact of symptoms and functioning additionally to symptom reduction and relapse prevention (Wykes et al., 2008).

Within the scales measuring more than one dimension of delusions (CDRS, BRS and PDI) the conviction people have regarding the delusion is always assessed and the CBDS assesses conviction thoroughly in its different components. The delusion conviction seems to be an important dimension to assess and has been an intervention target in psychological therapies for psychosis, with lower levels of conviction being found as a predictor of outcome (overall symptom reduction) for brief CBT in patients with delusions (Brabban, Tai, & Turkington, 2009). Studies delivering Acceptance and Commitment Therapy for psychosis have also found an important role of 'symptom believability' (conviction in psychotic symptoms such as delusions and hallucinations), namely as a mediator of the effect of the treatment condition on the reduction of rehospitalisation at the four-month follow-up (Bach, Gaudiano, Hayes, & Herbert, 2013).

Other aspect the three multidimensional scales have in common is the inclusion of items assessing emotional and behavioural responses to the delusional activity, such as distress, preoccupation, worry, influence on behaviour and cognition, unhappiness; coping responses are also assessed although they seem not to be a major aim (CDRS: reassurance seeking). The coping skills for dealing with symptoms, specifically delusions, seem to be an area of important investment in terms of assessment measures. Psychosocial interventions for psychosis usually focus on coping strategies and this can be an important

outcome in assessing efficacy of such interventions. There are clinician-rated instruments for assessing coping strategies in regard to delusions, such as the Heidelberg Coping Scales for Delusions (Rückl et al., 2012) that assesses the five-factor model of coping (resource-oriented, medical care, distraction, cognitive coping and depressive coping). Specific self-report measures for coping with delusions, such as the Reactions to Paranoid Thoughts Scale (specifically for paranoia), may be useful in clinical and research settings. To our knowledge, it seems that literature lacks a general delusion scale (without focusing on specific content) assessing coping with delusional thoughts.

The CDRS and BRS also assess characteristics inherent in delusions, such as characteristics concerning content (e.g., absurdity, use of imagination), belief formation process (e.g., speed of formation) and evidence-related content (e.g., truthfulness, acceptability to others, perceptual evidence). Only one instrument – PDI – offers the possibility to assess different delusion types (regarding delusion content) in a present/absence format prior to characteristics evaluation, which can have advantages in differentiating the characteristics of different delusions in different clinical presentations. In patients presenting more than one delusion, this scale can be useful in the assessment of delusional content.

Psychometrically we can observe major dissimilarities; while for the majority of instruments only one psychometric study was found, for the PDI several studies in different populations (clinical and non-clinical) were available. The PDI is also the only instrument with psychometric data for a short version (21-item); nevertheless, the other three instruments are very brief and practical and therefore a shorter version was unnecessary (nine to twelve items). Brief instruments have several advantages in research and clinical practice, particularly in people with psychotic disorders that may have cognitive deficits and/or attentional difficulties and for whom amotivation, avolition and other negative symptoms may be a problem.

Although there are several different studies analysing the PDI psychometric characteristics we can observe a great variety of results: exploratory factor analyses vary from ten to eleven components in the 40-item version; and for the 21-item version were found unifactorial solutions (two studies) and solutions with three, seven (two studies), ten and fourteen components. It is also important to highlight that the two studies that find a 7-component structure did not found the same item combination and did not standardize the naming of the variables. Additionally, the clinical populations were mostly used for reliability and criterion validity/diagnostic accuracy and no factor structure studies were

performed for the responses of participants with psychosis alone (one study used a mixed sample). PDI reliability varied between .67 and .87 in terms of temporal stability and between .75 and .92 concerning internal consistency which indicate adequate properties. Significant associations were found with measures of schizotypy, aberrant beliefs, delusions, psychosis proneness, anxiety, negative affect, and psychiatric symptoms; and scores in clinical populations were found to be higher than in controls when compared. No reliability assessment is presented for the CDRS, this being a major limitation of the study. Criterion validity was studied through cluster analysis but correlations with other measures of delusions are also absent. Authors report associations with self-reported depressive symptoms and clinical depression (clinician-rated). An exploratory factor analysis found four components. The study of the BRS is mostly a group comparison study differentiating delusions of patients with schizophrenia, overvalued beliefs (anorexia patients) and normal religious beliefs (controls). Adequate reliability is stated but no values are reported. No factorial structure study was performed. The CDBS study is robust: authors report temporal stability across four assessment times (ranging from .70 to .83 across a 6-week period) and good internal consistency. Convergent and discriminant validity are reported. Significant, moderate to strong, associations were found with other self-report items of delusion conviction and with a measure of thought disorder. Exploratory factor analysis suggested a unidimensional structure.

Although not approached in the present review, and similarly to other symptoms of psychosis, such as voices (Shawyer et al., 2012), recent research has been focusing in assessing not only frequency, impact or conviction of delusions but also contextual aspects such as acceptance-based variables. The Willingness and Acceptance for Delusions Scale (WADS) is a recovery-inspired and contextual CBT-based instrument for assessing the relationship people have with their delusional thoughts. More than assessing delusions' characteristics, the WADS focuses on participants' ability (or inability) to perceive delusions as thoughts (not necessarily linked to reality), to be aware of thoughts emerging without reaction or judgment and to attain goals and pursue valued life directions independent of delusions. Preliminary psychometric properties have shown the instrument's validity and reliability (Martins et al., 2015). Nevertheless, this is the only scale to our knowledge focusing on relationship with delusions, an important concept in recent developments in interventions for psychosis (e.g., Acceptance and Commitment Therapy, Compassion-focused Therapy, Mindfulness-based interventions).

Although the present review is a valid contribution to the literature, some limitations need to be taken into account. This is a narrative review that followed rigorous search and selection procedures. Nevertheless, systematic review methods were not used. Thus, there is a possibility that relevant instruments, published in less popular journals and databases, might not have been found. Also, meta-analytic procedures could be useful particularly in instruments with more than one psychometric study (PDI). Concerning the broader application in clinical practice and research settings, the main aim of this study was to review instruments that assess delusions regardless of the specific-types. Future reviews focusing in specific types might be useful particularly considering the proliferation of instruments for paranoia and persecutory delusions.

Conclusion

The present study provides a narrative and critical review of self-report instruments to assess delusions. Instruments evaluating different aspects and characteristics of delusions were presented and gaps in the literature were found. Overall the identified instruments present adequate psychometric properties and seem useful in assessing delusions in clinical and non-clinical populations. Improvement in future studies can be achieved both in refining the psychometric studies of the existing instruments (mainly confirmatory factor studies but also more sophisticated reliability and diagnostic accuracy analyses) and in developing new instruments focused on coping and relationship people establish with their delusions.

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Contextual cognitive-behavioural therapies across the psychosis continuum:

A review of evidence for schizophrenia, schizoaffective and bipolar disorders

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Contextual cognitive-behavioural therapies across the psychosis continuum:
A review of evidence for schizophrenia, schizoaffective and bipolar disorders

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Abstract

Considering several etiologic, therapeutic, and comorbidity-related factors, a psychosis
continuum model has been proposed for the understanding and treatment of psychotic
disorders. Within the new emerging treatment approaches, Contextual Cognitive-
Behavioural Therapies (CCBT) seem to hold promise for the psychosis continuum.
However, considering their novelty for this specific population, the quality of efficacy
evidence remains unclear. To examine, critically analyse, and summarize the results from
studies based on therapeutic models within the CCBT approach (Mindfulness and
Acceptance-based interventions, Compassion-Focused Therapy, Dialectical Behaviour
Therapy, and Metacognitive Therapy) for patients with a diagnosis within the psychosis
continuum (schizophrenia, schizoaffective disorder, bipolar disorder). Three leading
electronic databases (MEDLINE/PUBMED; PsycINFO; Cochrane Library), a grey
literature database (OpenGrey), and registered clinical trials (ClinicalTrials.Gov) were
searched using combinations of key terms regarding the CCBT models and the diagnosis
considered. Reference lists of the relevant studies and reviews were searched. Only
Randomized Controlled Trials (RCTs) were included. The "Cochrane Risk of Bias
Assessment Tool" was used for quality assessment. A total of 17 articles were included.
This review was based on a majority of unclear or low risk of bias studies. Benefits
regarding clinical variables such as psychotic symptoms, anxiety and depression,
functioning or quality of life were found. Overall the studies supported some benefits of
CCBT approaches for the psychosis continuum. The conceptual perspective on treatment
has changed, nevertheless the outcomes assessed are still symptom-focused and there is
still need for improvement. Methodological considerations and future directions are
presented.

Introduction

The current diagnostic systems, such as the DSM-5 (American Psychiatric Association, 2013), are mainly categorical (although some recent attempts have been made in order to consider some more dimensional variables – see Narrow & Kuhl, 2011). Regarding psychotic disorders and major affective disorders, three main diagnostic categories emerge in the literature and are corroborated by DSM-5 as distinctive and independent entities: schizophrenia, schizoaffective disorder, and bipolar disorder.

Notwithstanding the potential utility of categorical diagnosis, some studies have highlighted the need for a new model of understanding psychotic disorders: a psychosis continuum model or a schizophrenia-bipolar axis (Craddock, O'Donovan, & Owen, 2009; Crow, 1990; Pearlson, 2015). There are two possible, valid, and empirically studied interpretations to the term "psychosis continuum." The first one refers to the idea that psychotic symptoms (e.g., delusions, hallucinations) exist in a continuum ranging from normality to pathology (Carvalho, Pinto-Gouveia, Peixoto, & Motta, 2014; Johns & Van Os, 2001; Shevlin, McElroy, Bentall, Reininghaus, & Murphy, 2016; Van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009). The second perspective, the one used in this review and also referred to as the "schizophrenia-bipolar axis," reflects the concerns about the dichotomous model of psychosis and tries to move toward an approach that represents more accurately the wide range of phenotypic variations and takes into account their biological foundations. This continuum would range between the "prototype bipolar disorder" and the "prototype schizophrenia" (Craddock et al., 2009). Results of several studies have shown: (a) a partial etiological overlap between schizophrenia and bipolar disorder with shared genes (Craddock, O'Donovan, & Owen, 2005; Craddock et al., 2009; Murray et al., 2004; Purcell et al., 2009); (b) neuropharmacological mechanisms in common, such as elevations in dopamine receptor (Pearlson et al., 1995) and good response to dopamine blockade in both disorders (for a review, see Murray et al., 2004); (c) frequent comorbidity of psychotic and mood symptoms (e.g., Buckley, Miller, Lehrer, & Castle, 2009). This continuum would include cases with both psychotic and affective features (schizoaffective or mixed disorders) that often are treated as diagnosis of exclusion and disregarded from research (Cheniaux et al., 2008; Craddock et al., 2009).

There has been a longstanding tradition of looking at diseases in the psychosis continuum as exclusively biological conditions requiring only symptomatic treatment based on the medical model. Given this traditional view, research on psychosocial

treatments in this area has been neglected for many years compared to research on pharmacological interventions. Nevertheless, authors have stressed the benefits of psychological interventions in coping with psychotic symptoms or loss of functions, reducing the burden of the disease and enhancing patients' lives (Klosterkötter, 2014; Sim, 2006). Results show that better results are achieved when combination treatment (pharmacotherapy plus psychosocial interventions) is used, compared with routine care alone (Gaudiano, 2006; Miklowitz, 2008).

Data suggests that psychosocial interventions appear beneficial for patients with a diagnosis within the psychosis continuum in a wide range of areas, namely regarding positive symptoms, functioning, relapse rates, affective symptoms, anxiety symptoms, social and vocational functioning (e.g., Huxley, Rendall, & Sederer, 2000; Miziou et al., 2015; Richardson, 2010; Wykes, Steel, Everitt, & Tarrier, 2008). Therefore, international clinical guidelines recommend the offer of several psychosocial interventions such as Cognitive-Behavioural Therapy (CBT) both for people with persisting psychotic symptoms and people in remission, family interventions (Kreyenbuhl, Buchanan, Dickerson, & Dixon, 2009; NICE, 2014), and additionally arts therapies (NICE, 2014), assertive community treatment, supported employment, skills training, token economy interventions (Kreyenbuhl et al., 2009).

Regarding psychotherapy in particular, for the psychosis continuum, CBT was considered superior to other "talk therapies" in the long term regarding emotional regulation and depressive symptoms (Jones, Hacker, Cormac, Meaden, & Irving, 2012) and it is the one recommended in international guidelines (above). Nevertheless, despite the considerable body of evidence concerning CBT efficacy for the psychosis continuum (e.g., Wykes et al., 2008; Thase, Kingdon, & Turnington, 2014), CBT limitations have been identified, particularly regarding high dropout rates (Startup, Jackson, Evans, & Bendix, 2005), relapse prevention (Garety et al., 2008; Lam, Hayward, Watkins, Wright, & Sham, 2005), and difficulties in maintaining the focus of treatment on the positive symptoms after remission (Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010). Additionally the therapeutic effect of CBT in psychotic symptoms has been considered in the "small range" (Jauhar et al., 2014) and few differences were found showing the superiority of CBT when comparing to other types of psychotherapy (Jones et al., 2012). Specifically, for bipolar disorder, CBT trial results have been characterized as "mixed" and suggest the need for potential schematic changes in therapeutic intervention (Perich, Manicavasagar, Mitchell, Ball, & Hadzi-Pavlovic, 2013).

It has been advocated, for the psychosis continuum, a recovery-oriented approach to psychotherapy which is focused on self-experience and promotes more flexible courses of action in order to pursue a meaningful and self-determined life (Lysaker, Glynn, Wilkniss, & Silverstein, 2010). Within this approach several integrative models have emerged (for a review, see Hamm, Hasson-Ohayon, Kukla, & Lysaker, 2013), including the contextual cognitive-behavioural therapies (CCBT).

Contextual Cognitive-Behavioural Therapies

The "third wave" (Hayes, 2004) or "contextual" cognitive-behavioural therapies (CCBT; Hayes, Villatte, Levin, & Hildebrandt, 2011) includes therapeutic approaches encompassing a series of methods and processes aiming at helping clients to be "open, aware, and active" and developing a wider repertoire of functional and adaptive behavioural responses. Since the term "contextual" CBT will be used throughout the text it is useful to conceptualize this construct. The term "contextual" derives from the functional contextualism approach which emphasizes the focus on the event as a whole, with importance given to the context in which it occurs, with a pragmatic view of the truth – in other words, the "ongoing act in context" (Hayes, 2004, p. 646). In this perspective, the context refers to the relationship people establish with their private events, the awareness and willingness people have of their occurrence, and the function the events have when they arise. Authors state that an empirical evidence of a contextual effect is, for example, when as a result from therapeutic methods, the same emotional or cognitive content functions in a different way (Hayes et al., 2011). The contextual approach to CBT highlights the function or context of psychological events (e.g., thoughts, memories, emotions) over their frequency, content, or veracity, thus moving from a simple eliminative approach to one more interested in the psychological context where the internal experiences occur and the ways people deal with them. The goal is to increase awareness and the ability to face internal experience in an accepting, non-judgmental way with curiosity and without attempts to alter it; becoming mindfully aware of the present moment; and engage in actions congruent to valued-living directions.

As stated above, CCBT approaches aim to help people develop a wider repertoire of functional and adaptive behavioural responses to internal experiences. Although this is true for other psychotherapeutic approaches (e.g., CBT), CCBT's didactic perspective places the emphasis on flexibility, acceptance, embracing all experiences (different from the symptom-reduction/distress alleviation focus valued in other psychotherapeutic

approaches) fostering quality of life and valued living. An important emphasis is placed on the body in which the "here and now" is experienced through experiential exercises (e.g., mindfulness, acceptance, compassion) and language-based strategies (much used in other psychotherapeutic approaches) although still used are de-emphasized (Hayes, Strosahl, Bunting, Twohig, & Wilson, 2004). There are several therapeutic approaches that fall within the scope of "Contextual Cognitive-Behavioural Therapies."

Mindfulness

Mindfulness has been defined as "paying attention in a particular way, on purpose, in the present moment, and non-judgmentally" (Kabat-Zinn, 1994, p. 2). Mindfulness-based interventions focus on several practical exercises (including sitting meditation among others) aiming at the development of a decentered relationship with inner experience as thoughts and feelings (Segal, Teasdale, Williams, & Gemar, 2002). The two more well-known therapeutic applications of Mindfulness are Mindfulness-based Stress Reduction (MBSR; Kabat-Zinn, 1990) and Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, & Teasdale, 2002). Chadwick, Newman-Taylor, and Abba (2005) suggest a specific rationale for applying mindfulness to psychotic symptoms, in which two loops are possible when reacting to an unpleasant psychotic sensation: (a) the distressing reaction leading to being "lost in reaction' through processes such as experiential avoidance, judgment, rumination, and confrontation; and (b) the mindful response that leads to a "clear awareness" circle promoted by acceptance, non-judgment, and an attitude of letting go. Considering reported unintended effects of meditation on psychosis (for a review, see Shonin, Van Gordon, & Griffiths, 2014) several adaptations have been proposed in applying mindfulness-based interventions for people with psychosis: (a) shorter sitting meditations (10 min) with preference given to mindfulness of the breath and bringing awareness to the body (3-min body scan) as grounding practices; (b) mindfulness taught as "choiceless attention" rather than concentration meditation; (c) briefer moments of silence with comments, instructions, and reminders being frequently given; (d) homework with audio support was encouraged but not required; (e) shorter structure of therapy (6 one and a half hour sessions with a 15-min break); (f) smaller groups than usual (six participants); (g) opportunity to manage distressing experiences therapeutically and focus on the therapeutic process and relationship.

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999) is based on a rationale that considers language the essential aspect of human suffering in general, and particularly of many psychological disorders (Hayes et al., 2004). From this point of view, psychopathology is the result of the limiting effects of language in two main areas: cognitive fusion (the process by which inner experiences are interpreted as an accurate description of reality) and experiential avoidance (efforts to avoid, suppress, or modify inner experience), both leading to psychological inflexibility (Hayes et al., 2004). ACT's aim is to increase psychological flexibility levels, emphasizing the ability to promote or maintain behaviours that are congruent with the individual's goals and values through processes such as acceptance; cognitive defusion; being present; self as context; focus on values and committed action (Hayes et al., 2004). In its application to psychosis, the ACT model conceptualizes psychotic symptoms as both possible targets of avoidance (e.g., hallucinations) and specific strategies of avoidance of negative and aversive private experiences, such as negative self-concept (e.g., delusions; Bach & Hayes, 2002). An important focus is placed on normalization of psychotic experiences, and willingness and defusion are practiced with the aim to change the relationship with symptoms. Working with patients with psychosis the authors have recommended to combine small parts of different ACT components in each section to make the link between them more clear (Pankey & Hayes, 2002).

Compassion-Focused Therapy

Compassion-Focused Therapy (CFT; Gilbert & Procter, 2006) derives from an evolutionary approach linked to neuroscience of emotion and the biopsychosocial model. Specifically directed to chronic and complex mental health problems associated with shame and self-criticism, CFT aims at developing skills for activating the soothing system in order to regulate threat-based affect, bring a more helpful balance between the different emotion regulation systems, and promote a compassionate attitude toward the self and others. Gumley et al. (2010) proposed a compassion-focused formulation of the experience of psychosis and recovery, in which vulnerability and resilience are explained in a multidimensional way (e.g., early experiences, life events, and experiences – internal and external threats, safety strategies and their unintended consequences). The therapeutic focus is on reducing shame, activating positive affect, and promoting adaptive coping, which can be particularly important for people with psychosis (Gumley et al., 2010), which

usually have problematic threat processing/regulation and difficulties regarding affiliative emotions/behaviours (Braehler et al., 2012). CFT for psychosis starts at reformulating blocks to recovery using the CFT model, building motivation to learn compassionate skills (mindfulness, appreciation, imagery, reframing, among others). These skills are then trained to be used in dealing with threats and difficulties, such as stigma, social anxiety, self-attacking, hostile voices, poor motivation, and so on (Braehler et al., 2012).

Dialectical Behaviour Therapy

Dialectical Behaviour Therapy (DBT; Linehan, 1993), originally developed for borderline personality disorder, was designed to help patients with chronic difficulties, including suicidal ideation, change noneffective patterns of behaviour integrating the concepts of acceptance and change. DBT combines standard cognitive-behavioural techniques for emotion regulation and reality testing with concepts of distress tolerance, acceptance, and mindful awareness. Reduction in suicidal behaviours and behavioural deregulation (self-harm), hospitalization, anger; as well as improvement in social adjustment and treatment compliance have been found (Linehan, Tutek, Heard, & Armstrong, 1994).

Metacognitive Therapy

Although several types of Metacognitive Therapy (MCT) exist and have been applied to psychosis with promising results (for reviews, see Moritz et al., 2014; Moritz, Woodward, & Balzan, 2016; Schneider & Andreou, 2014), in the present review we will follow the conceptualization of Hayes et al. (2011) that specifically points out the Wells' Metacognitive approach as part of the "Third Wave" of cognitive-behavioural therapies. Metacognitive Therapy (MCT; Wells, 2000) was developed based on the metacognitive model for emotional disorders and consists of promoting a different relationship to thoughts, beliefs, and metacognitive beliefs with the final aim being countering the cognitive attentional syndrome (CAS) – a specific way of thinking that would be responsible for emotional suffering and ultimately the development and maintenance of psychiatric disorders. Specific strategies of this approach include "Attention Training Technique" (Wells, 1990) and a specific form of mindfulness called "Detached Mindfulness."

Within the psychosis continuum, CCBT may have the potential to be particularly suited for several reasons: (a) promoting awareness and acceptance of experiences as

separated from self and momentary can alleviate the distress associated with psychotic and mood symptoms and the self-stigma associated with chronic mental illness; (b) reducing feelings of shame and self-criticism and therefore activating the positive affect system and promoting valued living instead of focusing on symptom reduction/elimination through challenging thoughts can be more suited for this population; (c) focusing on values and valued-living directions can be effective in engaging patients in therapy; (d) helping people regulate their emotions is particularly needed in a population in which emotional experience plays a key role in the illness aetiology, development, and course (relapse prevention). Furthermore, the absence of questioning regarding the specific content or rationality of thoughts might bring advantages in therapy adherence.

Prior Related Reviews

In 2013, a meta-analysis conducted by Khoury, Lecomte, Gaudiano, and Paquin, presented results emphasizing the moderate efficacy (pre-post analyses) of mindfulness-based interventions for psychosis, with therapeutic gains being maintained at follow-up. However, when compared with a control group, a smaller effect size was found. Results were found stronger for negative symptoms. Shonin et al. (2014) presented a systematic review specifically on mindfulness meditation for psychosis (excluding therapeutic approaches using mindfulness as adjunct as for instance, ACT) and concluded that mindfulness meditation appears to have a beneficial role in the treatment of psychosis when specific adaptations are made. Nevertheless, the review stated that the results from available studies are not yet sufficient to demonstrate efficacy of mindfulness-based interventions for psychosis. Limitations such as small sample sizes, passive control conditions, no control of confounding variables among others limit the generalizability of results. Davis and Kurzban (2012) concluded that there is preliminary evidence to support the notion that mindfulness-based treatment provides benefits for patients namely regarding symptom-associated distress, self-efficacy, and hospitalizations.

In an area of recent scientific interest with a growing body of evidence on efficacy, periodic reviews are in order, since advances are made rapidly and new findings are always emerging. To our knowledge there are no comprehensive reviews of CCBT considering the psychosis continuum. Therefore, the purpose of this systematic literature review is to summarize the empirical results found for CCBT for the psychosis continuum (Schizophrenia, Schizoaffective and Bipolar disorders) and to provide a comprehensive

and critical overview of results from high-quality clinical trials (Randomized Controlled Trials) developed in this area.

Method

The methods of the present review were based on the recommended by the Cochrane Collaboration (Higgins & Green, 2011) and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Liberati et al., 2009).

Search Strategy

In order to identify relevant studies, leading electronic data-bases were searched – MEDLINE/PUBMED, PsycINFO, and Cochrane Library ("Cochrane Central Register of Controlled Trials"). The Cochrane Collaboration states that efforts should be made to identify "literature that is not formally published in sources such as books or journal articles" – grey literature (Higgins & Green, 2011). Therefore, OpenGrey database was additionally searched and during the identification and selection phases all types of records were considered (including dissertation abstracts, proceedings abstracts, and other). Registered clinical trials (ClinicalTrials.gov) with results were also considered.

We combined terms regarding the targeted population with terms concerning the CCBT interventions. The search strategy, which can be consulted in Appendix, was first developed for MEDLINE/PUBMED and then adapted for use in the other databases. In order to maximize the search benefits and due to organization of information, separate searches were made for the different types of CCBT. Exploded search was used when considered pertinent and there were no restrictions concerning language. References from relevant articles, prior reviews, and meta-analyses were also analysed (snowball effect). In addition, experts in the field were consulted. All pertinent studies from the first available date until July 2015 were included.

Eligibility Criteria

A PICOS approach was used for defining criteria for inclusion and exclusion of studies and can be consulted on Table 1. In terms of methodology, guidelines have recommended that trials should follow a Randomized Controlled Trial design and this methodology has been reported as the ideal study design to evaluate the effectiveness of healthcare interventions (Navaneethan, Palmer, Smith, Johnson, & Strippoli, 2010).

Considering Randomized Controlled Trials (RCTs) as the strongest evidence of clinical efficacy specifically developed to minimize bias (GRADE Working Group, 2004) we chose to only include studies with this design in our review. Our review included literature regarding either individual therapy or group-format interventions, on the CCBT in analysis (mindfulness and acceptance-based interventions, compassion-focused therapy, dialectical behaviour therapy, and metacognitive therapy) with adult patients with a diagnosis within the psychosis continuum (Schizophrenia, Schizoaffective and Bipolar disorders).

Study Selection and Quality Assessment

The records were independently reviewed for eligibility by two authors (MJM and PC): the screening phase was based on title and abstract examination; and the eligibility phase was performed through full text review. In each phase, any studies not meeting the inclusion criteria previously stated in the PICOS were excluded. Disagreement between reviewers was resolved by team discussion and consensus. Quality assessment was performed by the two authors responsible for the identification, screening, and eligibility phases using the highly recommended "Cochrane Collaboration's Risk of Bias Tool" (Higgins & Green, 2011). Quality was assessed based on published and/or available information on the selected studies. The Lassen (2011) study was not assessed for quality due to lack of information available about study design.

Results

A total of 519 potentially relevant articles were identified, retrieved, and screened for potential inclusion. Figure 1 can be consulted for a flow of information through the different phases. After reviewing 68 full text articles for eligibility, a total of 17 studies were included in the final stage of the review and a summary of the studies' characteristics and main outcomes is presented in Table 2. Four studies used previous studies' samples to analyse long-term effects of intervention ($N = 2$) and mechanisms of change ($N = 2$).
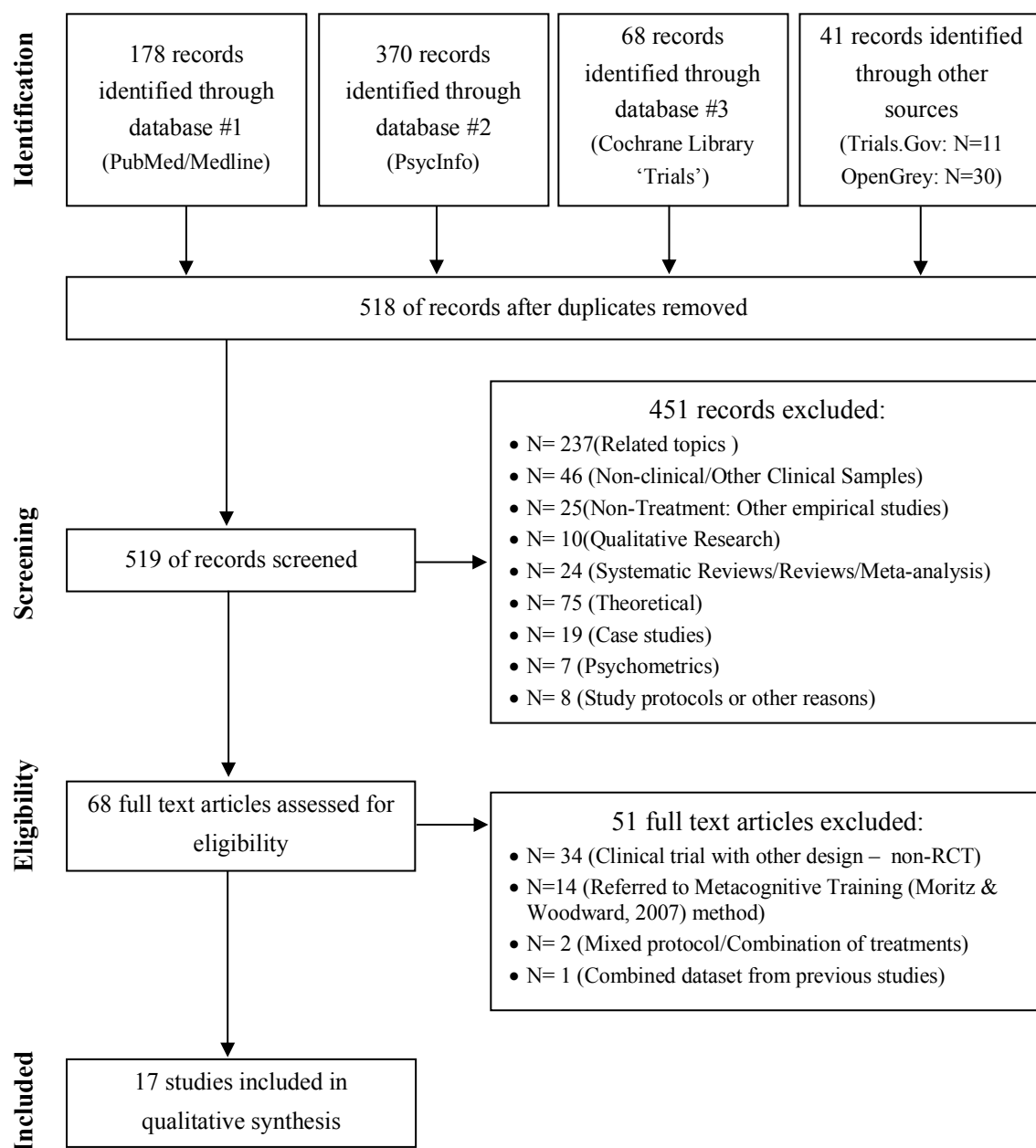
Figure 1. Adapted flow of information through the different phases of a systematic review according to PRISMA (2009).

Table 1

PICOS criteria for inclusion and exclusion of studies

Parameter -PICOS	Inclusion Criteria	Exclusion Criteria
Patients/Problem	1. Age > 18 years old	1. Age < 18 years old
	2. Diagnosis of a psychosis continuum disorder (schizophrenia, schizoaffective, bipolar disorder)	2. Studies with mixed samples outside the psychosis continuum; studies referring to "severe mental illness", "acute patients" without specifying the participants' diagnoses.
Intervention	One of the following CCBT:	1. Studies with mixed protocols or protocols that do not identify the approach
	1.Mindfulness-based therapies	
	3.Acceptance-based therapies	2. Studies with other treatment approaches
	4. Compassion Focused Therapy	
	5.Dialectical Behaviour Therapy	
	6.Metacognitive Therapy	
Comparator	Any kind of control group (active or passive)	Studies without control group
Outcomes	Any outcomes related to:	Qualitative outcomes
	1. Psychotic symptoms	
	2. Mood symptoms	
	3. Related symptoms (e.g. anxiety)	
	4. Disease management (e.g. coping, functioning, hospitalizations)	
	5. Adherence	
	6. Quality of life	
Study Design	Randomized controlled trials	Non-randomized controlled trials
		Retrospective, prospective, or concurrent cohort studies
		Cross sectional studies
		Case reports

Note: PICOS = Patients, Intervention, Comparator, Outcomes, Study design

Sample characteristics

The combined sample of all studies included a total of 622 participants in randomization procedures: 297 were characterized as in the "psychosis spectrum" or "schizophrenia spectrum" in the psychosis spectrum; 189 with bipolar disorder diagnosis (one study included unipolar diagnosis); one study included 96 subjects with the specific diagnosis of schizophrenia; and one study covered all diagnosis in the "psychosis continuum" ($N = 40$). In studies with psychosis samples the majority of participants were male and the opposite was found in bipolar disorder samples.

Overview of the included studies

The studies included in this review were all treatment studies, randomized and controlled, assessing efficacy and/or feasibility of CCBT for disorders in the psychosis continuum (schizophrenia, schizoaffective disorder, and/or bipolar disorder). In terms of localization of studies, the majority was European (five studies), four were in the United States of America and four studies in other countries.

Therapeutic approach and setting (Group Vs. Individual)

In terms of therapeutic approach, and excluding studies using previous studies' samples, six RCTs were found for Mindfulness-based interventions (MBCT, Mindfulness-based psychoeducation, and Mindfulness Intervention for Rehabilitation and Recovery in Schizophrenia), five studies with Acceptance-based therapies (ACT, Acceptance-based CBT), one study with compassion-focused therapy, one referring to DBT, and no RCT studies were found for MCT. The most common therapy format found was group format (10 studies). Individual interventions were only found for ACT. Session number varied between 4 (min) and 16 (max).

Group comparison

In terms of group comparison, the most usual control group found was Treatment as Usual (TAU) and waitlist controls ($N = 10$). Three studies included active control groups: one study included an intensive support control group; other study included enhanced treatment as usual; and only one study reported two clinical control groups including an active control condition (Befriending) and waitlist controls. Concerning comparison with control group(s), three studies (mindfulness and acceptance-based) did not find differences after intervention with the control group(s). One study reported that these differences were

only in process measures (mindfulness). Regarding the studies with active control groups the one using "Befriending" did not find significant differences between intervention groups (differences only with the waiting list control group). Six studies did not report effect size analysis for the between-group comparisons.

Assessment moments

Regarding post-intervention assessment, the most common design was pre and post intervention assessments (seven studies). Only mindfulness and acceptance-based interventions studied the long-term effects of the intervention. Three studies reported one follow-up assessment (excluding posttreatment) and other three studies included two or more follow-up assessments: one with 4 month and 12-month moments (ACT); other with assessments at 3, 6, and 9 months (Mindfulness); and in the other patients were assessed at 3, 9, 12, and 24 months (Mindfulness). No studies reported follow-up assessments longer than two years. All studies reporting follow-up assessments emphasized that therapy results were maintained or enhanced at follow-up.

Outcome and process measures

In terms of outcome measures, a wide range of measures were found, the main outcomes with benefits from CCBT reported were related to psychotic symptoms (four studies), hospitalization rates (two studies), social interference, functioning, or work performance (four studies), distress and emotion regulation (two studies), depressive symptoms and/or anxiety (six studies), insight (one study). In terms of process measures, four studies reported improvement in mindfulness skills (one study associated mindfulness with improved depressive symptoms) and one study correlated increases in compassion with improvement in depression and social marginalization. One study reported mediational analysis highlighting symptom believability – the degree of conviction the participants have in the symptom (hallucination and/or delusion) to be true/reality – as an important process in the treatment effect.

Feasibility and acceptability

In terms of feasibility and acceptability of therapy, attrition rates ranged from 8.3% to 20.83% in treatment completion. One study had no dropouts. One study (DBT) reported measures of acceptability/satisfaction other than attrition rates (e.g., interviews, self-report satisfaction ratings), with positive feedback.

Quality assessment

Quality assessment results regarding the evaluation of risk of bias in the selected studies is presented in Table 3. Overall the evidence for efficacy of CCBT for the psychosis continuum seems to be drawn from a majority of "Low" and "Unclear" risk of bias studies.

Discussion

This review aimed at summarizing and critically analysing the existing research on the efficacy of CCBT for the psychosis continuum. Following an attempt to provide evidence for CCBT approaches in psychosis through case studies and small-scale clinical trials (for a brief non-systematic review, see Martins, Castilho, Santos, & Gumley, 2016), recently we have witnessed a growing effort, in CCBT for psychosis continuum, in using rigorous methods of trial design, namely RCT. Nevertheless, more studies with this kind of rigorous methodology are in need to assess the benefits of CCBT in this population.

Overall this approach revealed to be feasible and highly acceptable for this population. Efficacy data regarding clinical outcomes, although preliminary and in need of further replication, show promising results both in terms of symptom reduction and regarding increased quality of life and relationship with symptoms. Specifically, mindfulness interventions found improvement regarding anxiety, depressive symptoms, insight, psychotic symptoms, and functioning; acceptance-based interventions found improvement in distress related to symptoms, social interference, depressive symptoms, psychotic symptoms, global functioning, quality of life, insight. Although with only one study each, CFT found improvement regarding depressive symptoms, social marginalization, and observed clinical improvement; and DBT reduced depressive symptoms, fear of emotional states, and improved control over emotional states. It is important to note that the majority of studies analysed used a group format and these results may be influenced by this setting's characteristics. Studies comparing the two settings are needed.

Table 2
Studies included in review

Reference	Country	Study population (*N*)	Type of CCBT intervention	Type of comparison group (*N*)	Nº of sessions (format)	Reported effect size (for between-groups comparisons)	Follow-up (additional to post-treatment)	Main outcomes
Bach and Hayes (2002)*	USA	Psychosis Spectrum: inpatients with positive psychotic symptoms (80)	Acceptance and Commitment Therapy (ACT) + Treatment as Usual (TAU)	TAU (35)	4 (one-to-one)	No	4 months	Experimental group with higher symptom reporting; lower symptom believability; lower rehospitalization rates over a 4-month follow-up period.
Bach, Hayes, and Gallop (2012)*						No	12 months	ACT was associated with reduced rehospitalization at 1-year post discharge after controlling for confounding variables.
Gaudiano and Herbert (2006)*	USA	Psychosis Spectrum: inpatients (40)	Acceptance and Commitment Therapy (ACT) + Enhanced Treatment as Usual (ETAU)	ETAU (21)	4 (one-to-one)	Yes – BPRS total (*d* = 0.60)	4 months	Experimental group with significantly lower distress related to hallucinations; less social interference; improved affect. Medium effect size gains on the BPRS and absolute risk reduction by post-treatment of 43.3% (experimental group).
Gaudiano, Herbert and Hayes (2010)*								Believability of hallucinations at posttreatment mediated the effect of treatment condition on hallucination-related distress
Williams, et al. (2008)	UK	Unipolar and Bipolar Disorder with suicidal ideation or behaviour (68)	Mindfulness based Cognitive Therapy (MBCT) + TAU	Waitlist (35)	8 (group)	No	None	Improved outcomes in terms of anxiety and depressive symptoms (significant two-way time × condition interaction).
Chadwick, Hughes, Russell, Russell, and Dagnan (2009)	UK	Psychosis spectrum with distressing voices (21)	Mindfulness + metacognitive insight + TAU	Waitlist (11)	10 (group)	No	None	No significant differences between intervention and control group; improvement in clinical functioning and mindfulness of distressing thoughts and images
Lassen (2011)	USA	Schizophrenia Spectrum (28)	ACT + TAU	TAU (14)	4 (group)	No	None	No statistically significant differences in anxiety between groups

Reference	Country	Study population (N)	Type of CCBT intervention	Type of comparison group (N)	Nº of sessions (format)	Reported effect size (for between-groups comparisons)	Follow-up (additional to post-treatment)	Main outcomes
White, et al. (2011)	UK	Psychosis Spectrum (27)	ACT + TAU	TAU (13)	10 (one-to-one)	Yes – Measures of psychotic symptoms, anxiety, depression and mindfulness and acceptance skills ($d = 0.03$-0.50)	None	Improvement in depressive symptoms (associated with mindfulness); significantly greater increase in mindfulness skills and reduction in negative symptoms; fewer crisis contacts (experimental group)
Langer, Cangas, Salcedo, and Fuentes (2012)	Spain	Psychosis spectrum (23)	MBCT + TAU	Waitlist (11)	8 (group)	Yes – Measures of mindfulness, acceptance and clinical impression ($d = 0.01$-1.31)	None	Experimental group with significantly higher results – large effect size – in responding mindfully (no other significant differences).
Shawyer et al. (2012)	Australia	SZ spectrum with command hallucinations (44)	Acceptance-based CBT + TAU	Befriending (14) / Waitlist (17)	15 (group)	Yes – Measures of psychotic symptoms, quality of life and functioning ($d = 0.01$-0.64)	6 months	None of the between groups differences reached significance. Acceptance group with significant effects on a broader range of outcomes (illness severity, global functioning and quality of life, acceptance of auditory hallucinations and insight - maintained or emerging at follow-up).
Braehler, et al. (2013)	UK	Sz spectrum + bipolar disorder with psychotic features (40)	Group Compassion Focused Therapy + TAU	TAU (18)	16 (group)	Yes – Measures of compassion and avoidance ($r = 0.29$-0.59)	None	Experimental group with greater observed clinical improvement; significant increases in compassion of large magnitude. Increases in compassion significantly associated with reductions in depression and in perceived social marginalization.
Perich, Manicavasagar, Mitchell, Ball, and Hadzi-Pavlovic (2013)*	Australia	Bipolar Disorder (95)	MBCT + TAU	TAU (47)	8 (group)	No	3, 6, 9 and 12 months	Significant differences in state anxiety between groups.

Reference	Country	Study population (*N*)	Type of CCBT intervention	Type of comparison group (*N*)	Nº of sessions (format)	Reported effect size (for between-groups comparisons)	Follow-up (additional to post-treatment)	Main outcomes
Perich, Manicavasagar, Mitchell, and Ball (2013)*							12 months	Significant correlation between greater number of days meditating and depression and anxiety scores. Differences found regarding number of meditation days.
Van Dijk, Jeffrey, and Katz (2013)	Canada	Bipolar Disorder (26)	Dialectical Behaviour Therapy-based psychoeducational group + TAU	Waitlist (12)	12 (group)	No	None	Reduced depressive symptoms at post treatment, less fear of emotional states; greater mindfulness awareness, greater control over emotional states.
Chien and Lee (2013)* Chien, and Thompson (2014)*	China	Schizophrenia (96)	Mindfulness-based Psychoeducation + TAU	TAU (48)	12 (group)	Yes – Measures of insight, symptom severity, functioning and hospitalizations (η_p^2 = .28 – overall differences)	3 and 18 months 24 months	Improvement at 18 months maintained at 2-year follow up: insight, symptom severity, functioning, and hospitalizations.
Davis et al. (2015)	USA	Schizophrenia and Schizoaffective disorder (34)	Mindfulness (Mindfulness Intervention for Rehabilitation and Recovery in Schizophrenia – MIRRORS)	Intensive Support (16)	8 (group)	Yes – Measures of work (weeks/hours), work performance, client satisfaction (d = 0.04-0.88)	None	MIRRORS group worked a significantly greater number of hours and performed significantly better at the end of the 4-month intervention.

Note. Studies marked with "*" had overlapping samples; BPRS = Brief Psychiatric Rating Scale.

Table 3.
Risk of bias assessment using the 'Cochrane risk of bias tool'

Study reference/ Risk of bias	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Bach & Hayes (2002) | Bach, Hayes, & Gallop (2012)	Unclear	Unclear	Unclear	Low	Low	Unclear	Low
Gaudiano & Herbert (2006) | Gaudiano, Herbert & Hayes (2010)	Low	High	High	High	Low	Unclear	Low
Williams, et al. (2008)	Unclear	Unclear	Low	Low	Unclear	Unclear	Low
Chadwick et al. (2009)	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
White, et al. (2011)	Low	Unclear	Low	Low	Unclear	Unclear	Low
Langer, Cangas, Salcedo, & Fuentes (2012)	Unclear	Unclear	Low	Low	Unclear	Unclear	Low
Shawyer et al. (2012)	Low	Unclear	Low	Low	Unclear	Unclear	Low
Braehler, et al. (2013)	Low	Unclear	Low	Low	Unclear	Unclear	Low
Perich, Manicavasagar, Mitchell, Ball, & Hadzi-Pavlovic (2013) | Perich, Manicavasagar, Mitchell, & Ball (2013)	Low	Low	Low	Low	Low	Unclear	Low
Van Dijk, Jeffrey, & Katz (2013)	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Chien & Lee (2013) | Chien, & Thompson (2014)	Unclear	Unclear	Unclear	Unclear	Low	Unclear	Low
Davis, Lysaker, Kristeller, Salyers, Kovach, & Woller (2015)	Unclear	Unclear	Low	Low	Unclear	Unclear	Low

In a more socioeconomic perspective, it is important to notice that one mindfulness-based intervention was tested in relation to objective work-rated outcomes (vocational rehabilitation) with promising results; two studies (mindfulness and ACT) included hospitalization as an outcome; and one ACT study found fewer crisis contacts in the experimental group.

Long-term therapy effects' studies reported maintained or enhanced effects at follow-up (up to 24 months for Mindfulness, and 12 months for ACT). The other approaches did not report follow-up assessments other than posttreatment.

Limitations of previous studies and future studies' recommendations

Methodological issues.

In terms of quality of evidence, overall this review was based on a majority of low and unclear risk of bias studies. We can observe that several studies had an "unclear risk of bias" assessment in more than one of the parameters analysed. This quality assessment was dependent on the information reported in the articles retrieved; therefore, our evaluation may have suffered from a positive bias (unclear assessment instead of a high risk of bias assessment). The parameters concerning "allocation concealment" and "reporting bias" seem to be the more problematic in this regard.

Although it is understandable to consider the characteristics of the population, a major limitation of third-generation studies for the psychosis continuum is the sample sizes found. In this review, we found that the largest sample size (for randomization) was 96 patients and the smallest study included 23 participants. Small sample sizes, although comprehensible in preliminary data, limit the generalization of findings and larger trials are in order. Additionally, the lack of randomization prior to participants' selection for inclusion (keeping updated lists of all pertinent patients for extraction of a representative sample) is another central limitation that should be taken into consideration.

Regarding attrition rates, we found higher values than expected but this result can be influenced by sample size (small samples may be causing small dropout numbers appear as high percentages). Nevertheless, dropouts in psychological therapy are very common in severe mental illness (Hamilton, Moore, Crane, & Payne, 2011). Dropouts before first session and after last session were not analysed in this review. However, high variability in conceptualization of dropout rates was found (e.g., "attended at least 1 session/4

sessions" vs. "completed the program"). This lack of standardization, very common in psychological treatment studies (e.g., Wierzbicki & Pekarik, 1993), makes the evaluation of the true acceptability of CCBT treatments difficult and future studies should be aware of this limitation.

Several measures (self-report and clinician-rated) were found to assess the efficacy and there were found different measures to assess the same construct (e.g., a construct measured by different questionnaires). Heterogeneity of outcome and process measures makes it difficult to compare studies within the same therapy and between therapeutic approaches.

A small number of studies performed mediational analysis, correlational analysis (changes in outcome associated with changes in process measures) or used an active control condition. No studies performing component analysis were found. The most common comparison group used was TAU and only three studies included active control groups. This area is in need of studies corroborating the role of third-generation variables in the therapeutic changes in order to differentiate the approach efficacy from nonspecific factors and placebo effects usually associated with psychological therapies. Active control conditions (especially with classical CBT groups) are in need to shed light on the added benefits of third-generation therapies.

A growing number of studies are including more than one follow-up assessment in their research protocols. Nevertheless, there are still RCTs with only pre-treatment and posttreatment assessments. Follow-up data is essential for evaluating the long-term effects of any intervention as well as unwanted side effects.

Some studies found are still lacking effect size analysis for the comparison between groups, which is an important limitation in psychotherapeutic efficacy studies. Effect sizes should always be reported in all differences found to enlighten the real contribution of psychotherapeutic strategies in a given clinical group.

No studies with rigorous methodology (RCT) were found for metacognitive therapy in the psychosis continuum. Nevertheless, to our knowledge recent efforts are being made to test the efficacy of MCT in this population (e.g., Morrison et al., 2014). Protocols aiming to counter the cognitive attentional syndrome through techniques such as "Detached Mindfulness" are needed both in affective and non-affective psychosis as well as in bipolar disorder to test the efficacy, feasibility, and clinical utility of this approach.

Studies including compassion-focused therapy and dialectical behaviour therapy protocols for the psychosis continuum are also particularly in need since only preliminary

data (without replication in rigorous trials) has been presented. Specifically, the trial regarding DBT was not necessarily intended to address bipolar disorder with psychotic features; therefore, studies should also address the efficacy of this approach in affective and non-affective psychosis.

Clinical and outcome-related issues

Considering the recent advances in conceptualizing treatment in the psychosis continuum and the recommendation of recovery-informed interventions to promote richer and more positive self-experience across several dimensions (Leamy, Bird, Boutillier, Williams, & Slade, 2011), it was expected that studies would select outcomes beyond symptom reduction (objective recovery).

Although we have witnessed a change in the intervention paradigm (with different techniques being used with different objectives) and some different outcomes have emerged in efficacy studies (such as symptom believability, quality of life), nevertheless the majority of studies are still focused on objective aspects of recovery such as symptom reduction (e.g., Perich, Manicavasagar, Mitchell, Ball, & Hadzi-Pavlovic, 2013; White et al., 2011), diminishing symptom impact (e.g., Bach & Hayes, 2002; Williams et al., 2008), and functioning (e.g., social, work – which can be conceptualized as a reflection of psychosocial deficits or goals, also an objective aspect of recovery according to Silverstein & Bellack, 2008; e.g., Chien & Lee, 2013; Davis et al., 2015). Although understandable in the historical context of psychosis research, this seems to be a major limitation of CCBT studies on the psychosis continuum, since the main goal of such approaches is not symptom reduction or distress elimination (Hayes et al., 2011).

From a different perspective on outcome research for the psychosis continuum, the subjective aspects of recovery would be potentially interesting outcomes for CCBT interventions. Variables, such as empowerment, self-directedness, hope, feelings of connectedness (with others/community), sense of meaning in life, optimism about the future, among others (Leamy et al., 2011), would be more suited to assess recovery from this perspective than symptom/distress reduction (for a review of instruments, see Cavelti, Kvrgic, Beck, Kossowsky, & Vauth, 2012). Positive emotions associated with affiliative processes and soothing abilities could also be a useful outcome for this population, since it has been hypothesized to be an underdeveloped soothing system and overdeveloped threat system as the basis for difficulties (Gumley et al., 2010).

Also, variables such as acceptance, mindfulness, and compassion have been reported as outcome measures, nevertheless few studies have associated changes in these variables with changes in other outcomes (e.g., depression, social interference) or used these variables to perform mediational analysis. Since these variables are more likely be considered as process variables than outcomes (and as outcomes were, in most studies, not associated to other significant variables), it is therefore still unclear to describe the processes behind therapeutic change in CCBT for the psychosis continuum. It is hypothesized that the ability to be "open, aware, and active" (Hayes et al., 2011), in other words mindfulness and psychological flexibility processes as different and alternative ways to understand and deal with suffering, would be the underlying processes behind therapeutic change. Nevertheless, further research is needed to test these hypotheses.

Review's limitations and future directions

Despite the effort to identify and screen non-published results (grey literature), in its final results this review only included published results (as a result of the rigorous eligibility criteria) which can introduce a bias in the results. Several authors alert for the problem of a positive bias in reviews toward or in favour of the testing hypothesis (e.g., Fanelli, 2010). Therefore, the results of this review must be interpreted with caution while considering this potential positive bias.

In spite of the RCT being the most recommendable design to draw conclusions about efficacy, other intervention study designs (practical studies) can bring valuable contributions in terms of effectiveness assessment, adaptability to the real settings where the intervention will be applied, and generalizability for the majority of the target population (Prince, Stewart, Tamsin, & Hotopf, 2003). Systematic reviews comparing both designs' results can be important to combine both types of results when deciding the usefulness of CCBT in the psychosis continuum. Other types of study designs (cross-sectional, longitudinal) aiming at exploring mechanisms linked to the maintenance of difficulties in this population highlight possible intervention targets. Considering the future RCT may be informed by such studies, reviews with systematized and rigorous methods are also necessary for these study designs in order to evaluate the quality of evidence in this regard.

This review aimed at a comprehensive review of a broad scope of interventions comprised within the CCBT category; moreover, we intended to understand the benefits for a dimensional continuum of disorders, therefore including more than one diagnosis.

Such a broad scope of terms being analysed can introduce bias in the generalization of the results. To the present moment only a few RCTs have been published and therefore separate reviews are of diminished utility, nevertheless we encourage this effort in the future.

In spite of the fact that this was not an objective of the present review, the other limitation that can be pointed out is the absence of quantitative analysis of data. Future reviews should include meta-analysis of data in order to provide a deeper knowledge on total effect sizes of each therapy.

Clinical implications and conclusion

The present review intended to shed light on and summarize the existing evidence regarding the contributions of CCBT for the psychosis continuum. The overall evidence on efficacy was promising and although preliminary (and in need of replication) the results obtained with RCTs highlighted the benefits of mindfulness on psychosis and bipolar disorder; acceptance and compassion-based approaches on psychosis; compassion-focused therapy for the psychosis continuum and dialectical behaviour therapy on bipolar disorder. Compassion-based and dialectical behaviour therapy protocols are the two approaches with less empirical data and therefore the ones more in need of replication and verification.

Although being conceptualized as different therapeutic models the included interventions encompass several common characteristics if analysed in the light of CCBT framework. The present review highlights the fact that the different CCBT approaches brought similar advantages to patients within the psychosis continuum regarding clinical and social outcomes. These results suggest the usefulness of the different process mechanisms (e.g., mindfulness, acceptance, compassion) postulated by CCBT in this population and, although not included in the present review, mixed protocols (including different mechanisms) may be of interest in future clinical studies (e.g., "Compassion Acceptance and Mindfulness" [CAM] approach by Khoury, Lecomte, Comtois, & Nicole, 2013; "Compassionate, Mindful and Accepting Approach to Psychosis" [CMAP] by Martins et al., 2016).

Given several specific characteristics of diagnosis as complex as Schizophrenia, Schizoaffective disorder, and Bipolar disorder (e.g., rates of diagnosis stability, added difficulties when affective symptoms are present) the fact that this review included all diagnosis in the psychosis continuum may be an advantage to inform clinical practice. This review stresses the need for more research on this matter and points out methodological

and clinical design issues future studies should consider. Nevertheless, CCBT approaches seem clinically useful to the psychosis continuum population.

Acknowledgments

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Appendix

Table A1

PUBMED/MEDLINE search strategy

SET	PUBMED/MEDLINE
1	Mindfulness
2	"Acceptance and Commitment Therapy"
3	Acceptance-based
4	Compassion*
5	Metacognitive
6	Dialectic*
7	Sets 1-6 were individually combined with the terms bellow
8	Schizophrenia
9	Schizoaffective
10	Bipolar
11	Psychosis
12	Sets 7-11 were combined with "OR"
13	Sets 7 and 12 were combined with "AND"
14	Set 13 was limited to Clinical Trials, Humans, Adult: 19+ years

Note: All words were used as free text. Individual searches were made for each specific intervention.

CHAPTER IV

EMPIRICAL STUDIES

The Clinical Interview for Psychotic Disorders (CIPD):

Preliminary results on interrater agreement, reliability and qualitative feedback

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The Clinical Interview for Psychotic Disorders (CIPD):
Preliminary results on interrater agreement, reliability and qualitative feedback

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Abstract

The Clinical Interview for Psychotic Disorders (CIPD) is a new, integrative and comprehensive assessment tool for psychotic disorders. CIPD encompasses the evaluation of diagnosis or presence/absence of psychotic symptoms, psychosocial correlates and the most frequent comorbidities. These study's aims are threefold: 1) analyse CIPD inter-rater reliability, 2) examine the relationships between CIPD and other instruments assessing positive and negative symptoms and functionality, and 3) explore the qualitative feedback from participants. The sample includes 30 individuals with psychotic disorders diagnosis from several healthcare institutions. Participants were aged between 18 and 62 years old. Two expert clinical psychologists conducted the interviews and independently rated other assessment tools (PANSS, GAF and PSP) to determine presence and severity of psychotic symptoms and levels of functionality. Results indicated high inter-rater reliability for the majority of CIPD items. Moreover, positive and moderate to strong correlations were found between CIPD, PANSS, GAF and PSP. Finally, from the qualitative analysis five themes emerged namely: CIPD applicability and utility; comparison with previous interviews; interviewer aspects; negative and positive aspects. Overall, these preliminary results suggest that CIPD is a reliable and valid assessment instrument that seems to be well suited for people with psychotic disorders.

Keywords: assessment, CIPD, clinical interview, psychosis, interrater reliability

Introduction

Psychotic symptoms occur in a large spectrum of heterogeneous disorders. Although usually associated with major impairment in individuals' lives, namely in health, social, occupational and personal adjustment (Sim, 2006), differential outcomes and recovery trajectories have been found (Jäger et al., 2014; Lally et al., 2017).

Although several clinical interviews and self-report measures to assess psychotic symptoms do exist, the majority are extensive and particularly diagnosis and phenomenology-oriented (e.g., Diagnostic Interview for Genetic Studies; Nuremberger et al., 1994). In addition, these instruments frequently do not allow a comprehensive assessment of symptom severity or clinical change (e.g., interviews for genetic studies). On the other hand, symptom-based interviews (e.g., Positive and Negative Syndrome Scale; Kay et al., 1987) often do not allow for the establishment of a diagnosis.

Recently, new psychological interventions for psychotic disorders have been developed. These interventions provide a shift from a symptom-focused approach to a more person-based approach, focusing on the recovery process rather than the absence/presence of symptoms. In these person-based approaches, the focus is on promoting individuals' ability to be active, optimistic, hopeful, connected with others and the overall community, empowered, and to pursue a meaningful life (Leamy et al., 2011). This new paradigm encompasses new challenges in the clinical assessment of psychotic disorders and call for the need to develop instruments that not only evaluate psychotic symptoms but also target key psychological processes. There are already some instruments developed based in this recovery model (for a review see Williams et al., 2012). Nevertheless, the majority only assesses a specific domain and do not provide an integrative assessment that combines the assessment of symptoms (frequency, severity, and duration), diagnosis and, particularly, the relationship one's establish with symptoms (e.g. conviction, perceived interference, and empowerment). In fact, the way people relate to their symptoms (for instance, the degree they believe their delusions or hallucinations are true) is linked to significant improvement in long term (e.g. lower rates of rehospitalization) (Bach et al., 2013).

The Clinical Interview for Psychotic Disorders (CIPD; Martins et al., 2015) intends to be an integrative and a comprehensive assessment tool for clinical and research uses, including the identification of intervention's targets, assessment of change and evaluation of clinical interventions. Moreover, the CIPD allows the assessment of both diagnosis, through the presence/absence of psychotic symptoms, the symptoms' psychosocial

correlates (such as the relationship with symptoms, empowerment or interference caused by symptoms) and the most frequent co-morbidities. DSM-5 criteria were used to develop the CIPD including the criteria for psychotic disorders, mood disorders, and substance-use disorders. Additionally, to a minor extent, the criteria for social anxiety disorder, and trauma-related disorders were also included with the main focus on its association with psychotic symptoms. By enclosing several components of clinical assessment, CIPD may contribute to a less time-consuming and, though detailed, lighter assessment.

One main strength of the CIPD is the possibility of gathering both the clinical and patient's ratings for the frequency and interference of all symptoms. Furthermore, the empowerment scale included in CIPD aims to assess the way people experience symptoms to be in their control, believe in the possibility of improving difficulties, have sense of hope and plans for improvement. This aspect is crucial as it gives the patients a more active role on the assessment procedure, as well as taking into consideration the patient's subjective perspective and opinions. This provides a more holistic, person and context-centered assessment of not only the symptom per se, but also its expression in patients' lives.

A more detailed description of the development of the CIPD can be found elsewhere (Martins et al., 2015). The experts' panel evaluation of the CIPD revealed high scorings regarding questions for diagnosis, phenomenology assessment, psychosocial correlates of symptoms, and language suitability for the psychosis population (Martins et al., 2015).

This study main goals are: (1) assess the inter-rater reliability on diagnosis and symptoms (frequency, interference, severity) and with the previous established medical diagnosis; (2) explore the relationships between CIPD and other well-known instruments used to assess positive and negative symptoms (PANSS) and functionality (GAF and PSP); (3) analyse the qualitative data from the CIPD.

Method

Participants

The sample comprises 30 participants with a psychotic disorder diagnosis, including 18 males (60%) and 12 females (40%). Participants have a mean age of 35.13 years old ($SD = 11.25$) ranging between 18 and 62 years old. The mean of years of education is 12.53 ($SD = 3.80$). The majority of the sample is single (66.7%, $n = 20$) and fifty per cent of the participants are employed ($n = 15$).

All patients had a diagnosis in the psychotic spectrum according to DSM-V diagnostic criteria, namely: 63.3% with schizophrenia ($n = 19$), 13.3% with affective psychotic disorder ($n = 4$), 10% with schizophreniform disorder ($n = 3$), 3.3% with psychotic disorder NOS ($n = 1$), 3.3% with brief psychotic disorder ($n = 1$), 3.3% with schizoaffective disorder ($n = 1$), and 3.3% with delusional disorder ($n = 1$). The majority of this clinical sample was recruited in ambulatory service (76.7%, $n = 23$). Sixteen participants had current psychiatric intervention (53.3%) and ten had psychological intervention (33.3%). The mean age for the disorder onset was 28.8 years old ($SD = 8.72$) and the mean age for the treatment onset was 30 years old ($SD = 8.92$). The number of hospitalizations ranged between 0 and 5, with an average of 1.66 ($SD = 1.23$).

Procedure

Prior to data collection ethical approval was obtained from National data protection authority, as well as from the all institutions enrolled in the study. Participants were referred and invited to participate in the study by their psychiatrist on the day of their medical appointment. Participants that accepted to participate were informed about the study's goals, voluntary and confidential nature. All participants gave their written informed consent (Declaration of Helsinki). Inclusion criteria were: 1) psychotic disorders diagnosis (previously established); 2) absence of significant cognitive impairments; 3) being clinically stable for participation; 4) aged between 18 and 65 years old. The CIPD was administered to all participants by two experienced clinical psychologists (members of the research team) in order to perform independent ratings. In average CIPD took around 90 minutes including the possibility of breaks when needed. Moreover, participants were asked to complete a set of self-reported measures that took approximately 30 min. When necessary, the researchers gave clarifications and support.

To measure inter-rater reliability, the patient was interviewed in the presence of two researchers at the same time in the same room. One interviewer conducted the interview and asked the questions (lead interviewer, named henceforward Rater 1) and the other interviewer observed (named henceforward Rater 2) and rated the CIPD items as the interview proceeded (observer). When the interview was finished, the observer was allowed to ask clarifying questions if needed. The lead interviewer and the observer rated responses independently and were never allowed to discuss their ratings. The psychiatrists also gave their independent diagnosis for each patient.

Measures

The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia.

The PANSS derives from a 30-item semi-structured interview and behavioural information. This scale assesses the severity of schizophrenia and psychotic symptoms (Kay et al., 1987). It comprises three subscales: positive symptoms (7 items), negative symptoms (7 items) and general psychopathology (16 items). In the present study only positive (delusions, suspiciousness, and hallucinations items) and negative symptoms subscales (blunted affect, social withdraw, emotional withdraw, abstract thinking, flow of conversation) were used. All items include a definition and seven possible rating points, representing increased levels of psychopathology (from 1 = absent to 7 = extreme). Each item ratings involve the clinical assessment of symptoms prominence, frequency and impact on and disruption to daily life (Kay, 1991). In the present study, the Cronbach´s alphas were .79 for positive symptoms and .81 for negative symptoms.

Global Assessment of Functioning (GAF).

GAF is a generic measure not related to any specific diagnosis. It aims to assess overall psychosocial impairment caused by mental issues. Thus, GAF takes into account symptoms severity, extent, duration and consequences for the individual's life. GAF has a continuum 100-point rating scale, ranging from 1 (higher severity and impairment) to 100 (higher functioning), including ten main intervals described by examples of symptoms and functional impairment. For the present study individuals levels of functionality were determined choosing one of GAF intervals. GAF has consistently proved to be reliable, particularly when raters are trained and experienced (Startup et al., 2002; Vatnaland et al., 2007).

Personal and Social Performance (PSP) scale.

PSP is an instrument designed to measure social and personal functioning in a similar way as GAF. This measure includes four domains of social and individual performance (socially useful activities, including work and study; personal and social relationships; self-care; disturbing and aggressive behaviours). Each domain is scored using a six-point rating scale based on severity (absent, mild, manifest, marked, severe or very severe). Also, a global score of functioning can be computed from the results of all domains using scale between 0 and 100% (Patrick et al., 2009). The PSP has shown

adequate reliability, validity and ability to detect clinical changes in people with schizophrenia (Kawata & Revicki, 2008).

"Experiences of being assessed with the CIPD" Interview.

This interview was developed specifically for the present study. Its aim is to gather qualitative data regarding the participants' experiences from a first-person perspective. The interview privileges open-ended questions and starts with a general question (e.g. "How was your experience of being assessed with the CIPD interview?"). When needed the interviewer might ask more objective questions to elicit specific information and the interview has five 'backup questions' (more specific questions for participants that do not feel comfortable with general questions – e.g. "which were, in your opinion, the positive/negative aspects of the interview").

Data analysis

Statistical analyses were conducted using SPSS (v. 21, SPSS, Chicago, IL, USA) and Medcalc statistical software. The kappa coefficient was computed to determine the reliability of dimensional assessments. Kappa values greater than 0.7 indicate good agreement, Kappa values ranging from 0.5 to 0.7 indicate fair agreement, and Kappa values less than 0.5 indicate poor agreement (Williams & Manatunga, 1992). Spearman correlations coefficients were performed to explore the relationships between CIPD symptoms subscales rated by clinicians (frequency, severity and impairment) and PANSS and PSP and GAF. Spearman correlations are a non-parametric statistic and requires only ordinal data for both variables (Field, 2013). Differences in sample size were due to the fact that not all participants presented all symptoms. That is, when a symptom is absent the item is not scored. Qualitative data analyses were explored with support of NVivo Plus 12 software.

Results

Agreement frequency for diagnosis

For the total sample, results showed that the agreement between raters was 93.3% ($n = 28$) and the error was 6.7% ($n = 2$). Additionally, the agreement between rater 1 and rater 2 and the medical diagnosis was identical (73.3%; $n = 22$) and the error was 26.7% ($n = 8$). Considering specifically the schizophrenia diagnosis (the most prevalent diagnosis in

our sample), the agreement between rater one and medical diagnosis was 89.5% ($n = 17$) and the error was 10.5% ($n = 2$) while the agreement rater two and medical diagnosis was 94.7% ($n = 18$) and the error was 5.3% ($n = 1$).

Inter-rater reliability

Table 1 displays inter-rater reliability (Kappa) of the CIPD symptoms. Kappa was calculated for 13 symptoms, including the assessment of frequency, severity and impairment rated by clinicians. Among the 29 CIPD items, one item had poor reliability: disorganized behaviour severity (K = 0.22, $n = 9$). Furthermore, two items had fair reliability, namely Negative symptoms: Blunted affect impairment (K = 0.65, $n = 10$) and Disorganized behaviour impairment (K = 0.67, $n = 9$). The remaining 26 items presented good reliability (89.66%).

Correlations between CIPD and PANSS

Table 2 shows spearman correlations between CIPD positive symptoms and PANSS positive symptoms. As can be seen in Table 2, moderate to high significant and positive correlations were found between CIPD paranoid delusions and delusions of reference and PANSS scores for delusions and suspiciousness. Furthermore, there were very high significant and positive correlations between CIPD auditory hallucination items and PANSS scores for hallucinations.

Moreover, spearman correlations analyses were also performed to test the relationship between CIPD negative symptoms and PANSS negative symptoms. Overall, there were no significant correlations, with the exception for the relationship between CIPD alogia severity and PANSS social withdrawal ($r_s = .64$, $p \leq .05$, $n = 10$). In addition, significant and positive correlations were found between CIPD blunted affect severity and PANSS blunted affect ($r_s = .86$, $p \leq .01$, $n = 11$), PANSS emotional withdrawal ($r_s = .66$, $p \leq .05$, $n = 11$), PANSS abstract thinking ($r_s = .64$, $p \leq .05$, $n = 11$) and PANSS flow of conversation ($r_s = .62$, $p \leq .05$, $n = 11$). Finally, significant and positive associations were also found between CIPD blunted affect impairment and PANSS blunted affect ($r_s = .84$, $p \leq .01$, $n = 11$), PANSS emotional withdrawal ($r_s = .68$, $p \leq .05$, $n = 11$), PANSS abstract thinking ($r_s = .66$, $p \leq .05$, $n = 11$).

Table 1
Inter-rater reliability agreement (Kappa) and standard error (SE) for the CIPD items (N = 30)

CIPD item	Total number of positive cases for item	Kappa	*SE*	CI
Paranoid delusions frequency	19	0.84	0.08	0.68 – 0.99
Paranoid delusions severity	19	0.89	0.06	0.77 – 1.00
Paranoid delusions impairment	19	0.73	0.08	0.57 – 0.89
Delusions of reference frequency	22	0.83	0.08	0.67 – 1.00
Delusions of reference severity	22	0.82	0.08	0.67 – 0.97
Delusions of reference impairment	22	0.78	0.08	0.62 – 0.94
Auditory hallucinations frequency	18	0.91	0.06	0.79 – 1.00
Auditory hallucinations severity	18	0.96	0.04	0.88 – 1.00
Auditory hallucinations impairment	18	0.82	0.09	0.64 – 1.00
Negative symptoms: avolition severity	24	0.77	0.09	0.59 – 0.95
Negative symptoms: avolition impairment	24	0.86	0.06	0.74 – 0.97
Negative symptoms: alogia severity	10	0.74	0.12	0.50 – 0.98
Negative symptoms: alogia impairment	10	0.77	0.12	0.54 – 1.00
Negative symptoms: Anhedonia severity	20	0.89	0.06	0.78 – 1.00
Negative symptoms: Anhedonia impairment	20	0.80	0.07	0.66 – 0.94
Negative symptoms: Blunted affect severity	10	0.71	0.11	0.50 – 0.92
Negative symptoms: Blunted affect impairment	10	0.65	0.14	0.36 – 0.93
Negative symptoms: associability severity	6	0.86	0.13	0.60 – 1.00
Negative symptoms: associability impairment	6	0.85	0.11	0.64 – 1.00
Disorganized behaviour severity	9	0.22	0.22	-0.22 – 0.70
Disorganized behaviour impairment	9	0.67	0.10	0.46 – 0.87
Disorganized speech severity	11	0.81	0.14	0.53 – 1.00
Disorganized speech impairment	11	0.74	0.12	0.51 – 0.97
Inappropriate affect severity	3	1.00	0.00	1.00 – 1.00
Inappropriate affect impairment	3	1.00	0.00	1.00 – 1.00
Major Depressive Episode severity	17	0.70	0.11	0.48 – 0.91
Major Depressive Episode impairment	17	0.82	0.09	0.64 – 1.00
Manic Episode severity	4	1.00	0.00	1.00 – 1.00
Manic Episode impairment	4	0.78	0.11	0.57 – 0.99

Table 2

Spearman correlations between CIPD positive symptoms and PANSS positive symptoms

	PANSS delusions	PANSS suspiciousness	PANSS hallucinations
Paranoid delusions			
Frequency	.62**	.57**	
Severity	.71**	.67**	
Impairment	.66**	.73**	
Delusions of reference			
Frequency	.73**	.63**	
Severity	.68**	.66**	
Impairment	.70**	.76**	
Auditory hallucinations			
Frequency			.97**
Severity			.95**
Impairment			.93**

Note. For paranoid delusions and auditory hallucinations $n = 18$ and for delusions of reference $n = 22$.
**$p < .01$.

Correlations between CIPD and PSP

Results showed significant and positive correlations between some of the CIPD negative symptoms and PSP social and personal relations, namely for blunted affect impairment ($r_s = .62$, $p \leq .05$, $n = 11$), associability severity ($r_s = .69$, $p \leq .05$, $n = 9$) and associability impairment ($r_s = .74$, $p \leq .05$, $n = 9$). No significant correlations were found between CIPD positive symptoms and PSP domains.

Correlations between CIPD and GAF

Results demonstrated that GAF is significantly and positively correlated with CIPD paranoid delusions severity ($r_s = .61$, $p \leq .05$, $n = 12$), delusions of reference ($r_s = .60$, $p \leq .05$, $n = 13$), auditory hallucinations frequency ($r_s = .61$, $p \leq .05$, $n = 11$), auditory hallucinations impairment ($r_s = .61$, $p \leq .05$, $n = 11$) and auditory hallucinations severity ($r_s = .62$, $p \leq .05$, $n = 11$).

Qualitative analysis

Qualitative data was gathered from 10 participants. Five main categories emerged from participants' feedback, in each category the responses of participants were grouped. The principal themes discussed were: CIPD applicability and utility; comparison with previous interviews; Interviewer aspects; negative and positive aspects. Each major theme

comprised several sub-categories that best reflected the sub-themes that emerged from the interviews (Table 3).

Regarding the theme of "CIPD applicability and utility", five sub-themes emerged, namely utility, individualized treatment, detailed assessment, clinical evolution, and utility for different agents. The theme "comparison with previous interviews" reveals that participants discussed about having no previous interviews, detail and new content of interview. The "negative aspects" were the following: feeling exposed and evaluated; confusion; eliciting unpleasant memories; duration; and question-related issues. Finally, the "positive aspects" included question-related issues, aiding recovery, practical aspects, emotion reactions, cognitive aspects, interview as a sharing moment, interview as a reflection moment, interview encompasses non-judgment and understanding, and useful for understanding the disease and normalization. In regard to "interviewer aspects", the sub-themes were no knowledge of clinical history, setting the relationship for interview, empathy and validation.

Additionally, three other themes emerged that did not had subdivisions: "suggestions", "themes not covered", and "most important aspect". Five participants suggested changes to improve the interview, such as, "to adapt the questions to each patient", "to give feedback on the interview", "reduce duration". Two participants referred that the interview should be in the presence of a reference clinician (e.g. "the patients' psychiatrist or psychologist should be present during the interview"). Two participants also suggested adding "themes not covered" by the interview, such as the opinion of patients regarding the causes of their experiences, and the post-hospitalization recovery. Regarding the "most important aspect" of the interview, participants ($n = 6$) referred open-ended questions, questions about depression, suicide, psychotic symptoms (positive symptoms in particular).

Table 3
Number of participants and references in each sub-category and examples

Name	Participants/ References	Examples
"CIPD applicability and utility"		
stating utility[1]	4/4	"I think this could be integrated in the medical appointment"; "I think it could change the 'story' of other patients"
individualized treatment	1/1	"I think it would be useful [using this interview] because it would allow a more individualized treatment, tailored to each persons' needs"
detailed assessment	2/3	"the interview comprises everything that happens to us"
clinical evolution	2/2	"an important role in the evolution and clinical status of the patients"
utility for different agents	1/1	"if administered at different points of treatment, it can be used as an evaluation tool, for the psychiatrist or psychologist and even the patient, to understand the evolution of the recovery/treatment"
"Comparison with previous interviews"		
No previous interviews	6/6	"no one had ever administered me an thorough interview on these issues before"
detail	1/1	"comparing to other interviews this was more detailed and complete"
new content elicited by the interview	2/2	"it comprised aspects I have never talked about before"
"Negative aspects"		
feeling exposed and evaluated	2/2	"I felt a bit exposed, it is difficult to talk about ourselves especially when you have these experiences"
confusion	1/3	"I felt that sometimes I was being confusing in my speech when answering questions that were very confusing concerning the specific moments [the events happened]" "I could not locate in time"
eliciting unpleasant memories	2/2	"having to remember less happy episodes of my life"
duration	3/3	"I thought it was too long"
question-related issues	3/3	"in my case there were some themes that did not fit with my health/illness experiences, however I think it is pertinent for other patients who may have experienced these situations"
"Positive aspects"		
question-related issues	5/14	"direct, adequate and productive"; "it covered all pertinent issues"; "nothing was left to say"
aiding recovery	2/6	"it was important to overcome the hospitalization's emotional burden"; "through the questions we are confronted with symptoms we have/did not have experienced and that sets us free"
practical aspects	4/5	"not too long"; "it was pleasant being interviewed by two people"; "the interview is flexible"
emotion reactions	4/5	"I felt calm and at ease"; "it made me feel better"
cognitive aspects	1/1	"the interview was interesting and pertinent"
interview as a sharing moment	3/5	"it was for me a moment to share previous experiences in an open and clear way"
interview as moment for reflection	1/1	"it made me think better about everything I went through"

Name	Participants/ References	Examples
interview encompasses non-judgment and understanding	4/5	"it seemed a judgement free interview"
useful for understanding the disease and normalization	2/5	"[the interview was] positive in the way that it made me understand the disease better and continue my recovery"
"Interviewers' aspects"		
no knowledge of clinical history	1/1	"questions that were very confusing concerning the specific moments [the events happened] because the interviewer did not know my medical history"
setting the relationship for interview	3/5	"proximity between the patient and the professional"
empathy and validation	1/1	"they managed to put me at ease, creating a setting of empathy, which was very positive"

Note. [1]Participants that stated utility without mentioning any reasons.

Discussion

The Clinical Interview for Psychotic Disorders (CIPD) was developed to assess symptoms of psychotic spectrum in an integrative and comprehensive manner. Based on the development of the CIPD (for a review see Martins et al., 2015), the present study aimed to analyse CIPD inter-rater reliability, as well as to explore the qualitative feedback from participants from clinical settings. Results showed very high agreement frequency between Rater 1 and Rater 2, as well as high agreement frequency between both Raters and previous established medical diagnosis. Inter-rater reliability was calculated for 29 CIPD items that assessed 13 different symptoms on frequency, severity and impairment. Overall, 26 items showed good reliability, suggesting that CIPD is a reliable and valid assessment instrument to assess psychotic symptoms in clinical populations. In fact, reliability tends to be higher in clinical samples where population is more heterogeneous than in community samples where population is more homogenous (Wittchen et al., 1999). Nevertheless, one item presented poor reliability (item of disorganized behaviour severity). This result may be due to the retrospective nature of the data since the assessment with CIPD was cross-sectional. In fact, the majority of participants did not show disorganized behaviour during the interview. Thus, the raters' assessment relied mainly on participants' evaluation and examples, which in turn might have made the severity assessment more subjective on this topic. On the other hand, previous studies have reported lower interrater agreement when

referring to disorganization symptoms when comparing to positive and negative symptoms (e.g., de Hert et al., 2002; Peralta & Cuesta, 1994)

In the present study, the aim was also to explore the associations between CIPD and other well-known instruments used to assess positive and negative symptoms and functionality. Results indicated that CIPD items for paranoid and reference delusions were strongly correlated with PANSS items for delusions and suspiciousness. Moreover, CIPD items for auditory hallucinations were highly associated with PANSS hallucinations. These high correlations found between CIPD and PANSS also provided evidence for the reliability and validity of CIPD items.

In addition, CIPD items regarding negative symptoms, specifically blunted affect impairment, associability severity and impairment, were moderately to highly correlated with PSP personal and social relations. On the contrary, CIPD positive items were not significantly correlated with PSP domains. These results go in line with previous research indicating presence of negative symptoms as a poor prognosis predictor including in social outcomes (Milev et al., 2005). Some studies have stressed that the impact of negative symptoms in functionality is greater than the one of positive symptoms (Rabinowitz et al., 2012). On the other hand, CIPD items regarding positive symptoms (delusions and hallucinations) were positively and moderately associated with global functioning (assessed by GAF). This result points out that participants with higher frequency, severity and impairment of positive symptoms are also rated as being less functional. Associations between the GAF and measures of positive symptoms have previously been shown (Startup et al., 2010). These results, with both negative and positive symptoms being associated with different measures of functioning, might indicate that the way functionality is measured is relevant in people with psychosis. Future studies might clarify these associations in larger samples, further testing CIPD validity.

Another goal of the current study was to assess participants' perceptions regarding CIPD interview. Overall, participants considered the interview as useful, detailed and adequate for their needs, potentially aiding individualized treatment and monitoring clinical evolution. The "negative aspects" category highlighted discomfort due to 'feeling exposed and evaluated' and 'eliciting unpleasant memories', both unspecific consequences of clinical interviews. These unpleasant feelings might be counteracted with 'interviewers' aspects' such as creating a relationship rooted on empathy and non-judgement (themes that also emerged in qualitative analysis). On the other hand, some participants reported positive and pleasant emotions during the interview such as calmness, clarity, or not feeling

judged. The interview was pointed out as an important moment for sharing, reflecting upon, understanding and normalizing experiences and even a moment that indirectly aided their recovery.

The length of the interview and adequacy of questions were stated as negative aspects. Nevertheless, these opinions were not consensual since some participants found the duration "adequate" and needed to gather pertinent information. On the other hand, although some questions did not apply to all participants (as is expected in a clinical interview aiming to perform diagnosis and differential diagnosis), the majority of participants found the interview/questions adequate. The suggestions given by the participants to improve the experience of being assessed with the CIPD are easily implemented in clinical settings (e.g. interview performed by their clinician, shorter duration with interview being divided in several assessment moments, better pre-assessment of questions that will not apply to each patient).

The main limitation of the current study was the small sample size, particularly considering that some symptoms had low prevalence in our sample. This may impede the generalizability of our results and did not allow for more specific analysis. For instance, reliability of total scores (such as composites for 'positive symptoms' or 'negative symptoms'), discriminant validity of composite scores to discriminate between diagnostic categories, interrater reliability and agreement with psychiatric diagnosis among different diagnostic categories, should be explored in future studies with larger samples. Nevertheless, this was a preliminary study to assess the potential utility and reliability of CIPD, and a larger study, informed by these results, is ongoing. Another limitation of the present study was the fact that the assessment with the convergent validity measures (PANSS, GAF and PSP) was performed by the same researchers that administered the CIPD. Although independent raters would be desirable, considering that there is not one standardized assessment for people with psychosis in Portugal (and thus the available assessments varied within participant institutions) it would be unethical and burdensome to perform independent interviews with different interviewers to each participant.

To sum up, although preliminary and in need for replication, the results point to the CIPD's reliability and validity in assessing psychotic symptoms, specifically their frequency, severity and impairment. The inclusion of both clinician and patient assessments is a major strength of this interview, in accordance with recovery-based recommendations (Leamy et al., 2011). Moreover, CIPD seems to be well accepted by patients that highlighted its utility, degree of detail and content. Participants considered the interview as

an opportunity for empathy and validation of difficult experiences and a moment for sharing and reflecting upon them in a non-judgmental, normalizing and understanding way.

<div align="center">**References**</div>

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Willingness and Acceptance of Delusions Scale:

Early findings on a new instrument for psychological flexibility

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Early findings on a new instrument for psychological flexibility

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Abstract

Acceptance and Commitment Therapy and related constructs (experiential avoidance, cognitive defusion and committed action) have recently been applied to psychosis. However, with a few exceptions, this application has not resulted in symptom-specific assessment instruments. The current work intends to develop a measure for assessing experiential acceptance regarding delusions (the Willingness and Acceptance for Delusions Scale) and to conduct a preliminary study of its psychometric properties in a sample of 91 patients with a psychotic disorder, mostly male (87%), single (86%), unemployed (44%), presenting with a schizophrenia diagnosis (71%), and currently with delusions (last week – 52%). Exploratory factor analysis yielded a three-factor structure (Acceptance and Action, Non-entanglement and Non-struggling), which adequately fitted the data and reflected the intended constructs within an Acceptance and Commitment Therapy framework. Scores from all factors achieved adequate reliability and were associated with mindfulness and satisfaction with life. These early findings point to the internal and construct validity and reliability of the scores of the WADS. Although further research into the scale's psychometric properties, particularly construct validity, is needed, its use in research and clinical practice with psychosis populations seems substantiated.

Keywords: Acceptance and Commitment Therapy, delusions, psychosis, willingness

Introduction

Recent models for psychosis have stressed the importance to everyday functioning of how patients psychologically relate with symptoms, namely by experiential acceptance versus experiential avoidance, (Gaudiano, Herbert, & Hayes, 2010). Experiential acceptance has been associated with quality of life in people with psychosis, when facing stressful experiences (Vilardaga, Hayes, Atkins, Bresee, & Kambiz, 2013). Experiential acceptance, within the framework of Acceptance and Commitment Therapy (ACT, Hayes, Strosahl, & Wilson, 1999), is defined as "the active and aware embrace of private experiences without unnecessary attempts to change their frequency or form" and is conceptualized as a way of increasing values-based action (Hayes, Pistorello, & Levin, 2012, p. 982). Values-based actions, also referred to as committed action, correspond to action patterns that are effective and linked to chosen valued-life directions (Hayes et al., 1999). Another ACT construct usually associated with experiential acceptance is cognitive defusion – the ability to perceive private events (e.g. thoughts, memories, emotions) as something that is being experienced instead of focusing on their literal quality, thus decreasing levels of believability (Hayes et al., 1999). Cognitive defusion has been implicated, as a potential protector variable, in the relationship between psychotic-like symptoms and distress (Rothwell, Newman Taylor, Bolderston, Deveson, & Maguire, 2015).

On the other hand, experiential avoidance (EA) can be conceptualized as the unwillingness to experience aversive private events, such as thoughts, images, emotions and bodily sensations, combined with active strategies to try to alter, suppress or avoid these experiences or the events that elicit them (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). It has been associated with psychopathology in several non-clinical and clinical populations, including psychosis (for a review see Chawla & Ostafin, 2007). The predominance of avoidant styles of coping in psychosis is widely studied, as are the difficulties in understanding, being aware of, and accepting internal experiences (Lincoln, Hartmann, Köther, & Moritz, 2015). Recent studies have stressed the important role of EA in explaining vulnerability to delusions (Goldstone, Farhall, & Ong, 2011), which are one of the most common experiences endured by those facing psychotic disorders. Given this growing clinical and etiological interest in EA and acceptance processes in psychosis in general, and in delusions in particular, there is a need for making assessment measures available that are able to evaluate these constructs.

There are several questionnaires to assess the presence of delusions and its correlates (for a review see Martins et al., 2016). The most used questionnaire for assessing delusions (without focusing on a specific type) is the Peters et al. Delusions Inventory (PDI-21, Peters, Joseph, Day, & Garety, 2004) which measures the distress, preoccupation and conviction of a wide range of delusional beliefs. There are also relevant instruments specifically regarding reactions and relationship with paranoid thoughts (e.g. Reactions to Paranoid Thoughts-RTPTS – Lincoln, Reumann, & Moritz, 2010). Although these instruments are extremely useful and allow assessing delusions as a multifaceted construct (e.g. the PDI-21 assesses conviction, distress, coping), none of them was designed to evaluate the relationship people establish with their delusional thoughts, as conceptualized by contextual behavioural therapies (e.g. the RTPTS does not emphasizes, for instance, the impact delusions might have on living a valued life).

In line with the theoretical rationale of acceptance-based interventions, assessment instruments for psychotic symptoms should be able to assess the way people deal with delusions – measuring both willingness to experience thoughts and tendencies to avoid them, overidentify with them or ruminate over them – as well as people's committed action (behaviours in accordance with one's values), regardless of delusions. Some of these processes have been appropriately assessed within populations with psychosis (e.g. Gaudiano et al., 2015), though using instruments not specifically developed to this end. This is the case of the Acceptance and Action Questionnaire (AAQ-II, Bond et al., 2011), measuring psychological inflexibility and experiential avoidance of thoughts, memories and emotions. Specifically for psychotic symptoms, the Voices Acceptance and Action Scale developed by Shawyer and collaborators (2007) was designed to assess acceptance and committed action in the context of the voice hearing experience and is the only acceptance, symptom-specific instrument available for psychotic symptoms.

Still, there are no measures to date that specifically assess the various contextual processes, as conceptualized by ACT, as they may apply to delusional ideation. Such measures would have several advantages, namely: (a) contribute to the development of knowledge regarding risk factors and maintenance variables in delusions; (b) facilitate assessment of the processes targeted in acceptance-based interventions; (c) improve the assessment of delusions in clinical and research settings. Therefore, the present study aimed to develop and present preliminary psychometric results of a new measure to assess different contextual processes in a sample with psychosis.

Method

The study was approved by the Portuguese Data Protection Authority with the reference [12214/2015]. The present study meets the ethical standards for conducting research with human subjects.

Participants and procedure

Participants were recruited after referral from their psychiatrists within five hospitals (following approval from their ethics committees). Inclusion criteria were patients with psychotic disorder diagnoses (established by each patients' psychiatrist according to DSM-5 criteria for psychotic disorders) including schizophrenia-spectrum disorders, and mood disorders with psychotic features, with history of past or present delusions of any type, aged 18–60 years old. Exclusion criteria included severe cognitive deficits or psychotic symptoms, as assessed by each patient's psychiatrist. The nature, objectives and participant's role were explained and all questions were clarified. Anonymity and confidentiality were assured upon agreement to participate via informed consent. Participants were then asked to fill in the experimental version of the Willingness and Acceptance for Delusions Scale (WADS-described below).

The complete sample included 91 participants, mostly male (86.8%), single (85.7%) and unemployed (44%). The mean age was 34.97 ($SD = 10.31$) and participants had 10.19 ($SD = 8.01$) years of education. Their main diagnosis was schizophrenia (71.4%), followed by psychotic disorder not otherwise specified (23.1%), schizophreniform disorder (3.3%), schizoaffective disorder (1.1%) and bipolar disorder with psychotic features (1.1%). The majority of participants reported having had delusions "last week" (51.6%); a minority of participants reported the last time of having delusions within 4 to 6 months (2.2%).

Considering the specific characteristics of this population and in order to reduce the assessment burden, two additional measures were used for validity purposes. The Five Facets of Mindfulness Questionnaire-short version (FFMQ-15, Gregório, Pinto-Gouveia, Carvalho, & Palmeira, 2016) and the Satisfaction with Life Scale (SWLS, Diener, Emmon, Larsen, & Griffin, 1985; Simões, 1992) were filled only by a subsample of patients ($n = 75$). Participants who did not fill in the validity measures either refused to do so (though remaining interested and not withdrawing consent) or showed observable signs of burden (reported being tired, were distracted) after filling in the WADS. The subsample of participants that filled in the two additional subscales did not significantly differ from the

ones that did not regarding gender ($\chi^2_{(1)}$ = .525; p = .469), age ($t_{(88)}$ = -.23; p = .822), years of education ($t_{(17,95)}$ = .78; p = .448), marital status ($\chi^2_{(4)}$ = 1.48; p = .830), diagnosis ($\chi^2_{(4)}$ = 6.83; p = .145) or last time of reported delusions ($\chi^2_{(4)}$ = 1.89; p = .756).

Measures

The items for the WADS were intended to be useful for people with psychosis, regarding acceptance and psychological flexibility. Both relevant literature regarding psychological flexibility as conceptualized in ACT and its applications to psychosis, as well as existing instruments measuring the main components of psychological flexibility (ie the specific symptom adaptations of the AAQ-II; Bond et al., 2011), were taken as starting points to write those items. The WAS is proceeded by a brief introduction concerning how delusions can be conceptualized (cf. Table 1). The participant is instructed to think about a specific thought, experienced either in the present or the past, and rate the items using a 0–3 agreement scale. The items reflect processes such as experiential and non-judgmental acceptance (e.g. "*When a thought like this emerges I just notice it and move on*"), committed action (e.g. "*In spite of having these thoughts I do what I have to do*"), cognitive defusion (e.g. "*I am more than just these thoughts*"), non-rumination and non-entanglement with thoughts (e.g. "*I find myself spending a lot of time ruminating on these thoughts*" – reversed scoring), non-avoidance (e.g. "*I tell myself I should not have these thoughts*" – reversed scoring) and willingness (e.g. "*I wish that these thoughts could disappear*" – reversed scoring). Initially, the research team developed a set of 22 items that were submitted to the evaluation of 50 psychology undergraduates to assess their comprehensibility. The research team carefully analysed all suggestions and minor language changes were made in order to clarify some items (e.g. replacing complex words with simpler ones and the clarification of some sentences with specific examples). The modified 22 items constituted the experimental version of the WADS and were included in the assessment protocol (cf. Table 1).

Table 1
Original 22-item scale

Instructions: There are several people that sometimes experience thoughts about themselves, others or the surrounding environment that feel true to the person experiencing them, even in the presence of contrary evidence. These thoughts, for instance, thoughts about having special capacities that other people don't have, thoughts that other will harm oneself, can be called delusions and often remain present even when people take medication.

1	In spite of having these thoughts I do what I have to do.
2	These thoughts reflect who I am (e.g. If I have a "bad" thought it means I am a "bad" person).
3	When a thought like this emerges I just notice it and move on.
4	These thoughts are a part of my life.
5	I have learnt to live with these thoughts.
6	I fight against these thoughts.
7	I am more than just these thoughts.
8	When these thoughts arise I try to distract myself (e.g. thinking about other things, watching TV, listening to music).
9	I am not able to move on with my life while having these thoughts.
10	I wish these thoughts could disappear.
11	Doing what I value in life makes me feel fulfilled, alive and energized.
12	I frequently worry about these thoughts being good or bad.
13	I tell myself I should not have these thoughts.
14	There are worse things in life than having these thoughts.
15	I do not have much conscience of what is going on around me when I am focused on these thoughts.
16	I find myself spending a lot of time ruminating on these thoughts.
17	These thoughts prevent me from doing things I want to do.
18	These thoughts control my life.
19	I accept the fact that I have these thoughts.
20	I can attain my goals even while having these thoughts.
21	I am motivated to do what's important in my life independently of having these thoughts.
22	I put effort into not having these thoughts.

Note. For the final version items 2, 4, 8, 9, 11, 13, 14, 17, 18, 19 were removed.

Through the assessment phase, members from the research team informally evaluated, via clinical observation, the patients' comprehension of the WADS items. Particular attention was paid to items which needed clarification or items understood differently than expected. After the sample collection phase ended, four items were removed due to their complexity or ambiguity (e.g. "*These thoughts reflect who I am*").

The remaining 18 items constituted the version of the WADS that was studied psychometrically in the present study.

The FFMQ, used for validity purposes, is a shorter version of the 39-item original questionnaire intended to measure the dispositional and multifaceted characteristics of mindfulness. Participants are asked to rate how mindful they feel in day-to-day life (ie subscales named nonreacting, observing, acting with awareness, describing and nonjudging) using in a five-point frequency Likert scale ranging from 1 to 5. Adequate to good internal consistency was found in the validation study (Gregório et al., 2016). In our study the internal consistencies varied from .61 to .75 with exception of the facet "describing" (.48) that was thus excluded from the analyses.

The SWLS, also used for validity purposes, is 5-item scale designed to measure life satisfaction in a 7-point agreement scale from 1 to 7. The original study found adequate internal consistency, test-retest reliability and convergent validity (Diener et al., 1985). The Portuguese version also showed adequate internal consistency (Simões, 1992). The internal consistency of the SWLS in the present study was .75.

Data analysis

The internal structure of the WADS was explored via exploratory factor analyses in Mplus, Version 7 (Muthén & Muthén, 1998–2011). Oblimin rotation was used due to the hypothesized correlation between the factors, and parallel analysis results were used to decide on the number of factors to be retained, so long as acceptable fit was also achieved by that solution (RMSEA ≤.06; CFI ≥.95 and SRMR ≤.08; Hu & Bentler, 1999). Considering that the data was not multivariate normal (Mardia's multivariate skewness statistic = 149.864; $p < .001$; Mardia's multivariate kurtosis statistic = 535.950; $p = .246$), the Weighted Least Squares with Mean and Variance Adjustment (WLSMV) estimator was used. The criteria used for exclusion of items was them presenting crossloading values higher than .32 (Tabachnick & Fidell, 2001). The remaining analyses were computed with IBM SPSS Statistics for Windows, Version 20. Cronbach's alphas were performed to assess scale reliability with values higher than .70 being considered acceptable. For validity assessment, spearman correlations were performed to assess the magnitude of associations among the subscales of the WADS, the subscales of the FFMQ-15 (nonreacting, observing, acting with awareness and nonjudging), as a measure of mindfulness, and the total score of the SWLS, as a measure of satisfaction with life.

Results

Exploratory factor analysis

Parallel analysis suggested a 3 factor-structure ($\chi^2_{(102)}$ = 149.785, p < .05; RMSEA = 0.072, 90% CI = 0.044–0.095; CFI = 0.942; SRMR = 0.068) wherein six items were excluded due to crossloadings. The remaining 12-items were subjected to a new EFA and again PA suggested a three-factor solution, which proved to be an acceptable fit to the data, considering the CFI and SRMR indices ($\chi^2_{(33)}$ = 56.166, p < .05; RMSEA = 0.088, 90% CI = 0.046–0.126; CFI = 0.948; SRMR = 0.064); no items presented meaningful crossloadings. The final factor structure with correspondent loadings can be seen in Table 2, as well as results for internal consistency for the scores of which of the factors.

Table 2
Factor structure, factor loadings and internal consistency

		Factor 1	Factor 2	Factor 3
Acceptance and Committed action (α = .74)				
1 (1)	Doing what I have to do independent of thoughts.	**.78**	-.09	-.01
2 (3)	Noticing thoughts and moving on.	**.47**	.05	.02
3 (5)	Learned to live with thoughts.	**.57**	-.13	.08
4 (7)	Self as more than thoughts.	**.42**	.04	-.21
5 (20)	Fulfilling goals while having thoughts.	**.72**	.14	.08
6 (21)	Motivated to do what is important independent of thoughts.	**.68**	.11	-.05
Non-entanglement (α = .71)				
7 (12)	Frequently worrying whether thoughts are good or bad.	-.20	**.47**	.26
8 (15)	Not having much conscience of what is around while having thoughts.	-.02	**.82**	-.10
9 (16)	Ruminating in thoughts.	.08	**.96**	.04
Non-struggling (α = .74)				
10 (6)	Fighting thoughts.	-.05	.08	**.61**
11 (10)	Wishing thoughts to disappear.	-.01	.24	**.73**
12 (22)	Efforts not to have thoughts.	.02	-.13	**.95**

Note. The numbers in subscript are the original scale numbers.

The final version of the WADS thus comprises 12 items. The first factor – "Acceptance and Action" – intends to measure acceptance and committed action processes as understood by the ACT framework. It encompasses items assessing competencies to: be aware of delusions without reacting (item 2), acceptance of delusions (item 3), separating

the self from delusions (item 4) and acting with commitment while having delusions (items 1, 5, 6). The second factor – "Non-entanglement"– relates to the ability to defuse from delusions non-judgmental ly. It includes items assessing the ability not to evaluate thoughts as good or bad (item 7) or ruminate on them (items 8 and 9). The third factor – "Non-struggling" – intends to measure the capability to let delusions emerge without fighting them or trying to make them disappear (items 10–12). The second and third factor correlated significantly (r_s = .26, p = 014); no other significant correlation values were found between these three factors.

Evidence based on the relations with other variables

The WADS subscale "Acceptance and committed action" associated significantly and positively with the FFMQ-15 subscale "observing" (r_s = .39, p = 001) and the score of "satisfaction with life" from the SWLS (r_s = .31, p = 006). The subscale "Non-entanglement" from the WADS, correlated significantly and positively with the FFMQ-15 subscales "act with awareness" (r_s = .35, p = 002) and "non-judging" (r_s = .33, p = 004). The WADS subscale "Non-struggling" related positively and significantly with the "non-judging" facet of the FFMQ (r_s = .31, p = 006). No other correlations achieved statistical significance.

Discussion

In view of recent research and clinical interest about the role of processes such as experiential acceptance in coping with psychotic symptoms, the present study sought to present early findings on the development of a new instrument for assessing psychological flexibility processes in the context of delusional ideation. The final scale comprised 12 items measuring three relevant contextual constructs: acceptance and action, non-entanglement and non-judging. These constructs, which resulted from exploratory factor analysis, point to the WADS's construct validity, in as much as they are congruent with the conceptual framework that based this research (ie these constructs are taken directly from the contextual cognitive-behavioural therapies).

The first – "Acceptance and Action" – intends to measure processes related with experiential acceptance and committed action. The items refer to a sense of acceptance while living with delusions. The person is aware of their existence and true nature as a transient experience separated from the self, and engages in valued life directions

regardless of the content of any specific delusions and instead of reacting to them. These constructs have been widely described in the ACT model as parts of the psychological flexibility construct associated with health and well-being outcomes (e.g. Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes et al., 2012).

The second construct under assessment – "Non-entanglement" – relates to the ability to defuse from delusions in a non-judgmental way. The person is able to understand that the delusional thoughts are neither good nor bad and do not need to be evaluated in this manner; so, s/he does not ruminate or "get lost" in delusions in an unproductive way. This construct seems to be similar to the cognitive defusion construct of ACT which is described as the ability to see the thoughts as they are instead of treating them as a reflection of the reality, decreasing the believability and attachment to them (Hayes et al., 2006). This construct also resembles one of the mindfulness facets described by Baer et al. – non-judge: "refraining from judgments (...) about having the experience" (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006, p. 42). The third construct assessed by the WADS – "Non-struggling" – intends to measure the ability to allow delusions to emerge without fighting them or trying to make them disappear (i.e. the person is not engaged with eliminating the thoughts).

It may be argued that factor 1 is the opposite of factors 2 and 3. Nevertheless, acceptance is described as "the active and aware embrace of private experiences without unnecessary attempts to change their frequency or form" (Hayes et al., 2012, p. 982), as such fostering values-based action. Accordingly, we understand acceptance and committed action as a set of more complete and complex processes than simply not trying to avoid the internal experience or becoming over engaged with it. The correlations between the factors (only factors 2 and 3 were correlated) and the different patterns of association between factors and related constructs are suggestive of these different processes. On the other hand, "non-entanglement" and "non-struggling" factors both imply some degree of defusion from the thought/belief. Nevertheless, while entanglement is more closely related (in a direct way) to the fusion process (e.g. worrying about good or bad nature of the thought); the (non)struggling factor is only indirectly related to fusion since it depicts experiential avoidance through active struggle against thoughts. Moreover, the correlation between the two factors was indicative of them being related by independent constructs, in accordance with the assumptions of acceptance-based therapies.

Associations with related constructs were, overall, of low to medium magnitude, and so the results discussed below should be interpreted with caution. "Acceptance and

Action" was associated with the ability to observe one's internal experience without becoming entangled with its content. In fact, this ability seems to be important in the process of actively accepting delusions and not letting them interfere in pursuing valued life directions. The ACT framework purposes a detached stance from thoughts and other internal experiences (ie observing them dispassionately and/or describing them by labelling the process of thinking – cognitive defusion) in order to being able to act effectively (Hayes et al., 2006). On the other hand, "Non-entanglement" was associated with the "act with awareness" and "non-judging" facets of mindfulness. It can be understood that labelling delusions as "good or bad" and being fused and entangled with delusional content are conflicting processes in relation with a view of thoughts as internal experiences, happening on a moment to moment basis and are not inherently positive or negative. The ability to act with awareness and a non-judgmental attitude implies the ability to label delusions as mere thoughts, neither positive nor negative and letting go of the rumination and fusion processes (Hayes et al., 2006), which is what is measured by the non-entanglement factor. The "Non-struggling" subscale was also associated with the "non-judging" facet of mindfulness, suggesting that seeing delusions as transient internal experiences (ie without judging them as good or bad) may decrease the need to avoid them or prevent them from happening (Pinto-Gouveia, Gregório, Dinis, & Xavier, 2012).

The "Acceptance and Action" subscale was also associated with the measure of adaptive adjustment – satisfaction with life. This is an important indicator of these adaptive mechanisms as promoters of health and well-being and is congruent with previous research. Committed action has been associated with adaptive social functioning, vitality (McCracken, 2013), emotional, social and psychological well-being (Kraiss, 2014); all these aspects are likely to be related to satisfaction with life. Our results are also in line with findings on the negative association of EA with satisfaction with life (e.g. Kashdan, Barrios, Forsyth, & Steger, 2006).

Some limitations of the present study should be considered. First, the sample size was relatively small, which had to do with its specific diagnostic characteristics. Although it is larger than the samples used in similar studies with patients with psychosis (e.g. Brockman, Kiernan, & Murrell, 2014; Shawyer et al., 2007) it is still necessary to replicate these findings in larger, representative (e.g. gender) and non-Portuguese samples. Specifically, the WADS factor structure should be further explored and the hypothesis of a higher order factor (psychological flexibility) could be tested. Although it was not tested here due to model identification constraints, the reliability for the overall scale was

relatively low (α = .68). Therefore, we do not recommend the use of the WADS as a unidimensional measure at this moment. Future studies may also use more specific measures to assess the construct validity of the WADS, which we could not do due to them not being available in the Portuguese language, namely the Delusions Inventory, PDI-21 (Peters et al., 2004) or the Reactions to Paranoid Thoughts Scale (Lincoln et al., 2010). Also, there is a need to understand the relationships between the WADS subscales and other measures of psychological flexibility processes, such as cognitive defusion, valued-living and committed action (e.g. Cognitive Fusion Questionnaire – Gillanders et al., 2014; Committed Action Questionnaire – Kraiss, 2014). Future works should also address the hypothetical association between the constructs assessed by the WADS and insight, particularly low insight, and how insight might have influence on WADS scores. It is possible that people with higher levels of insight might be at advantage in perceiving their thoughts as an internal experience that does not necessarily correspond to reality, thus presenting less urge to struggle to eliminate or impulse to act upon thoughts. Nevertheless, people with high insight and adequate understanding of their delusional ideation as a symptom of mental illness might also struggle with issues of fusion, experiential avoidance and lack of committed action. It might also be true that people with low insight might try to act according to their values; understand that, regardless its veracity, the thought might not be useful in a given situation; experience lessen rumination and preoccupation strategies; all in spite of great delusional conviction. Tentatively, in order to reduce the hypothetical influence of low levels of insight on the scores taken from the WADS, we suggest that for people with low insight some adaptations could be made to introducing delusions prior to the administration of the scale, for instance, briefly explaining that the questionnaire refers to ideas that other people do not believe as true or that we have 100% conviction are true; or even assessing delusions through clinical interview and then referring to a specific idea while responding to the questionnaire.

Following further study on its psychometric properties and clinical utility, the WADS may be a useful assessment tool for intervention with people experiencing delusions. As a psychological flexibility-related measure, it may be particularly adequate in interventions within the contextual behavioural science framework, with ACT being the most evident example, though other models might also benefit of such measure. The analysis of WADS scores prior to therapy could bring important clues to formulation (ie maintenance factors) and therefore to intervention planning. If patients score low on the WADS and depending on which specific subscales the low scores emerge, the clinician

would have information on experiential avoidance strategies the patients might be using to deal with delusions, as well as the impact delusions might be having in people's lives.

In conclusion, the WADS seems to be a reliable questionnaire of potential utility to assess contextual processes in relation to delusional activity. Although further work is needed on its psychometric properties and factor structure in different samples, this instrument seems to have potential to be used in clinical and research settings.

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Assessing antipsychotic medication adherence from a recovery-based perspective:

Psychometric properties of a new scale

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Assessing antipsychotic medication adherence from a recovery-based perspective: Psychometric properties of a new scale

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Abstract

Antipsychotic medication non-adherence is a complex and multifaceted problem that may hinder recovery in psychosis-spectrum disorders. Therefore, it warrants an early and comprehensive assessment. Current self-report measures focus entirely on behavioural and attitudinal barriers to adherence, failing to provide insight about key psychosocial drivers such as shame and stigma that may also account for non-adherence. This study's main goals were to develop a brief scale for measuring antipsychotic (non)-adherence and associated intra and interpersonal barriers (Antipsychotic Medication Adherence Scale – AMAS), and explore its psychometric properties. One hundred and seventy participants with a psychosis-spectrum disorder were recruited and filled in a battery of self-report measures. Exploratory factor analysis supported a two-factor solution, with one factor tapping the influence of different barriers to medication adherence and other factor encompassing perceived positive effects of medication. The scale presented good reliability and convergent validity as evidenced by significant moderate-to-strong associations with the Medication Adherence Rating Scale. Although in need for further study, AMAS seems a valid and reliable measure to assess antipsychotic (non)-adherence and underlying behavioural/psychosocial drivers. With replication, AMAS might be a useful measure that could be used in different clinical and research settings.

Keywords: (non)-adherence, barriers, psychosocial drivers, factor analysis, psychometric properties

Highlights

- Antipsychotic Medication Adherence Scale is a brief, 13-item scale
- It assesses several aspects of antipsychotic adherence in people with psychosis, including psychosocial drivers frequently neglected in other adherence assessment tools
- It comprises two factors: "Barriers to adherence" and "Perceived positive effects"
- The scale showed good psychometric properties

Introduction

Due to their features and chronic course, psychotic disorders have a major impact upon the individual's quality of life and functioning, resulting in considerable socioeconomic burden for patients, their families and society, as high as 1.65% of a country's gross domestic product (Chong et al., 2016). Early diagnosis and intervention are therefore pivotal in minimizing disease impact and improving prognosis (Fusar-Poli et al., 2017).

Traditionally, schizophrenia-spectrum disorders were considered as progressively deteriorating conditions, but a recent meta-analysis on remission and recovery after first-episode psychosis described pooled remission and recovery rates of 58% and 38%, respectively (Lally et al., 2017).

International guidelines recommend antipsychotic medication as the first-line treatment for the management of psychotic disorders (Keating et al., 2017). Antipsychotic medication has proven effective in controlling and reducing psychotic symptoms, prevent relapse, and lessen functional deterioration (e.g., Leucht et al., 2012; Goff et al., 2017).

Despite antipsychotics' usefulness, non-adherence is common, with rates around 40%-50% (Lacro et al., 2002; Valenstein et al., 2006). Such prevalence is worrying considering that non-adherence, even if only partial, is associated with unfavourable outcomes (e.g., reduced quality of life, heightened economic disadvantage) and poor prognosis (e.g., persisting symptoms, increased relapse rates, poor psychosocial functioning), besides its negative impact upon treatment-related decisions and effectiveness (Masand et al., 2009; Higashi et al., 2013; Weiden, 2016).

Adherence has been conceptualized as the degree to which behavioural patterns are congruent with the specific recommendations or instructions provided by health professionals and can be represented along a continuum ranging from non-adherence to

complete adherence (Julius et al., 2009). Non-adherence may thus include an array of behaviours ranging from intentional and extreme forms of non-adherence (e.g., refusing to undergo treatment) to more unconscious and manageable practices such as erratic medication use (Higashi et al., 2013).

Factors influencing medication non-adherence in schizophrenia can be organized into three main clusters: patients' characteristics, clinical characteristics, and environmental influences. Patient-related factors include sociodemographic aspects, previous history of non-adherence, comorbid substance abuse, poor insight, negative attitudes towards medication, forgetfulness and other difficulties associated with cognitive deficits, beliefs about treatment necessity after perceived symptomatic improvement, shame regarding medication intake (Acosta et al., 2012; Higashi et al., 2013; Sendt et al., 2015), and positive attitudes towards symptoms (Moritz et al., 2014).

Clinical correlates of non-adherence comprise positive and negative symptomatology, especially when persisting and severe, adverse side-effects, and medication regimen complexity (Acosta et al., 2012; Higashi et al., 2013). Interestingly, despite reported improvements in antipsychotics' side-effects profile, mixed results have been found in its association with non-adherence (e.g., Dolder et al., 2002; Ascher-Svanum et al., 2008; Julius et al., 2009; Sendt et al., 2015). Environmental factors encompass the lack of social and economic resources, poor therapeutic alliance, other's negative attitudes towards medication, and stigma (Acosta et al., 2012; Higashi et al., 2013; Sendt et al., 2015).

Different types of non-adherence (e.g., intentional versus non-intentional) have been associated with different individual profiles and correlates (see Acosta et al., 2012). Recognizing the complexity and multifactorial nature of non-adherence, researchers and clinicians have embraced a dimensional conceptualization, whereby non-adherence is viewed as a "dynamically changing behaviour" (Staring et al., 2013; Moitra and Gaudiano, 2016). Such conceptualization is further supported by empirical studies demonstrating that the number and type of non-adherence predictors may change over time (e.g., Robinson et al., 2002). This changing nature renders non-adherence a difficult to handle situation, requiring a careful and tailored evaluation of underlying causes to achieve adequate understanding and effective management (Moitra and Gaudiano, 2016).

Given their brief nature and cost and time-effectiveness, subjective measures are the most used methods to assess non-adherence and its underlying factors (Velligan et al., 2006). This has led to the development of a wide range of self-report measures as evidenced

by a systematic review conducted by Nguyen and cols (2014). An analysis of each scale's content conducted by the authors showed that, in general, adherence scales measure at least one of three aspects: medication adherence behaviours, barriers to adherence (e.g., forgetfulness, illness-related factors), and beliefs associated with medication adherence (e.g., concerns and perceived importance).

Notwithstanding the clinical usefulness and multidimensionality of many of these measures, their application to antipsychotic medication and specifically to psychotic-spectrum disorders is limited. Most self-report scales are either too broad in spectrum, pertaining to medication adherence in general (e.g., Medication Adherence Questionnaire, Morisky et al, 1986), or disease-specific (e.g., Hill-Bone Compliance Scale, Kim et al., 2000). The Medication Adherence Rating Scale designed by Thompson and cols (2000) to assess adherence in psychiatric patients, is the only scale that has been consistently used in psychotic disorders. However, the dichotomous response scale of the MARS, which precludes the assessment of different degrees of one same phenomenon, and the exclusive focus on behaviours and attitudes seems to hinder a full comprehension of other important intra and interpersonal drivers for non-adherence. This limitation seems to be transversal to all current adherence measures which, although gauging different barriers, behavioural patterns and beliefs about medication, still fail to provide insight into subjective perspectives regarding medication intake and psychosocial drivers of non-adherence such as stigma and shame.

The inclusion of such variables in non-adherence assessment may be valuable for several reasons. First and aligned with recovery-based models' principles, in which first-person perspectives and shared-decision making are key, non-adherence should be contextualized and approached in light of the individual's personal goals and preferences (Staring et al., 2013).

Second, (non)-adherence behaviours may not be congruent with existing (non)-adherence attitudes, and although related to each other they tend to present variable associations with other correlates/predictors (see Hui et al., 2016).

Third, psychosocial drivers such as internalized stigma and shame have been found to be highly prevalent among individuals with psychosis (Gerlinger et al., 2013) and to be associated with negative clinical and psychosocial outcomes (Yanos et al., 2008; Livingston and Boyd, 2010; Wood et al., 2017), including non-adherence (Yilmaz and Okanli, 2015). Internalized stigma has been associated with shame (Wood et al., 2017), negative attitudes towards medication (Feldhaus et al., 2018), fear of

rejection/discrimination, diagnosis/symptoms concealment and delayed healthcare seeking (Thornicroft, 2008; Brain et al., 2014), with studies suggesting that non-adherence might be conceived as a defensive strategy against stigma and perceived threats to self-worth (Tranulis et al., 2011).

In order to overcome some of the limitations presented and allow a better understanding of non-adherence, our study aimed to develop and explore the structure and psychometric properties of a new measure designed to address behavioural patterns and barriers to antipsychotic medication adherence as well as psychosocial factors such as stigma and shame.

Methods

Scale Development

The Antipsychotic Medication Adherence Scale (AMAS) was designed to measure medication adherence in individuals with psychotic spectrum disorders. Item development was conducted by a multidisciplinary team and was based on a review of the main predictors of medication adherence, existing scales, as well as on clinical experience regarding its assessment and management. The scale evolved from multiple drafts and experts in the field were asked to provide feedback regarding several aspects of the items' content (e.g., clarity, relevance). Their comments and suggestions were then discussed by the research team and minor adaptations to the items were made.

The final version of the scale ended up with 13 statements tapping into clinical (e.g., "When I take this medication, I can think in a clearer manner"), psychosocial (e.g., "I'm ashamed of taking this medication") and practical factors (e.g., "I find it difficult to take the medication as recommended by the doctor") recognized as key predictors of medication adherence. Participants are invited to rate the extent to which they agree with each statement using a 5-point Likert scale from 0 (completely disagree) to 4 (completely agree). This scale is designed for higher results to reflect greater adherence to antipsychotic medication.

Participants

The sample consisted of 170 participants (118 males; 69.4%) with a psychosis-spectrum disorder diagnosis (according to DSM-5 criteria), including schizophrenia (73.9%), mood disorder with psychotic features (8.9%), schizoaffective disorder (7.6%),

psychosis not otherwise specified (2.5%), substance-induced psychotic disorder (3.2%), schizophreniform disorder (1.9%), and brief psychotic disorder (1.9%).

Participants' age ranged between 19 and 68 years, with a mean age of 34.28 years ($SD = 10.46$) and they presented an average of 11.59 ($SD = 3.87$) years of education. The majority of the sample was single ($n = 131$; valid percent 79.9%). Regarding their professional status, almost half of the participants ($n = 63$; valid percent 39.4%) reported being employed at the time of the evaluation. The remaining were unemployed ($n = 45$; 28.1%), student or in professional training ($n = 24$; 15%), retired due to age/disability ($n = 23$; 14.5%), in occupational therapy ($n = 4$; 2.5%), and one participant reported not had worked in the past.

A small subset of these patients ($n = 45$) also completed the Medication Adherence Rating Scale (MARS) in order to assess AMAS convergent validity.

Procedure

All procedures received approval by the Ethics Committees of the involved institutions and followed the international ethical and deontological guidelines. Participants were recruited from five hospital centres. Participants' referral was performed by their psychiatrist according to the following inclusion criteria: satisfying the DSM-5 diagnostic criteria for a psychotic spectrum disorder, age above 18 years old, and ability to comprehend and answer the questionnaires. Before enrollment, patients were informed about the study's objectives as well as the voluntary, anonymous and confidential nature of their participation. After this brief explanation, those who agreed to participate in the study were asked to give their written consent. Subsequently, a battery of self-report measures aimed at collecting sociodemographic and clinical data, and evaluating medication adherence, was administered to the participants.

Measures

The Antipsychotic Medication Adherence Scale (AMAS) is described above.

The Medication Adherence Rating Scale (MARS; Thompson et al., 2000; Portuguese version by Vanelli et al., 2011) is a 10-item self-report scale of medication adherence. It derives from two independent scales assessing medication adherence attitudes and behaviours, namely the Drug Attitudes Inventory (DAI; Hogan et al., 1983) and the Medication Adherence Questionnaire (MAQ; Morisky et al., 1986). Individuals are asked

to indicate, using a dichotomous rating scale of yes/no, whether each question/statement applied to them. A total score can be calculated through the sum of the items, with values ranging from 0 to 10. Higher scores indicate greater levels of adherence.

Factor analysis has supported a three-factor structure, specifically: medication adherence behaviour, attitude toward taking medication and negative side-effects. Both the original study (Thompson et al., 2000) and a large-sample validation study (Fialko et al., 2008) demonstrated the scale to have acceptable psychometric properties ($\alpha = .60$). The Portuguese version of the scale also shown an acceptable internal consistency ($\alpha = .75$) and a favourable test-retest reliability ($r = .76$). In our study, we found an internal consistency of $\alpha = .60$.

Analytic strategy

AMAS' structure was examined through an exploratory factor analysis computed with Mplus, Version 7 (Muthén and Muthén, 1998-2011). Given the possible correlation among factors that might emerge, and as recommended (Fabrigar et al., 1999), an oblimin rotation was applied. The number of factors to retain was determined using parallel analysis. The global goodness-of-fit of the model was ascertain through the reference values for the Chi-Square ($p < 0.05$) and normed Chi-square (χ^2/df) which is less sensitive to sample size (lowest value possible, ranging between 2 to 5 – Bollen, 1989; Wheaton et al., 1977; Tabachnick and Fidell, 2007), the Comparative Fit Index (CFI ≥ 0.95), the Standardized Root Mean Square Residual (SRMR ≤ 0.09), and the Root-Mean Square Error of Approximation (RMSEA ≤ 0.06) (Hu and Bentler, 1998).

Preliminary analyses regarding the adequacy of the data were performed prior to factor analysis. Given the non-normal distribution of the data (Mardia's multivariate skewness = 25.592; $p < 0.001$; Mardia's multivariate kurtosis = 211.537; $p < 0.001$), we chose to use the Robust Maximum Likelihood (MLR) estimation method. As recommended, items presenting cross-loading values greater than .32 were excluded (Tabachnick and Fidell, 2007).

Descriptive statistics and correlation analyses were conducted using the SPSS v. 21 (IBM, Armonk NY, USA). Cronbach's alpha, alpha if item deleted and corrected item-total correlations were used to determine the reliability of the AMAS. Composite Reliability was computed to assess the construct validity of the scale, with values above .70 indicating an acceptable reliability (Fornell and Larcker, 1981). Additionally, Spearman correlations coefficients with the MARS were assessed to determine AMAS' convergent validity.

Correlation coefficients were interpreted according to the benchmark values proposed by Cohen (1988), specifically: .10 to .30 (weak), .30 to .50 (moderate), and above .50 (strong).

Results

Exploratory Factor Analysis

An exploratory factor analysis was conducted to ascertain AMAS' structure. Prior to factor analysis, a parallel analysis was conducted to determine the number of factors to retain. Results indicated a two-factor solution.

An inspection of the global adjustment indices confirmed the goodness-of-fit of the model. The Chi-square test proved significant ($\chi^2(53) = 102.042$, $p < 0.001$). Such result is not surprising since it is widely recognized that this test is influenced by many factors, including sample size (Bollen, 1989). In order to minimize this bias, normed Chi-square (χ^2/df) was also calculated, with values showing an acceptable fit (< 2). Both CFI and SRMR presented values within the recommended (CFI = 0.891 and SRMR= 0.053), indicating an acceptable model fit (Hu and Bentler, 1998). A similar pattern was found for RMSEA, which revealed a value of 0.074 with a 90% confidence interval between 0.052 and 0.095. No relevant cross-loadings were found for any item.

Thus, the final structure of the scale encompasses a total of 13 items organized into 2 factors which were named "Barriers to adherence" (Factor 1) and "Positive beliefs about medication" (Factor 2) on the basis of the item's content. Corresponding item loadings for each factor can be seen in Table 1. No significant correlation was found between Factor 1 and Factor 2 ($r = .09$; $p > .05$).

Reliability and convergent validity

Means and standard deviations for all items as well as internal consistency results are listed in Table 2. AMAS showed an acceptable internal consistency for Factor 1 and Factor 2 with alpha values of 0.72 and 0.80. As can be seen in Table 2, moderate-to-high ($r \geq .30$ and $r \leq .67$) corrected item-total correlations were found for all items. Moreover, results showed that most items presented a Cronbach value higher than the alpha and that their removal would reduce the internal consistency of AMAS factors. The only exception was for items 2 and 6. We have decided however to maintain these items based on two reasons. The first reason is the preliminary and exploratory nature of this study and the need to replicate and confirm the factorial structure in other independent samples. Second, the exclusion of items 2 and 6 would lead to a negligible enhancement of the alpha, which

would increase from .80 to .81 and .72 to .75, respectively. Factor 1 and 2 both showed adequate values of CR (.81 and .74, respectively).

Results showed a significant association between both AMAS factors and MARS total score. The strength of this association was stronger for Factor 1 ($r = .55$, $p < 0.01$) than for Factor 2, which presented a moderate correlation coefficient ($r = .37$, $p < 0.05$).

Table 1
Item loadings for each factor

Items	Factor 1	Factor 2
AMAS 1	-.015	.694*
AMAS 2	.322*	-.136
AMAS 3	.412*	-.039
AMAS 4	.770*	.084
AMAS 5	.035	.661*
AMAS 6	-.150*	.454*
AMAS 7	.611*	-.041
AMAS 8	.691*	-.041
AMAS 9	.025	.757*
AMAS 10	.539*	-.143
AMAS 11	.720*	.055
AMAS 12	.464*	.132
AMAS 13	.515*	-.082

Note. *Loadings are significant at 5% level.

Table 2
Means (M), standard deviations (SD), corrected item-total correlations (r), alpha if deleted, and Cronbach's alpha (α) for AMAS items (n = 170)

Items	M (SD)	r	α
Factor 1 – "Barriers to adherence"			.80
Item 2. The negative effects of this medication are always present (rs)	1.87 (1.36)	.30	.81
Item 3. It bothers me that others know that I take this medication (rs)	1.95 (1.54)	.37	.80
Item 4. Sometimes when I feel better I stop taking the medication (rs)	1.39 (1.62)	.67	.76
Item 7. When I take this medication it's like I'm not myself (rs)	1.66 (1.55)	.55	.78
Item 8. I'm ashamed of taking this medication (rs)	1.69 (1.62)	.65	.76
Item 10. It's the same whether I take this medication or not. (rs)	1.86 (1.56)	.47	.79
Item 11. I find it difficult to take the medication as recommended by the doctor (which pills, at what time…) (rs)	1.32 (1.57)	.63	.77
Item 12. It bothers me when my medication is changed (rs)	1.57 (1.52)	.39	.80
Item 13. I plan to stop this medication when feeling better. (rs)	1.97 (1.64)	.44	.79
Factor 2 – "Positive beliefs about medication"			.72
Item1. My medication has more positive effects than negative ones	2.86 (1.18)	.59	.62
Item 5. When I take this medication, I can think in clearer manner	2.24 (1.41)	.52	.66
Item 6. This medication does not appear to have any positive effects. (rs)	2.86 (1.35)	.36	.75
Item 9. Taking this medication prevents relapses	2.92 (1.29)	.61	.61

Note. (rs) item reversely scored.

Discussion

Given the prevalence and clinical consequences of antipsychotic non-adherence in people with psychosis and considering the growing evidence of the role subjective person-related psychological factors play in the (non)-adherence continuum, assessing antipsychotic adherence from a holistic and comprehensive perspective is essential in both clinical and research settings. AMAS is a new brief self-response instrument designed to assess several aspects of antipsychotic adherence in people with psychosis.

Two factors emerged from the exploratory factor analysis. The first factor – "Barriers to adherence" – evaluates the influence of different types of barriers to medication adherence. a) practical and medication-related barriers, such as the level of tolerance patients have regarding changes in medication, prescribed dosage and frequency, and presence of unwanted and unpleasant side effects; b) cognitive, for instance, the degree to which patients perceived the effects of the medication as neutral; c) behavioural, including items regarding the intention to stop taking the medication (in the past and future); and d) emotional, such as the levels of shame felt due to taking medication. This factor was reversed scored in order to perform psychometric analysis (thus measuring fewer barriers), nevertheless, if considered useful for research or clinical aims, it can be scored directly assessing the negative influence of barriers to antipsychotic adherence. The second factor – "Perceived positive effects" – assesses at which degree participants consider their medication to be beneficial, in general, and specifically in preventing relapse and making thought processes clearer.

These factors, obtained from exploratory factor analysis, highlight the AMAS's construct validity, given their relation with important variables underpinning antipsychotic adherence. In fact, complexity of medication regimen, belief that treatment is not necessary in remission phases, treatment side effects (Acosta et al., 2012; Higashi et al., 2013; Sendt et al., 2015), internalized stigma, fear of stigma/rejection associated with mental illness and medication (Yilmaz and Okanli, 2015), shame (Wood et al., 2017) [included in Factor 1], beliefs about medication efficacy and benefits (Acosta et al., 2012; Higashi et al., 2013) [included in Factor 2], have all been pointed out as influencing treatment adherence. The fact that the first factor includes such different items (e.g. emotional such as shame on one hand and practical issues and non-adherence behaviours on the other) might be explained by previous research suggesting that, subjectively, non-adherence might represent a strategy to prevent (self)stigma and improve self-esteem (Tranulis et al., 2011).

Both factors were not associated with each other. This seems to indicate that cognitions about the perceived positive effects of medication are independent of any practical aspects concerning medication intake, perceived negative or neutral effects of the medication and feelings of shame due to medication. In fact, the perception of positive effects of medication might co-exist with perceived negative side effects and feelings of shame regarding medication.

Regarding reliability, both Cronbach's alphas and composite reliability values were adequate in both factors.

We evaluated convergent validity through exploring associations between AMAS factors and a convergent measure of adherence (MARS). Both AMAS factors were associated (moderately) with the total score of the MARS indicating adequate convergent validity, with scales measuring associated, but independent, constructs (as expected given AMAS involves variables not included in the MARS).

Some limitations of the present study should be considered. First, the sample size was relatively small and non-representative, particularly the subsample used for convergent validity, which may impede results generalizability. Future studies should replicate these findings and expand the AMAS study (e.g. sensitivity to change, invariance across diagnosis) in larger, representative and non-Portuguese samples. Specifically, the AMAS structure should be further explored and the hypothesis of a higher order factor (general adherence) could be tested. The reliability for the overall scale was adequate ($\alpha = .73$). Nonetheless, since the second order model was not tested here and considering the non-significant association between the factors, we are not able to recommend the use of AMAS as a unidimensional measure at this moment. On the other hand, the low percentage of participants in each diagnostic category did not allow for comparisons between specific psychotic disorders.

Another important aspect to be tackled in future studies is the association between AMAS and variables known to be associated with medication adherence, such as (subjective) recovery, insight, clinical symptoms, and cognitive deficits, among others (e.g., Acosta et al., 2012: Higashi et al., 2013; Sendt et al., 2015). Longitudinal studies assessing either AMAS's temporal stability (when symptomatology and psychopharmacological treatment stable) or sensitivity to treatment are also needed to further explore the scale's clinical utility.

Taking into account that the Portuguese validation of the MARS did not test the three-factor model and presented results considering the total scale (Vanelli et al., 2011)

we were not able to assess convergent validity using the three factors. Future studies should both confirm the MARS three-factor structure and evaluate associations among MARS and AMAS factors.

Our findings have both research and clinical implications. Although these results need further replication, AMAS could prove to be a useful assessment tool for evaluating medication adherence in individuals with psychosis. The importance of a first-person perspective in studies with psychotic patients has been recently stressed and recovery-based models advocate the inclusion of the patient as an active agent in the therapeutic process (Leamy et al., 2011). Although there are some variables that might influence the accuracy of self-reported adherence, the existence of a brief, pragmatic, valid, and reliable measure of medication adherence adapted for people with psychosis might be of great clinical use from this framework's perspective. Also, the fact that AMAS allows participants to evaluate their level of agreement on a Likert-type scale instead of a dichotomous yes/no response might bring advantages for both clinical and research settings. Furthermore, considering that AMAS comprises different aspects of adherence (practical, psychosocial, perceived negative, neutral and positive effects), including psychosocial factors not often measured in adherence scales, medication adherence, known to be a multidimensional continuum, might be assessed in a more holistic way. Bearing in mind that adherence has been considered a useful aim only when viewed within the context of achieving life goals and improved quality of life and social interactions (Staring et al., 2013), a scale including aspects associated with social rank variables (e.g. shame and stigma) and assessing barriers to adherence (internal and external as previously suggested – e.g. Moitra and Gaudiano, 2016) might be valuable as a part of a research and/or clinical assessment protocol.

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A pilot study of the Portuguese version of the Voices Acceptance and Action Scale:

Psychometric properties in a clinical sample with psychosis-spectrum disorders

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A pilot study of the Portuguese version of the Voices Acceptance and Action Scale: Psychometric properties in a clinical sample with psychosis-spectrum disorders

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Abstract

Given the recent interest in acceptance-based interventions for psychosis, it has been recommended that coping with voices mechanisms, namely experiential acceptance, are routinely assessed in clinical and research settings. The Voices Acceptance and Action Scale (VAAS-12) is a self-report measure developed to specifically assess acceptance-based or action-based beliefs in relation to verbal auditory hallucinations. This study aimed to translate, adapt and study the psychometric properties of the Portuguese version of the VAAS-12 in a clinical sample within the psychosis-spectrum disorders. The VAAS-12 was translated and adapted to Portuguese. Its psychometric properties were then studied in a sample of fifty-four male participants, mostly single, unemployed, and with a last week voice hearing experience. Confirmatory analysis was performed for the one-factor and two-factor structure suggested for the VAAS in previous studies. Both had unacceptable fit indicators. Exploratory analysis then yields an alternative two-factor structure ("Non-interference and action" and "Acceptance and Life functioning" subscales) with adequate fit. Adequate internal consistency and construct validity were found, with the VAAS being negatively associated with perception of voices as hostile-dominant and resistance regarding voices. The VAAS-12 seems adequate to use in clinical and research studies, although further study is needed particularly regarding subscale "Acceptance and Life functioning".

Keywords: acceptance, committed action, assessment, psychometrics, psychosis

Resumo

Tendo em conta o interesse recente nas intervenções baseadas na aceitação para a psicose, tem sido recomendado que os mecanismos de *coping* com as vozes, nomeadamente a aceitação experiencial, sejam avaliados no contexto clínico e de investigação. A Escala de Aceitação e Ação em relação às Vozes (VAAS-12) é um instrumento de autorresposta especificamente desenvolvido para avaliar as crenças baseadas na aceitação ou na ação em relação às alucinações auditivo-verbais. O presente estudo tem como objetivo a tradução, adaptação e estudo das propriedades psicométricas da versão portuguesa da VAAS-12 numa amostra clínica dentro do espectro das perturbações psicóticas. A VAAS-12 foi traduzida e adaptada para Português. As suas propriedades psicométricas foram posteriormente estudadas numa amostra de cinquenta e quatro participantes do sexo masculino, maioritariamente solteiros, desempregados e com uma experiência de ouvir vozes na última semana. Foram realizadas análises fatoriais confirmatórias para as estruturas de um e dois fatores sugeridas em estudos prévios, sendo que ambas apresentaram índices de ajustamento inaceitáveis. A análise fatorial exploratória realizada posteriormente revelou uma estrutura alternativa de dois fatores ("Não interferência e ação" e "Aceitação e Funcionamento") que obteve ajustamento adequado. Foi encontrada adequada consistência interna e validade de constructo, tendo sido encontradas associações negativas com a perceção das vozes como hostis-dominantes e resistência em relação às vozes. A VAAS-12 parece ser adequada para uso em contexto clínico e de investigação, embora mais estudos sejam necessários particularmente no que diz respeito à subescala "Aceitação e Funcionamento".

Palavras-chave: aceitação, ação com compromisso, avaliação, psicometria, psicose

Introduction

The current work intended to translate, adapt and study the psychometric properties of an existing instrument that was developed to evaluated the acceptance and action beliefs in relation to general experiences of verbal auditory hallucinations (i.e., the 'Voices Acceptance and Action Scale' – VAAS, Shawyer et al., 2007). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5; APA, 2013) defines hallucinations as "perception-like experiences […] without an external stimulus […] not under voluntary control", occurring in "any sensory modality", although "usually experienced as voices […] perceived as distinct from the individual's own thoughts" (p. 87). Verbal auditory hallucinations (referred to 'voices' hereafter) are conceptualized as existing in a continuum, ranging from sporadic, non-distressing and non-problematic experiences to severe, frequent, and highly distressing symptoms, usually associated with other psychiatric disorder criteria (e.g. Goldstone, Farhall & Ong, 2012), particularly those within the psychosis-spectrum. This spectrum can be used as a clinical entity or generic diagnostic term because it covers a set of severe conditions (e.g. schizophrenia, schizoaffective disorder, mood disorder with psychotic features) that may include difficulties in five domains of psychopathology: hallucinations, delusions, disorganized thought (speech), disorganized or abnormal motor behaviour and negative symptoms (American Psychiatric Association, 2013).

Cognitive approaches to voices argue that the interference caused by hearing voices is not directly and unequivocally associated with their presence, content or characteristics (Chadwick & Birchwood, 1994). Instead, distress may arise from a counterproductive relationship with voices, characterized by automatically reacting to their presence by trying to avoid, change, fight and resist them, all of which are forms of experiential avoidance (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). According to Shawyer, Thomas, Morris and Farhall (2013), the hearing voices experience is particularly susceptible to experiential avoidance and to interfering with moving towards one's valued life directions. In this regard, aspects as the experiences' intrusiveness and salience (driving attention towards them and evoking unpleasant emotional responses), verbal content (leading to possible cognitive fusion mechanisms) and interpersonal qualities may be particularly relevant.

Studies have found that coping strategies based on avoidance of private experiences predict negative outcomes such as increased frequency of auditory hallucinations (although not when controlling for paranoia), as well as of their severity and associated distress

(Varese, Udachina, Myin-Germeys, Oorschot, & Bentall, 2011). Goldstone, Farhall, and Ong (2012) found experiential avoidance to be a relevant process in predicting ongoing hallucinations in a psychotic sample, although not when considering auditory hallucinations specifically. Also, Jones and Fernyhough (2009) found an important role of experiential avoidance strategies (i.e., thought suppression and rumination) in predicting hallucination-proneness. Alternatively, several authors propose acceptance as a mechanism through which people who hear voices may protect themselves from developing a clinical disorder (Vilardaga, Hayes, Atkins, Bresee, & Kambizc, 2013). Experiential acceptance has predicted diminished behavioural and emotional resistance to voices (Morris, Garety, & Peters, 2014).

Despite the impact that these constructs may have on psychopathology, their role as coping with voices mechanisms does not seem to be routinely assessed in clinical and research settings (Ratcliff, Farhall, & Shawyer, 2010). Several authors thus recommend the assessment of experiential acceptance (Vilardaga et al., 2013), specifically of voices. Several measures have been developed in the last decades aiming at assessing different aspects (e.g., severity, frequency, beliefs, distress, coping, perceived power, or relationships with the self) of auditory hallucinations in general and voice hearing in particular (for a review see Ratcliff et al., 2010). Nevertheless, there is only one measure specifically developed to assess acceptance of the voice hearing experience and acting with commitment independently of the voice's presence – the 'Voices Acceptance and Action Scale' (VAAS – Shawyer et al., 2007).

The VAAS is a self-report measure developed to specifically assess acceptance-based or action-based beliefs in relation to auditory hallucinations (i.e., detached acceptance of auditory hallucinations while acting effectively towards one's goals; Shawyer et al., 2007). Inspired mainly by the theoretical framework of Acceptance and Commitment Therapy (ACT; Hayes et al., 2006), the VAAS also considered research on thought suppression and includes ideas from the acceptance perspective of Romme and Esher (1989), who note taking responsibility for actions and understanding voices as a part of life although different from the self. The final version of the scale comprised 31 items divided in Section A, which is a stand-alone 12-item scale measuring acceptance and action related to auditory hallucinations in general, Section B1, referring to committed action in relation to hearing command hallucinations, and Section B2 that mixed acceptance and action items regarding behavioural and emotional responses to potentially harmful command hallucinations. The standalone scale (Section A) has been the most widely

studied section of the VAAS and has been also called VAAS-12. It comprises nine acceptance items and three action items, and is intended for persons experiencing voices of any kind, independent of voice's content (not exclusively command voices).

With a sample of 41 patients with a psychosis-spectrum diagnosis experiencing distressful and interfering medication-resistant command hallucinations, Shawyer and collaborators (2007) found acceptable internal consistency for the VAAS-12 total and the two subscales (i.e., acceptance and action) with Cronbach's alpha ranging from .76 to .85 and test-retest reliability values ranging from .72 to .82. They also found associations between the VAAS and depressive symptoms, quality of life, and confidence in coping with voices, some of large magnitude. Both subscales were associated with each other and with beliefs about voices. The action subscale successfully discriminated between patients reporting compliance with voices from patients denying having complied with them in the last 6 months. It was found that the VAAS added significant explanation to the prediction of depressive symptoms, coping with command hallucinations, and quality of life beyond the predictive role of beliefs about voices (Shawyer et al., 2007). In a less severe, more heterogeneous and representative voice hearers sample (i.e., 40 outpatients with a schizophrenia or schizoaffective disorder diagnosis) the VAAS-12 also showed adequate internal consistency for the total scale (α = .81) and significant associations with beliefs about voices, negative affect, thought control strategies, depressive symptoms, anxiety, and stress (Brockman, Kiernan & Murrell, 2015).

Considering the adequate psychometric properties of the VAAS-12, its briefer nature and its wider applicability and clinical utility as a general scale for voices independent of voices' content (i.e., not restricted to command hallucinations), the present study aims to translate, adapt and study its psychometric properties in a sample of Portuguese participants with a diagnosis of a psychotic-spectrum disorder. In order to fulfill these aims this study followed a non-analytic/descriptive, cross-sectional study design.

Method

Participants

The inclusion criteria for the participation in the present study included: a) the past or present presence of auditory/ verbal hallucinations, either command or other types, b) a diagnosis of a non-affective psychosis, c) aged 18 years old or more, d) absence of severe

cognitive deficits, as assessed informally by the patients' psychiatrists. The exclusion criteria included severe symptomatology that might impede participation, as assessed informally by the patients' psychiatrists. The present study enrolled 54 male participants. Sociodemographic and clinical characteristics of the sample can be consulted in Table 1.

Table 1
Sample's sociodemographic and clinical characteristics

	Total sample ($n = 54$) *M (SD)* / %
Sociodemographic variables	
Age	34.90 (10.18)
Years of Education	9.94 (3.36)
Marital Status	
Single	90.4%
Married	1.9%
Divorced	5.8%
Widow	1.9%
Working Status	
Employed	25%
Unemployed	48.1%
Retired	19.2%
Student	7.7%
Clinical variables	
Diagnosis	
Schizophrenia	87.8%
Psychosis not otherwise specified	10.2%
Schizophreniform disorder	2%
Last Time - Verbal Auditory Hallucinations	
Last week	38.6%
1 Week – 1 Month	13.6%
1 Month – 3 Months	11.4%
4 Months – 6 Months	6.8%
Over 6 Months	29.5%
Age at treatment onset	24.78 (8.47)
Number of hospitalizations	
No hospitalizations	4%
1 hospitalization	40%
2 hospitalizations	14%
3 hospitalizations	24%
≥5 hospitalizations	18%

Only a subsample ($n = 29$) filled in the Beliefs about voices Questionnaire-Revised (Chadwick, Lees, & Birchwood, 2000), in order to test for the construct validity of the VAAS-12.

Measures

Voices Acceptance and Action Scale (VAAS; Shawyer et al., 2007).

The VAAS was developed to assess acceptance-based or action-based beliefs in response to auditory verbal hallucinations, in general and specifically to command hallucinations. This 31-item scale is divided into section A (i.e., 12 item stand-alone scale for general auditory hallucinations) and section B, referring specifically to command hallucinations. The participant is asked to rate their opinion from 1 'Strongly Disagree' to 5 'Strongly Agree', with higher scores meaning higher levels of acceptance and perception of acting according to one's valued life directions. In the present study, only the section A, stand-alone scale was used (i.e., VAAS-12). Preliminary results show evidence internal consistency (Shawyer et al., 2007; Brockman et al., 2015) and test-retest reliability (Shawyer et al., 2007) for the scores of both the total and the two subscales (i.e., acceptance and action) of the VAAS-12.

After permission for the study was obtained from the authors of the original version of the VAAS, the research team proceeded with the translation to the Portuguese language of the VAAS-12. The major concern at this stage was to maintain content equivalence between the Portuguese and the original versions. The draft was then sent to a bilingual researcher who was also a psychologist with therapeutic expertise, and who provided the team with a back translation. The back translation was compared with the original version by the research team and also sent to the authors of the original instrument for evaluation. No changes were deemed necessary to the Portuguese version of VAAS12 at this stage.

Beliefs about voices Questionnaire-Revised (BAVQ-R; Chadwick et al., 2000).

This 35item scale was developed to evaluate beliefs people hold about verbal auditory hallucinations and their associated emotional and behavioural responses. The participants rate their agreement with each item using a four-point Likert scale in relation to their dominant voice. Chadwick et al. (2000) report five subscales: three concerning beliefs about the voice ("malevolence", "benevolence", and "omnipotence") and the other two regarding behavioural responses ("resistance" and "engagement"). The scale has shown good internal reliability, with alphas ranging from 0.74 to 0.88. Construct validity was examined and strong relationships between the subscales and depressive and anxious symptoms were found (Chadwick et al., 2000). The Portuguese version (Barreto-Carvalho et al 2018) found a four-factor structure ("malevolence" and "omnipotence" being fused in only one subscale: hostile-dominance) that was a good fit to the data. In the Portuguese

validation study, adequate internal consistency values were found for all subscales (i.e., α between .80 and .92).

Procedure

Sample collection.

The sample was collected in five Portuguese hospital centres located in the north and center regions of Portugal, after all procedures were approved by the hospitals' ethics committees. Participants were recruited after referral from their psychiatrists. In an individual session with one of the researchers, a brief description of the nature and objectives of the study was given and all questions were clarified. Confidentiality and anonymity were assured. Upon their agreement to participate, participants were asked to sign an informed consent form based on the Declaration of Helsinki. Participants were then given the self-report questionnaires that took approximately 30 minutes to complete. Participants were asked to answer the questions regarding the usual way they respond to voices when they hear them. Whenever participants had not had auditory verbal hallucinations in the last week time frame, instructions were given for them to focus on the period when the verbal hallucinations occurred. Participants were instructed to respond without reflecting excessively on the answers and were told that there are no 'right or wrong' answers, as ways of reducing the probability of responses driven by social desirability motives. In order to guarantee the validity of responses, one member of the researcher team with clinical expertise was present during the assessment and helped the participants, whether when difficulties in understanding the constructs or specific questions emerged or when the participant required a break, by allowing it or even suggesting one if participants showed signs of fatigue.

Data analysis

Confirmatory factor analyses (CFA) were initially performed to test the one-factor and two-factor structures of the VAAS-12 that had been proposed before (i.e., two-factors and one total scale; Shawyer et al., 2007). Following the results of the CFA, exploratory factor analysis was performed. Considering that our data was not multivariate normal (Mardia's multivariate skewness statistic = 50.77; $p < .01$; Mardia's multivariate kurtosis statistic = 178.19; $p = .04$) and that the response scale used five ordinal points, the Maximum Likelihood Robust estimator was used for all confirmatory and exploratory analyses, given that is has performed well with non-normal ordinal data (Li, 2016). To

assess model fit, we first used the chi-square goodness-of-fit. A non-significant chi-square is desired as it suggests that the reproduced and observed covariance matrices do not differ significantly; hence, the data fits the proposed model structure (Kline, 2011). Moreover, the guidelines provided by Hu and Bentler (1999) were taken as indications of goodness of fit of the measurement models under analyses. Specifically, the model was considered a good fit for the data if Standardized Root Mean Residual (SRMR) ≤ .09, combined with either Root Mean Square Error of Approximation (RMSEA) ≤ .06 or with Comparative Fit index (CFI) ≥ .95. The confirmatory and exploratory factor analyses were carried out using the Mplus, Version 7 software (Muthén & Muthén, 1998-2011).

After having established the best fitting measurement model, it was further explored via descriptive statistics and internal consistency. Given previous findings on the vulnerabilities of the Cronbach Alpha, particularly when the item's distribution is asymmetrical (Trizano-Hermosilla & Alvarado, 2016), we used the Guttman's Lambda-2 as indicative of the measures' internal consistency, with values higher than .70 being considered acceptable[3]. Finally, the construct validity of the VAAS-12 was analysed via correlation analyses of its scores with the scores of a measure of beliefs about voices heard (i.e., BAVQ-R). Convergent validity would be indicated by the emergence of associations between the VAAS and BAVQ-R subscales, since the beliefs regarding the valence of voices (e.g. hostile-dominance) might be associated with lower/higher levels of experiential acceptance. The reactions to voices (e.g. resistance) might be seen as strategies based on experiential avoidance (motivated by the lack of experiential acceptance). These analyses were performed in IBM SPSS Statistics for Windows, Version 20.

Results

Validity evidence based on internal structure

Confirmatory Factor Analysis.

In accordance with indications from previous studies (Brockman et al., 2015; Shawyer et al., 2007) for the use of either a one-factor or a two-factor ('action' – items 3, 7 and 12; and 'acceptance' – the other items) structure, we performed a one-factor and a two-

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[3] Please note that, for those same reasons, this same internal consistency indicator was used to calculate the internal consistency of the BAVQ-R as used with the current sample.

factor CFA on our data. For the one-factor structure, the chi-square goodness-of-fit was significant ($\chi^2_{(54)} = 107.01$, $p < .001$), and the global fit indices also indicated a poor model fit (RMSEA = 0.14, 90% IC = 0.10- 0.17; CFI = 0.65; SRMR = .13). Similar results were found for the proposed two-factor structure ($\chi^2_{(53)} = 106.76$, $p < .001$; RMSEA = 0.14, 90% IC = 0.10-0.18; CFI = 0.64; SRMR = .13).

Exploratory Factor Analysis.

Considering the possibility of a different factor structure for the Portuguese population and taking into account the absence of a previous dimensional study of the VAAS-12, we proceeded with Exploratory Factor Analysis. According to parallel analysis, the best solution was a two-factor structure, in which items 2 and 5 ("*There are worse things in life than hearing voices*" and "*My voices are just one part of my life*") were, nonetheless, eliminated due to their non-significant loading on either of the factors. Then, a two-factor 10-item solution presented acceptable fit to our data ($\chi^2_{(26)} = 31.03$, $p = .23$; RMSEA = 0.06, 90%IC = 0.00- 0.13; CFI = 0.96; SRMR = 0.05). Item loadings on each factor are presented in Table 2. The two-factors were not significantly correlated ($r = .15$, $p = .28$).

The first factor, which, after looking into the content of the items we named 'Non-interference and Action', reflects the intention to move towards valued life directions, giving up the 'control agenda' and promoting the non-interference of voices in ones' life. The second factor, which we named "Acceptance and Life functioning", intends to measure an accepting way of dealing with voices. High scores indicate the use of adaptive strategies in dealing with voices and the ability to separate the voice hearing experience from the self (i.e., non over identification with the content of voices) and from the person's life.

Reliability

The "Non-interference and Action" presented a good internal consistency value. The internal consistency value for "Acceptance and Life functioning", which includes only four items, was borderline adequate. Table 2 presents results regarding item statistics, item-total correlations and internal consistency for each subscale[4].

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[4] For the interested reader, and given that the Cronbach alpha value is the most widely used method for estimating internal consistency, Cronbach alpha values were .83 for the "non-interference and action" factor and .64 for the "acceptance and life functioning" factor. Though, based on our results, we do not suggest the use of a complete scale measure, for comparison purposes in relation to the original version of the VAAS-12, the Lambda-2 Guttman for the total scale was .77 and Cronbach alpha value was .73, which changes to .66 by deleting item 6 at its lowest value and to .75 by deleting item 11 at its highest value.

Table 2

Item loadings and descriptive value per factor, corrected item-total correlation values and internal consistency values

		Factor 1	Factor 2	*M*	*DP*	Corrected item-total correlation
Factor 1: Non-interference and action (Guttman Lambda 2 = .84)						
3	When I disagree with a voice, I simply notice it and move on	.34*	.26	3.41	1.35	.36
4	There is no point getting on with my life while I hear voices (r)	.83*	.02	3.11	1.48	.74
6	I can't have a good life while I hear voices (r)	.82*	.12	2.52	1.37	.77
7	My voices stop me doing the things that I want to do (r)	.83*	-.01	2.91	1.32	.75
8	Hearing voices has taken over my life (r)	.52*	-.14	3.06	1.47	.46
10	I struggle with my voices (r)	.69*	-.16	2.30	1.34	.51
Factor 2: Acceptance and Life functioning (Guttman Lambda 2 = .66)						
1	I accept the fact that I hear voices	-.07	.57*	3.46	1.44	.42
9	I have learned to live with my voices	.01	.86*	3.50	1.56	.57
11	There is more to me than just my voices	-.27	.41*	4.28	0.92	.33
12	When my voices say things, I accept what is helpful and reject what is not	.02	.49*	3.32	1.30	.39

Note: (r) = reversed scoring. *Significant at 5% level.

Evidence based on the relations with other variables

In the present study ($n = 29$) the Guttman's lambda-2 values for the BAVQ-R were .75 for hostile-dominance, .90 for benevolence, .78 for engagement, and .88 for resistance, indicating that it may serve as a consistent measure upon which to study construct validity. Spearman correlations results found between the two measures of the Portuguese VAAS-12 and measures of beliefs about voices that can be seen in Table 3. Overall, moderate to strong (negative) associations of those two measures with negative perception of voices' intent (i.e., Hostile-dominance) were found, as well as with the behavioural response of resisting voices.

Table 3
Spearman correlations values between the two subscales of the VAAS-12 factors and measures of beliefs about voices

	BAVQ-R ($n = 29$)			
	Benevolence	Hostile-Dominance	Resistance	Engagement
VAAS-12				
Non-interference and Action	.11[ns]	-.55*	-.66**	.25[ns]
Acceptance and Life functioning	.18[ns]	-.53*	-.45*	.06[ns]

Note. VAAS = Voices Acceptance and Action Scale; BAVQ = Beliefs about Voices Questionnaire – Revised; ns = non-significant. *Significant at the $p < .05$ level; **Significant at the $p < .001$ level.

Discussion

Considering the need for psychometrically sound instruments for assessing the voice hearing experience from a contextual behavioural science framework, the present study sought to continue and further explore the work presented by Shawyer et al. (2007) and Brockman et al. (2015) on the psychometric properties of the Voices Acceptance and Action Scale (Section A – 12 items) in a Portuguese sample diagnosed with psychotic spectrum disorders. The current our work went beyond previous works on the psychometrics of the VAAS-12, which had focused solely on its internal consistency, by also explicitly considering its internal structure and construct validity in relation to beliefs about voices.

Though we started with a confirmatory approach based on the measures that were proposed for the VAAS 12 (i.e., two-factor and one-factor models), we found no evidence of their adequacy to Portuguese data. Exploratory evidence favoured an alternative two-factor model in the current data, measuring "Non-interference and Action" and "Acceptance and Life Functioning". From a theoretical point of view, each of these two

factors seem to comprise constructs taken from both of the two major theories in which the original authors have based the VAAS, namely the Acceptance and Commitment Therapy framework (Hayes et al., 2006) and the Romme and Escher (1989) approach. The fact that these different theoretical backgrounds for sustained the development of different items may have influenced the division of such items in a factor structure that was different from what was expected and purported. Our proposed factor structure integrates different strategies of dealing with voices into two components, each encompassing beliefs linked both to experiential acceptance and to committed action, instead of separating these constructs in different factors, as originally hypothesized.

So, it seems that the theoretical basis for each factor was broadened within our two-factor measurement model. For example, the utility approach presented in item 12 (accepting helpful things voices say and rejecting the unhelpful) that was originally thought of as measuring 'action', may instead be conceptualized as an accepting, adaptive and functioning-focused way of thinking about/dealing with voices. Similarly, we do believe that 'struggle with voices' (item 10) can be understood as means of action against the interference/negative effects of voices, including the concept of experiential avoidance in its cognitive, emotional and behavioural facets. Nevertheless, this inversion of the item may not reflect experiential acceptance or integrating voices in the patients' life, perhaps because not struggling sometimes may mean resignation, giving up or enduring the experience instead of accepting it. Given the non-significant association between these factors, there seems to be evidence of them measuring different constructs, which cannot be explained only by the wording of the items (i.e., the fact that three out of 4 items in this scale are reversed scored).

The two-factor structure that emerged from the current data may be seen as an integration of both theoretical models that focus on what is valued by the voice hearers, in terms of coping with voices in a way that enriches their lives. Specifically, the "Non-interference and Action" is more associated with behavioural and cognitive beliefs aiming at reducing the interference and power of voices in people's life but also implies some degree of acceptance of voices as transient experiences that are different from reality, with people acting and taking control of their lives instead of reacting automatically to voices. "Acceptance and Life Functioning", in turn, reflects an adaptation to voices and an integration of voices in life and in the self, but also encompasses the ability to choose information from voices in terms of its utility, thus having a say in their influence in ones' life directions.

In terms of reliability, the "Non-interference and Action" scale presented good internal consistency, whereas the "Acceptance and Life functioning" scale presented poorer results. This may be due to 'acceptance' being a more abstract construct. Reflections on the separation of the 'self' from the voices (such as required in item 11 '*There is more to me than just my voices*') may be difficult for patients with possible impaired abstract thinking. On the other hand, affirmations on the direct acceptance of voices (item 1 '*I accept the fact that I hear voices*') may be confused with other processes such as resignation or enduring of voices, or simply may not grasp the complexity and conceptual meaning of experiential acceptance. Moreover, the four items that comprise this subscale seem to be measuring different parts of a positive and healthy approach to dealing with voices (i.e., acceptance in item 1, integrating voices as a part of life in item 9 and as part of the self in item 1,1 and the utility criteria for dealing with voices' content in item 12). Although clinically useful, this diversity may have had negative psychometric consequences, particularly concerning internal consistency.

Both subscales of the Portuguese version of the VAAS12 were negatively associated with the 'hostile dominance' evaluation of voices' intentions. The negative association between perceived omnipotence of voices and experiential acceptance as well as with disruption caused by voices has been previously reported (Morris et al., 2014). Studies have shown that hearing voices appraised as malevolent and/or omnipotent is associated with higher distress levels (Connor & Birchwood, 2013), and with the tendency to suppress or try to avoid difficult and frightening internal experiences (e.g. Hayes et al., 2006).

Negative and moderate to strong correlations were found between both subscales of the Portuguese version of the VAAS-12 and 'resistance' response to voices. The 'resistance' subscale refers to trying to stop/prevent the voice from talking or to distract the self from the voice. Distraction and cognitive suppression are known experiential avoidance strategies (Hayes et al., 2006) and therefore seem to be negatively associated with measures of movement towards a valued life, integration of voices as a part of life/self-experience, non-interference of voices in life, and adaptation mechanisms to deal with voices; all of these contents are portrayed in the two subscales proposed for the Portuguese version of the VAAS-12. In fact, these results are in line with previous studies indicating emotional and behavioural resistance to voices to be negatively associated with experiential acceptance (e.g. Morris et al., 2014).

Although theoretically expected, no correlations were found between the two subscales of the VAAS-12 and a more 'positive' account of voices, namely the perception

of them as benevolent and of engagement with voices. This might be a result due to our sample presenting lower levels of benevolence beliefs regarding voices. In fact, as stated in different studies (e.g. Chadwick, Barnbrook, & Newman-Taylor, 2007) these characteristics are less prevalent in clinical samples. Therefore, generalizations of these results should be done with caution.

There are some limitations to the present study that should be considered. Regarding the internal structure we proposed, although potentially useful and congruent with different theoretic perspectives on coping with voices, we understand it to be preliminary and in need for further study and replication. We did not have the sufficient sample size to test further hypothesis namely a higher order factor for psychological flexibility. Also, the small size and male-only sample may impede the generalizability of our results. Larger and more diversified samples are difficult to collect due to the prevalence of this phenomenon (e.g. low prevalence – APA, 2013) and to mechanisms associated with seeking for help (e.g. shame, stigma). Still, efforts should be made to test other properties of the VAAS-12 in larger samples, for instance sensitivity to change or invariance across specific diagnosis within the psychosis-spectrum. The VAAS-12 should also be tested comparing current voice hearers with people who are retrospectively remembering the voice hearing experience, since the self-report of retrospective accounts may have limitations, making new methods such as Experience Sampling Method more useful. Finally, considering the continuum hypothesis of the voice hearing experience, the assessment of VAAS-12 psychometric properties would benefit from data from both clinical and non-clinical samples.

In conclusion, the current work contributed evidence to the internal structure of the Portuguese version of the VAAS-12. This brief instrument measures several aspects of accepting voices and allows understanding of the usefulness/ non-usefulness of coping strategies that people may use to cope with the voice hearing experience. The VAAS-12 is a widely used instrument in acceptance-based clinical trials (e.g. Shawyer et al., 2012), though its psychometric features have scarcely been addressed, particularly within clinical samples. So, by adding evidence to that already collected by international research, the present study further confirmed the potential of the VAAS-12 for research and clinical purposes.

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Are shame and self-criticism the path to the pervasive effect of
social stress reactivity on social functioning in psychosis?

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2018

Are shame and self-criticism the path to the pervasive effect of social stress reactivity on social functioning in psychosis?

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Abstract

It is widely known that stress reactivity and social functioning difficulties are characteristic issues in people with psychosis. However, the specific impact of stress reactivity on social functioning and the underlying mechanisms is still less explored and studies yield inconsistent results. Social rank variables, such as shame and self-criticism, have been pointed out as relevant in the development, maintenance of several types of psychosocial suffering and, specifically, in psychotic disorders. This study's aim was to explore the associations between external shame, self-criticism, social stress reactivity and social functioning difficulties; and understand the mediator role of shame and self-criticism in the relationship between stress reactivity and social functioning. This study follows a cross-sectional design. Seventy-seven participants with a psychotic disorder filled in self-reported measures of stress reactivity, shame, and self-criticism and were clinically evaluated for social functioning. All variables under study were associated with each other and social stress reactivity predicted social functioning difficulties through external shame and self-criticism. The present study highlights the role of external shame and the mechanism to deal with it (self-criticism) in the pathway from stress reactivity to social impairment. These results might inform recovery-oriented interventions and reinforce the relevance of considering social competitive mentality when working with people with psychosis.

Keywords: shame, self-criticism, social functioning, social rank, psychosis, recovery

Practitioner Points

- Higher levels of external shame and self-criticism were associated with heightened stress reactivity and social impairment

- Social stress reactivity predicted social functioning difficulties through external shame and self-criticism

- Shame- and self-criticism-focused therapeutic interventions might be important for people with psychosis

Introduction

In conceptualizing recovery, authors have recommended the use of multidimensional definitions that comprise at least domains regarding both clinical remission (e.g. absence/remission/improvement of symptoms, no hospitalizations, low/no antipsychotic medication) and social functioning outcomes (e.g. living independently, employed or active, psychosocial functioning in normal range) (Jääskeläinen et al., 2013). Recovery as an outcome has long included psychosocial functioning and the achievement of social goals as indicators of therapeutic change and therefore, recommendations for psychosocial treatment for people with psychosis include targeting social isolation and promoting social support networks (National Institute for Health and Care Excellence [NICE], 2014). On the other hand, recovery as a process towards a meaningful life has been emphasized in the last few decades. Several definitions have been proposed stressing the importance of adding to the outcome-based, symptom-oriented definitions, subjective aspects such as the transformation of attitudes, values, goals, skills and roles (Anthony, 1993). A consensus panel of experts have established ten recognizable elements of recovery as a process: Self-direction, Individualized, Empowerment, Holistic, Nonlinear, Strengths-Based, Peer Support, Respect, Responsibility, and Hope (SAMHSA, 2005).

On the social facet of recovery as a multidimensional process, one of the proposed recovery processes is connectedness, which comprises aspects such as perceived support, relationships and being a part of the community (Leamy, Bird, Le Boutillier, Williams, & Slade, 2011). Social worth (self as having intrinsic value and the potential to contribute to the world) and lack of alienation (self as linked to fulfilling intimate relationships) are also anchors from which to assess personal recovery (Lysaker, Buck, Hammoud, Taylor, & Roe, 2006). Connecting with others, as described above, implies competencies of establishing

intimate relationships (e.g. caring and feeling cared for/reassured by others, letting go of social comparison and competition mentality, engaging with an affiliative mentality, cooperating and promoting group cohesion, among others). Therefore, these social outcomes are more complex than simple social interaction and might encompass subtler social processes that have the potential to be influenced by intrapersonal variables, such as the relationship people establish with themselves (e.g. critical versus reassuring). Congruently, on the intrapersonal aspect of recovery as a process, subjective aspects of recovery include a meaningful self-experience across a wide range of dimensions and relating to oneself in a more flexible and adaptive way envisioning richer and more empowered life (Lysaker, Glynn, Wilkniss, & Silverstein, 2010).

Stress reactivity as a predictor of difficulties in social functioning

Different predictors have been found considering different components of recovery (e.g. functional recovery) (Norman, MacDougall, Manchanda, & Harricharan, 2017) and several demographic, clinical, cognitive and neuroimaging variables were predictors of functional recovery (for a review and meta-analysis see Santesteban-Echarri et al., 2017).

It is known that people with psychosis present higher levels of reactivity to stress comparing to individuals from non-clinical populations (Lincoln, Köther, Hartmann, Kempkensteffen, & Moritz, 2015) with stress reactivity being suggested as a endophenotype for psychosis (Myin-Germeys & van Os, 2007). Myin-Germeys and collaborators (2003) found that people with psychosis, when compared to healthy controls, presented significantly larger increase in negative affect and decrease in positive affect in response to daily life stress (Myin-Germeys, Havermans, Nicolson, DeVries, Delespaul, Van Os, J. et al., 2003). Specifically, social stress (as encompassing several adverse social experiences, e.g. social marginalization, social defeat) has been proposed as affecting the brain systems usually associated with psychosis (Mizrahi, 2016).

Studies have long been exploring the role of stress reactivity in the development and exacerbation of psychotic symptoms. However, the specific impact of stress reactivity on social functioning psychosis is still less explored (Janssens et al., 2014). Janssens and collaborators (2014), in a longitudinal study, found preliminary evidence of the impact of both activity-related and event-related stress reactivity (measured at baseline) and social functioning (assessed at follow up) (Janssens et al., 2014). To our knowledge there are no studies regarding specifically stress reactivity to social situations and its direct or indirect

(through maladaptive coping/regulation strategies) impact on social functioning in people with psychosis.

Social rank: The role of shame and self-criticism in social stress-related difficulties

Research indicates that people with psychosis tend to perceive themselves as being of lower social rank and compare themselves negatively more often than controls. Furthermore, they have reportedly smaller social networks, are less satisfied with and feel more excluded by their peer group than matching controls (Allison, Harrop, & Ellett, 2013).

Social threats seem to be particularly related to the experience of shame. Shame is a self-conscious emotion (Tangney & Fischer, 1995) and it can be conceptualized as an emotion, as cognitions/beliefs about the self, as behaviours or actions, or as neurophysiological systems, among others (Tangney, 1996). While internal shame is defined as a negative self-evaluation, focused on personal mistakes and perceived shortcomings; external shame, the type of shame most studied in people with psychosis, occur when people perceive themselves as existing negatively in the mind of others (Gilbert & Andrews, 1998).

Self-criticism has been described as a safety strategy to deal with/avoid feelings of shame, the most common threat behind this type of self-talk (Gilbert, 2010), as well as an essential component of internal shame (Gilbert & Procter, 2006). Its triggers usually include the threat of social criticism, disconnection, exclusion, rejection and even attack (Gilbert & Irons, 2005). It is a form of dominant-subordinate, self-to-self relating (comprising the inadequate self and the hated self) primarily activated in situations of perceived failure and loss of personal and social status, based on evolved psychobiological systems for social interactions and assuming social roles (Gilbert, 2000).

Gumley and collaborators (2010) conceptualize psychosis and psychotic experiences within the compassion-focused therapy model with people with psychosis presenting an overdeveloped and hyperactive threat system combined with an underdeveloped soothing-safeness system. This would imply a hypervigilance and hypersensitivity to threat combined with few adequate emotional regulation abilities. Within this model, self-criticism is conceptualized as one of the safety strategies recruited to deal with both internal (shame, emotional distress, fears of recurrence) and external threats (stigma, others as untrustworthy) that would lead to negative unintended consequences (e.g. social isolation, submission, emotional distress).

Regarding the internal processes of change in recovery, in a qualitative study with people recovering from psychosis, self-criticism was described as a crucial variable in the maintenance cycle of distress hindering recovery and well-being. In this vicious cycle (the 'trap' of self-criticism), negative experiences of psychosis (self and other-related) trigger and further fuel levels of self-criticism which in turn exacerbate shame and symptoms of psychosis (Waite, Knight, & Lee, 2015).

In empirical cross-sectional studies, people with psychotic symptoms have reported higher levels of external shame (Keen, George, Scragg, & Peters, 2017) and self-criticism (Hutton, Kelly, Lowens, Taylor, & Tai, 2013) when compared to non-clinical controls. External shame has been associated, in people with psychosis, with higher levels of paranoia, negative symptoms and post-psychotic distress (Argel, 2018; Birchwood et al., 2007; Castilho et al., 2017; Turner, Bernard, Birchwood, Jackson, & Jones, 2013), on one hand, and difficulties in personal recovery on the other (Wood & Irons, 2016). External shame has also been stressed as an important mediator between symptoms and the ability to feel safe and connected in the social world (Argel, 2018; Castilho et al., 2017).

Several studies have emphasized the importance of maladaptive coping with stress mechanisms and emotion regulation strategies in psychosis (e.g. Lincoln, Hartmann, Köther, & Moritz, 2015; Moritz et al., 2016). Specifically, self-critical thoughts of self-hatred and inadequacy were found to have negative influence on psychotic symptoms (Connor & Birchwood, 2013) and psychotic-like symptoms, such as non-clinical paranoia (Mills, Gilbert, Bellew, McEwan, & Gale, 2007).

Although shame and self-criticism have been studied in people with psychosis, its relevance has mainly been shown in the exacerbation of symptoms and associated emotional responses. To our knowledge, no studies have explored the impact of shame and self-criticism in functioning of people with psychosis. In the present study we aimed at exploring the associations between external shame, self-criticism, social stress reactivity and social functioning in a sample of people with a psychotic disorder. We hypothesize that shame and self-criticism will be positively associated with both stress reactivity in social situations and social functioning difficulties. Furthermore, we aimed to understand the mediator role of shame and self-criticism in the relationship between stress responses to social situations and difficulties in social functioning.

Method

Participants

The sample of this study is part of a wider research investigating emotion regulation strategies, social rank variables and contextual mechanisms in people with psychosis. Seventy-seven patients with a psychotic spectrum disorder were enrolled. The diagnoses were confirmed by the Clinical Interview for Psychotic Disorders (Martins, Carvalho, Castilho, Pereira, & Macedo, 2015). Inclusion criteria were the diagnosis of a psychotic spectrum disorder, age equal or above 18 years old, with no severe cognitive deficits or psychotic symptomatology impeding participation. The sample's demographic and clinical characteristics are described in Table 1.

Procedure

The study was approved by the Portuguese data protection authority and each health institution's Ethics Committees (five public hospitals and one health institution). The investigation was carried out in accordance with the latest version of the Declaration of Helsinki. Participants were recruited by their psychiatrists and/or therapists in order to join the study. Study's objectives were explained, confidentiality and anonymity were ensured. Participants signed an informed consent form and then completed a set of questionnaires.

Measures

Response to Stressful Situations Scale (RSSS, Barreto-Carvalho et al., 2015).

The RSSS is a 19-item self-response scale assessing individual's experiences of subjective stress when facing several environmental challenges (stressors). Participants are asked to rate each scenario, regarding the experienced stress, in a 1 (no stress) to 10 (extreme stress) Likert-like scale. The RSSS has a second section that comprises three multiple response items, in which respondents are asked to identify the physiological, emotional and/or behavioural reactions they identify in the presence of stressors of different intensity.

Table 7
Demographic and clinical characteristics of the total sample (N = 77)

	Total sample
Gender, *n (%)*	
Men	46 (59.7%)
Women	31 (40.3%)
Age	
M (SD)	32.60 (9.40)
Range	19-62
Marital status, *n (%)*	
Single	58 (75.3%)
Living with a Partner	3 (3.9%)
Married	9 (11.7%)
Divorced	6 (7.8%)
Missing	1 (1.3%)
Work status, *n (%)*	
Employed	32 (41.6%)
Unemployed	26 (33.8%)
Student	10 (13%)
Professional training	2 (2.6%)
Occupational Therapy	4 (5.2%)
Retired (due to disease)	3 (3.9%)
Education level (years)	
M (SD)	12.56 (3.64)
Range	4-23
Diagnoses[a], *n (%)*	
Schizophrenia	55 (71.4%)
Substance-induced Psychosis	6 (7.8%)
Mood disorder with psychotic features	5 (6.5%)
Brief Psychotic Disorder	5 (6.5%)
Schizoaffective disorder	3 (3.9%)
Schizophreniform disorder	3 (3.9%)
Outpatient/Inpatient, *n (%)*	
Outpatient	68 (88.3%)
Inpatient	9 (11.7%)
Type of intervention, *n (%)*	
Psychiatry only	42 (54.5%)
Psychiatry and others (including psychology)	23 (29.9%)
Psychiatry and others (excluding psychology) [b]	12 (15.6%)
Age of illness onset	
M (SD)	27.15 (8.64)
Range	15-50
Number of hospitalizations	
M (SD)	1.75 (2.69)
Range	0-20

Note. [a] Diagnoses according to DSM-5. [b] Includes the combination of Psychiatry and other interventions such as psychiatric nursing, community intervention, or occupational therapy.

In the development study using a non-clinical population, internal consistency was adequate (Cronbach's alpha of .89 for the total scale) as well as values for internal consistency (ranging from .73 to .82) composite reliability, average variance extracted, temporal stability, validity and discriminant ability when considering the three dimensions (negative, positive and neutral valence of stressors) (Barreto-Carvalho et al., 2015). For the purpose of the present study we were specifically interested in stress reactivity to social situations. Therefore, we used a composite, summing the scores obtained in situations implying engaging in social interactions or social evaluation (items: "receiving an invitation", "talking to someone important", "receiving an unexpected visit of a friend or close relative", "Eating in public", "owing money to someone", "entering a crowded coffee shop", "obtaining public recognition for something", "being at parties or family gatherings where everyone is talking", "speaking in public or in front of many people" and "being late"). The internal consistency for this subscale was adequate ($\alpha = .85$).

Personal and Social Performance Scale (PSP, Morosini, Magliano, Brambilla, Ugolini, & Pioli, 2000).

PSP is a clinician-rated instrument designed to measure social and personal functioning and includes four domains of social and individual performance: socially useful activities, (including work and study), personal and social relationships, self-care, and disturbing and aggressive behaviours). Each domain is scored using a six-point rating scale based on severity (absent, mild, manifest, marked, severe or very severe) with higher scores meaning higher levels of dysfunction. Also, a global score of functioning can be computed from the results of all domains using scale between 0 and 100% (Patrick et al., 2009). The PSP has shown adequate reliability, validity and ability to detect clinical changes in people with schizophrenia (Kawata & Revicki, 2008), also in the Portuguese population (Brissos et al., 2012). In the present study we only used the item assessing difficulties in social functioning.

Other as Shamer Scale (OAS, Goss, Gilbert, & Allan, 1994).

The OAS is an 18-item self-report instrument designed to measure external shame. Participants are asked to rate frequency of shame feelings and experiences in a 5-point scale ranging from 0 (never) to 4 (almost always). In the Portuguese population internal consistency was found to be adequate both in original and short forms (Matos, Pinto-

Gouveia, Gilbert, Duarte, & Figueiredo, 2015), as well as it did in the present study (α = .94).

Forms of Self-Criticism and Reassurance Scale (FSCRS, Gilbert, Clarke, Hempel, Miles, & Irons, 2004).

The FSCRS is a 22-item self-report instrument assessing self-critical and self-reassuring thoughts and feelings in which participants rate each statement in a 0 (not at all like me) to 4 (extremely like me) scale considering their usual way of reacting in setbacks or situations of perceived failure. The scale has shown to have adequate psychometric properties in the original study (Gilbert et al., 2004) and, in a large study, using clinical and non-clinical samples, the FSCRS was confirmed as a robust and reliable instrument (Baião, Gilbert, McEwan, & Carvalho, 2015). We used a composite of self-criticism summing the scores for the inadequate self and hated self (α = .91).

Data Analyses

Data were analysed using SPSS version 22. Some variables in study presented a non-normal distribution, thus we utilized non-parametric tests. To study the associations between variables in study, Spearman correlation coefficients were used. The PROCESS macro developed by Hayes (2013) was used to test the sequential mediation analyses. In our mediation model, social stress reactivity was the predictor (independent variable – IV), social functioning was the outcome (dependent variable – DV) and external shame (mediator 1 – M1) and self-criticism (mediator 2 – M2) were the mediators.

Results

Correlational study

Table 2 shows the Spearman's correlations and descriptive statistics for each variable in the study. External shame and self-criticism were positively associated with both social stress reactivity and difficulties in social functioning.

Table 2
Correlations between variables in study and descriptive statistics

	1	2	3	*M (SD)*	*Range*
1. Social stress reactivity (RSSS)	-			46.51 (17.05)	10-85
2. External Shame (OAS)	.46***	-		24.91 (13.45)	5-65
3. Self-Criticism (FSCRS)	.54***	.58***	-	19.03 (11.71)	0-53
4. Social Functioning (PSP)	.26*	.47***	.48***	1.82 (1.16)	0-4

Note. RSSS = Response to Stressful Situations Scale; OAS = Other as Shamer; FSCRS = Forms of Self-Criticism and Reassurance Scale; PSP = Personal and Social Performance scale.
$^*p < 0.05$; $^{***}p < 0.001$

Mediation study

The sequential mediation model yielded significant results with both external shame and self-criticism emerging as significant mediators in the relationship between social stress reactivity and difficulties in social functioning. The direct effect did not reveal to be statistically significant. On the other hand, all indirect effects were statistically significant (cf. Table 3), although the contribution of self-criticism to social functioning when controlling for external shame was not significant (cf. Figure 1).

Table 3
Model coefficients for the serial mediation analyses

	Coefficient	*SE/Boot SE*	*p*	*Bootstrapping BC 95% CI* lower	upper
[$R^2 = .2668$, $F(3,73) = 9.985$, $p < .001$]					
Total Effect	.019	.007	.007	.0054	.0329
Direct Effect	-.001	.007	.878	-.0156	.0134
Indirect Effects					
Total indirect effect	.020	.005		.0117	.0318
a_1b_1	.010	.005		.0117	.0223
a_2b_2	.005	.003		.0006	.0115
$a_1d_{21}b_2$	.005	.004		.0002	.0146
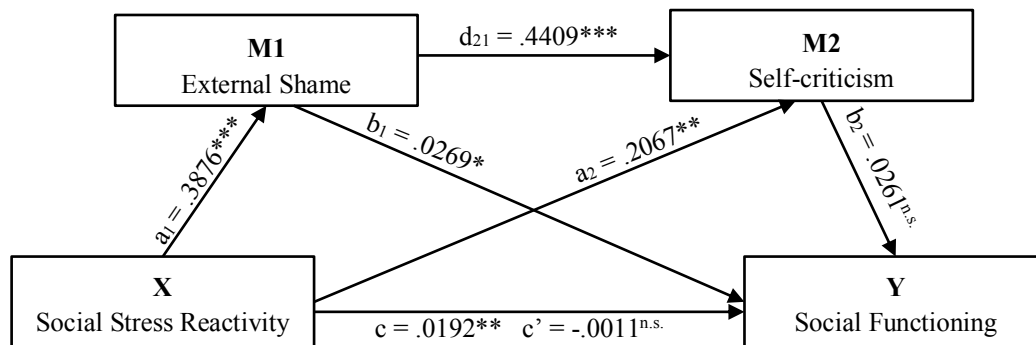
Figure 1. Serial multiple mediation model. Numbers represent non-standardized coefficients
$^*p < .05$, $^{**}p < .01$, $^{***}p < .001$, n.s. = non-significant

Discussion

Recovery-based models have both emphasized the relevance of social functioning as an important outcome; and highlighted the pertinence of intrapersonal aspects (such as the self-to-self relationship and self-experience) to recovery from psychosis. Although the association between social stress reactivity and social impairment has been studied, the processes underlying this relationship are still not clear. This study aimed to explore the associations between external shame, self-criticism, stress reactivity in social situations and social functioning impairment.

External shame and self-criticism were associated with each other in the expected direction and both external shame and self-criticism were associated at a similar magnitude with stress reactivity and social functioning difficulties. Higher levels of external shame and self-criticism were associated with higher stress reactivity and more social impairment. Although these associations were widely studied in clinical and non-clinical populations, and shame and self-criticism are now considered risk factors and mediating processes relevant to the development of different types of psychopathology (Kim, Thibodeau, & Jorgensen, 2011; McIntyre, Smith, & Rimes, 2018), this is, to our knowledge, the first study to explore these associations in people with psychosis. In order to tailor the interventions to the specific needs of specific populations, it is important that intervention studies are informed by preliminary correlational studies confirming the potential role of risk variables in that specific population.

The relationship between social stress reactivity and social functioning difficulties was serially mediated by external shame and self-criticism. This is in line with theoretical accounts of psychosis as a result of an imbalance in the three affect regulation systems with an overdeveloped and hyperactive threat system playing a major role in social situations. Self-criticism would be intended to guarantee social survival, managing potential damage from others and securing the position in the group. It emerges in this context as a strategy to deal with both internal (e.g. shame, emotional distress) and external threats (e.g. stigma, others as untrustworthy) that would lead to negative unintended consequences (e.g. social interaction difficulties and isolation) (Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010) maintaining shame and negative affect reinforcing an avoidance-defense mode and feelings of entrapment (Martins et al., 2017). The 'trap of self-criticism' and heightened levels of shame have been described as crucial processes in the maintenance cycle of distress hindering recovery from psychosis (Waite et al., 2015). These results also

corroborate previous empirical studies in which external shame have been associated with difficulties in personal recovery (Wood & Irons, 2016) and stressed as an important mediator between psychotic symptoms and social outcomes (Argel, 2018; Castilho et al., 2017). To our knowledge this is the first study exploring the effects of self-criticism in social outcomes in people with psychosis.

The fact that controlling for external shame, self-criticism failed to predict social impairment, is in line with the view of self-criticism both as an essential component of internal shame (Gilbert & Procter, 2006) and as defensive strategy to deal with external shame (Gilbert, 2010). Self-criticism is thus not independent of its context (perceived failure and loss of personal and social status) and emotional response (shame), when predicting social interaction problems. The direct effect of stress reactivity on social impairment was non-significant in the presence of the mediators. This result is relevant in showing that it might not be the stress reactivity per se that is associated with social difficulties, and that the presence of negative intrapersonal processes, such as self-criticism, as well as their emotional texture, combined with the absence of self-reassuring abilities, are of outmost relevance for clinical outcomes (Gilbert, 2005).

The present study has some limitations relevant to future research on stress responses, psychological processes and social functioning in people with psychosis. The use of a mixed sample within the psychosis-spectrum (although understandable in the light of continuum/dimensional models of psychosis – e.g. Van Os et al., 1999) makes generalization of results and inferences regarding specific diagnostic categories difficult. Also, the relatively small sample size (although comparable with similar studies with people with psychosis, e.g. Hutton et al., 2013; Keen et al., 2017) might have influenced the results. Further research is needed in larger samples allowing for comparisons between subgroups of participants (e.g. diagnostic categories). A major limitation of this study is its cross-sectional design that does not allow for causal inferences. Although mediational models are often conducted cross-sectionally and studies with psychological mechanisms in psychosis are usually not longitudinal (due to sample's characteristics such as low prevalence, low insight, low levels of retention in longitudinal studies, among others) (e.g. other studies on self-criticism and shame - Hutton et al., 2013; Keen et al., 2017; Wood & Irons, 2016) longitudinal studies are in need in the area. Future studies should employ longitudinal data collection in order to further investigate these associations. Although we have used a clinician-rated measure to assess social functioning, it would be better for future studies to assess social functioning through a more complete measures, with higher

number of items and encompassing several aspects of social functioning that have been shown to be important to recovery from psychosis (e.g. objective and subjective aspects of functioning).

In spite of its limitations and the need for replication, the present study contributes to the knowledge regarding psychological processes underlying social impairment in people with psychosis. Our results highlight the relevance of the emergence of defensive emotional responses such as external shame and the cognitive strategies used to deal with them, such as self-criticism, as maladaptive coping mechanisms in the presence of social stress. These strategies, rooted on the desire to eliminate aversive internal states (experiential avoidance) are known to backfire and perpetuate negative affect and difficulties (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Although there are already some studies with people with psychosis on the processes hypothesized to counteract the pervasive effects of shame and self-criticism (e.g. self-compassion – Collett, Pugh, Waite, & Freeman, 2016; Dudley, Eames, Mulligan, & Fisher, 2018; Eicher, Davis, & Lysaker, 2013) future studies might further explore the (protective) role of these variables on the relationships between social stress and social impairment and their interactions with shame and self-criticism. In spite of the cross-sectional and non-interventional design of the present study, our results seem to indicate the potential benefit of clinical interventions aiming at reducing the negative influence of shame and self-criticism. In fact, compassion-based approaches, specially developed for people with chronic, complex and severe conditions associated with high levels of shame and self-criticism (Gilbert & Irons, 2005), have been emerging with promising results on social outcomes with people with psychosis (Braehler et al., 2013; Laithwaite et al., 2009).

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Pathways from paranoid conviction to distress: Exploring the

mediator role of fears of compassion in a sample of people with psychosis

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Pathways from paranoid conviction to distress: Exploring the mediator role of fears of compassion in a sample of people with psychosis

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Abstract

Fears of Compassion (FOC) relate to experiencing defensive emotions and avoidance reactions when receiving and giving compassion. Three different flows have been identified: giving compassion to others, receiving compassion, and self-compassion. This study sought to explore: FOC within a sample of patients with psychosis; the associations between FOC and paranoia; and the mediator role of FOC in the relationship between paranoid conviction and distress. Seventy-two patients with psychosis (74% diagnosed with schizophrenia), mostly male (85%), with a mean age of 33.46 (SD = 9.43), were recruited and assessed with measures of paranoia (conviction and distress) and FOC. Participants presented significantly higher levels of FOC than non-clinical samples and lower levels than depressed patients. Different flows of FOC were associated with each other and with paranoia-related measures. A mediation effect of FOC from others and fears of self-compassion was found. Results support the relevance of including FOC in formulation and treatment protocols for psychosis.

Keywords: fears of compassion; paranoia; conviction; distress; psychosis

Introduction

Compassion-based intervention models for psychosis suggest the need to activate the safeness–soothing system, a system associated with contented well-being and present moment acceptance (see Gilbert, 2014 for more detailed explanation on affect regulation systems), in addition to reducing the sense of threat (Gumley, Braehler, Laithwaite, Macbeth, & Gilbert, 2010).

Compassion has been defined as an important output of the soothing system underpinned by caring, helping, and sharing social mentalities (Gilbert, 2014). In individuals with psychosis, self-compassion has been associated with lower levels of positive psychotic symptoms, excitement, and emotional discomfort (Eicher, Davis, & Lysaker, 2013), negative symptoms and cognitive disorganization (Gumley & Macbeth, 2014). Bolderston, Newman-Taylor, and Deveson (2014) and Rothwell, Newman Taylor, Bolderston, Deveson, and Maguire (2015) found, with medium to large effect sizes, that cognitive fusion and self-compassion mediated the relationship between paranoia or hallucinations and distress. In a related work, Newman-Taylor and colleagues found that self-compassion predicted general distress (K. Newman-Taylor, personal communication, March 9, 2017).

Compassion-based interventions for psychosis, aimed at developing more compassionate relationships (with others and self), have been emerging with promising results (e.g. Braehler et al., 2013; Laithwaite et al., 2009). Self-compassion has been preliminarily shown to be relevant to recovery from psychosis (Waite, Knight, & Lee, 2015). Nevertheless, intervention processes and outcomes may be influenced by problems caused by an overly activated threat-defense system and an underdeveloped soothing system suggested to be present in psychosis (Gumley et al., 2010).

Fears of Compassion (referred as FOC hereinafter) and its relevance for psychosis

Fear of positive emotions (e.g. affiliative emotions, such as compassion) is developed as a consequence of early aversive experiences when seeking closeness or compassion (Gilbert, McEwan, Catarino, Baião, & Palmeira, 2014). FOC relate to experiencing defensive emotional responses and a tendency to avoidance reactions when receiving and giving compassion, either to others, from others or self-compassion; and they may constitute major obstacles to recovery (Gilbert, McEwan, Matos, & Rivis, 2011). The ability for compassionate responding, to other and self, is rooted in and developed by the

attachment system. The reactivation of the attachment system (e.g. by compassionate responses), when aversive early experiences have blocked it, might give rise to difficult memories and feelings (Gilbert et al., 2011). Joeng et al. (2017) found that fears of self-compassion and self-compassion serially mediated the relationships between anxious and avoidant attachment and depression and anxiety. FOC have been associated with psychopathological symptoms (e.g. Gilbert et al., 2014).

FOC have the potential to be particularly prevalent in individuals with psychosis due to several aspects. Considering that the origins of FOC are rooted in the attachment system as mentioned above, the fact that people with psychosis often present insecure attachment patterns (Berry, Barrowclough, & Wearden, 2007) is a relevant indicator of a potential high prevalence of FOC. Attachment styles have been associated with psychotic symptoms and other inter and intrapersonal problems (Gumley, Taylor, Schwannauer, & MacBeth, 2014). Maladaptative coping strategies tend to emerge in this context as a way to deal with attachment insecurity that might increase psychotic symptoms such as paranoia (e.g. experiential avoidance – Castilho, Martins et al., 2017).

FOC have been reported as most prevalent in people with high levels of shame and self-criticism (Gilbert et al., 2011) and people with psychosis usually report high levels of both and less self-reassurance abilities (Hutton, Kelly, Lowens, Taylor, & Tai, 2013). Additionally, previous research has found associations between shame, self-criticism, and paranoid ideation (e.g. Matos, Pinto-Gouveia, & Gilbert, 2013; Mills, Gilbert, Bellew, McEwan, & Gale, 2007) and, in samples of people with psychosis, shame was found to be a mediator between paranoia and social safeness (Castilho, Pinto et al., 2017).

Another important competence to be able to feel affiliative emotions is the ability to understand the nature, source, and maintenance of emotions (Gilbert et al., 2012). People with psychosis usually lack emotional awareness and have deficits in emotion-regulation skills (e.g. Lincoln, Hartmann, Köther, & Moritz, 2015).

In nonclinical samples and samples of patients with depression some of these characteristics (e.g. alexithymia, attachment insecurity, and self-criticism) have been associated with lower levels of compassion, self-compassion and self-reassurance, and fears of positive emotions and compassion, on the other hand (e.g. Gilbert et al., 2012, 2014). In psychosis, it is also theoretically congruent that these characteristics may contribute for FOC. In fact, accounts from clinical studies have stressed the difficulties of people with psychosis in engaging with compassionate-relating (e.g. Mayhew & Gilbert, 2008).

Authors have stressed the possible reduced therapeutic impact of psychotherapeutic interventions due to the difficulty in experiencing reassurance, compassion and kindness (Gilbert et al., 2011), nevertheless, to date there are no studies exploring the role of FOC in samples with psychosis.

Depression and psychosis

Within the social rank theory, depression is understood as emerging from a perception of being of an inferior social rank (Gilbert, 1992). On the other hand, paranoia has been conceptualized as a defensive strategy to avoid the activation of negative beliefs about the self (e.g. Bentall, Kinderman, & Kaney, 1994). Moreover, a specific type of paranoia characterized by higher levels of perceived deservedness of persecution – the 'bad me paranoia' (Trower & Chadwick, 1995) – has been associated with high levels of depression (e.g. Melo, Taylor, & Bentall, 2006).

Some studies have compared depressive and psychotic symptoms. Results from a nonclinical sample have shown that internalization of aversive experiences would increase vulnerability to depression; and recollections of such experiences would directly and indirectly (through shame) increase paranoia (Pinto-Gouveia, Matos, Castilho, & Xavier, 2014). Gilbert et al. (2001) explored the similarities between auditory hallucinations and critical thoughts in psychosis and depression and found that similar defensive strategies were activated to respond to both experiences. Hutton et al. (2013) found that people with psychosis engaged more often in hateful self-attacking strategies and used self-reassuring less often than controls, but not when comparing to depressed patients.

FOC have been conceptualized as eliciting defensive strategies to protect the self, therefore, it would be interesting and innovative to explore the differences and similarities between these two populations. This study sought to characterize FOC in psychosis, comparing it to results from nonclinical and depression samples. We hypothesize that people with psychosis would present higher levels of FOC than nonclinical samples and we want to explore the differences with depression.

We also aimed to explore the role of FOC in the relationship between paranoid conviction, and paranoia-related distress, two important variables when working psychotherapeutically with people with psychosis (considering both the classic cognitive models and the contextual therapies' models of psychosis).

Method

Participants

Seventy-two participants were enrolled in this study (see Table 1). Inclusion criteria were: diagnosis of a psychotic-spectrum disorder; age equal or above 18 years old. Patients with cognitive deficits or symptomatology impeding participation (assessed by their psychiatrist) were excluded.

Table 1
Sample's demographic and clinical characteristics.

	Male (*n* = 61)	Female (*n* = 11)	Total (*n* = 72)
Age			
M (*SD*)	33.82 (9.84)	31.55 (6.85)	33.46 (9.43)
Range	19–59	25–50	19–59
Marital status, *n* (%)			
Single	55 (90.2%)	5 (45.5%)	60 (83.3%)
Living with a partner or married	2 (3.3%)	5 (18.2%)	2 (2.8%)
Divorced	3 (4.9%)	1 (9.1%)	4 (5.6%)
Widower	1 (1.6%)	0	1 (1.4%)
Occupation, *n* (%)			
Employed	20 (32.8%)	9 (81.8%)	29 (40.3%)
Unemployed	35 (57.4%)	1 (9.1%)	36 (50%)
student	1 (1.6%)	1 (9.1%)	2 (2.8%)
Retired	5 (8.2%)	0	5 (6.9%)
Educational level (years in school)			
M (*SD*)	10.37 (3.48)	12.09 (2.55)	10.63 (3.39)
Range	3–21	8–18	3–21
Diagnosis[a], *n* (%)			
Schizophrenia	48 (78.7%)	5 (45.5%)	53 (73.6%)
Psychotic disorder NOS	7 (11.5%)	1 (9.1%)	8 (11.1%)
Mood disorder with psychotic features	2 (3.2%)	2 (18.2%)	4 (5.6%)
Schizophreniform disorder	1 (1.6%)	2 (18.2%)	3 (4.2%)
Schizoaffective disorder	1 (1.6%)	1 (9.1%)	2 (2.8%)
Ssubstance induced Psychosis	2 (3.3%)	0	2 (2.8%)
Years at treatment onset			
M (*SD*)	25.47 (7.79)	27.45 (4.28)	25.78 (7.35)
Range	12–59	22–33	12–59
Number of hospitalizations			
M (*SD*)	2.33 (1.72)	1.27 (.91)	2.17 (1.67)
Range	0–8	0–3	0–8

Note. NOS = Not Otherwise Specified, [a]Diagnosis following DSM-5 criteria.

Procedure

The study was authorized by each recruitment site's Ethics Committee. The sample was collected in five public hospitals and participants were recruited by their psychiatrist. Study's objectives were explained and confidentiality and anonymity ensured. Participants gave informed consent (following the Declaration of Helsinki) and filled in a battery of questionnaires (20–30 min). One researcher was present during the assessment and helped the participants. The researcher also checked for missing data and requested their completion when needed.

Measures

Paranoia checklist (Freeman et al., 2005).

An 18-item measure providing a multi-dimension assessment of paranoia, with higher scores indicating greater levels. Comprises three scales: frequency of paranoid thoughts, conviction regarding those thoughts, and distress elicited. The participant is asked to rate each affirmation from 1 (Rarely/Do not believe it/Not distressing) to 5 (At least once a day/Absolutely believe it/Very distressing). Internal consistency was high in the original study and in the Portuguese validation study (Motta, Barreto-Carvalho, Pinto-Gouveia, & Peixoto, 2016). In this study, the subscales 'conviction' and 'distress' were used (good reliability, ranging from .93 to .94).

Fears of Compassion Scales (Gilbert et al., 2011).

The FCS is three scales developed to assess three types of Fears of Compassion. The FOC for others subscale includes 10 items concerning compassion felt for others, related to the sensitivity people have for others' thoughts and feelings (e.g. 'Being too compassionate makes people soft and easy to take advantage of'). The FOC from others subscale refers to the experience of compassion from others as it flows into the self and comprises 13 items (e.g.'Wanting others to be kind to oneself is a weakness'). The FOC for self includes 15 items on the compassion people have for themselves when mistakes are made or things go wrong (e.g. 'I fear that if I am more self-compassionate I will become a weak person'). The participants are asked to indicate their agreement (0 = Don't agree at all, 4 = Completely agree) with higher scores meaning higher levels of FOC. The scores may range from 0 to 40, 52 and 60, respectively. In the original study alphas ranged from .78 to .92 and this study from .82 to .90.

Statistical analysis plan

Post-hoc power analyses were performed using the G*Power Software (Faul, Erdfelder, Lang, & Buchner, 2007) and indicated a 99% and 78% chance of detecting a large and medium effect size respectively in regression-based analysis. A power of 74% was found for a Correlation ρH1 = .3.

Data were analysed in SPSS version 21 for Windows (IBM Corp., 2012). All variables met the normality assumption using the Kolmogorov–Smirnov test (Lilliefors Significance Correction) and parametric analyses were performed. The magnitude of correlations was analysed following Cohen's (1977) criteria. To examine indirect effects we used simple mediation models through the Process macro developed by Hayes (2013). We used 95% bias corrected bootstrap confidence intervals (5000 resampling).

Results

Results from the mean comparisons of FOC variables are presented in Table 2. All differences were statistically significant with our sample presenting higher levels of FOC comparing to nonclinical samples and lower levels when comparing to patients with depression.

Table 2
Means and standard deviation of FOC across studies and mean comparisons

	FOC for others		FOC from others		FOC for self	
	Mean (*SD*)	Cohen's *d*	Mean (*SD*)	Cohen's *d*	Mean (*SD*)	Cohen's *d*
Present Study (*n* = 72) – psychosis	23.64 (7.24)		22.89 (10.12)		20.99 (11.96)	
Gilbert et al., (2011)[a] (*n* = 222) – students	21.18 (6.71)*	0.36	15.26 (7.81)*	0.91	16.12 (10.38)*	0.45
Gilbert et al., (2011)[a] (*n* = 53) – therapists	10.51 (5.51)*	2.02	8.81 (7.41)*	1.56	8.15 (6.51)*	1.29
Gilbert et al., (2012) (*n* = 185) – students	19.70 (7.34)*	0.54	15.26 (9.61)*	0.79	14.64 (11.74)*	0.54
Gilbert et al. 2014 (*n* = 52) – depression	-	-	32.6 (13.09)*	0.85	39.18 (14.34)*	1.41

Note. [a]The same study used two diferente samples.
*Mean different from the mean of the present study at *p* < .05 level.

Results from the correlational study are presented in Table 3. FOC were positively and significantly associated with each other and with paranoid conviction and distress.

Results from the simple mediational analyses regarding FOC subscales as mediators of the relationship between paranoid conviction and distress can be found in Table 4. No mediational effect was found when considering FOC for others as a mediator. Models considering FOC from others and for the self explained 41% ($F = 24.1150***$) and 42% ($F = 24.9164***$) of the variance, respectively.

Table 3
Product moment correlations

	M (SD)	PC Conviction	PC Distress	FOC for others	FOC from others
PC conviction[b]	47.40 (16.38)	-			
PC distress[c]	46.83 (17.84)	.60***	-		
FOC for others[d]	23.64 (7.24)	.31**	.24*	-	
FOC from others[e]	22.89 (10.12)	.25*	.37**	.47**	-
FOC for self[f]	20.99 (11.96)	.35**	.44***	.38**	.58**

Note. PC = Paranoia checklist
*$p < .05$; **$p < .01$; ***$p < .001$.

Table 4
Total, direct and indirect effects of the simple mediations with fears of compassion as mediators (M) in the relationship between paranoid conviction (IV) *and paranoia-related distress* (DV)

M	Effect of IV on M (a)	Effect of M on DV (b)	Total effect (c)	Direct effect (c')	Indirect effect			
					Effect	*SE*	Lower	Upper
FOC for others	.1361**	.1521	.6531***	.6324***	. 0207	.0352	-.0361	.1077
FOC from others	.1552*	.4155*	.6531***	.5886***	.0645	.0422	.0071	.1811
FOC for self	.2556**	.3900**	.6531***	.5534***	.0997	.0478	.0333	.2390

Note. *$p < .05$; **$p < .01$; ***$p < .001$.

Discussion

To our knowledge this is the first study to explore the FOC in psychosis and its contribution to the relationship between paranoid conviction and distress. Our results showed that patients with psychosis showed higher levels of FOC comparing with nonclinical samples, but not when comparing with people with depression. Previous research has found higher levels of hated self-attacking in patients with depression when

compared to people with psychosis (Hutton et al., 2013), which can contribute to a higher vulnerability to FOC. On the other hand, we hypothesize that some psychotic symptoms (e.g. asociality – a withdrawal from social contact due to indifference or lack of desire) may have influenced these results. This lack of interest in social connection is usually not present in people with depression, which still desire for group inclusion, and this, combined with helplessness, entrapment and defeat feelings (Gilbert & Allan, 1998), might potentiate FOC. Further research is needed and it would also be interesting to explore FOC in subsamples of different types of paranoia since 'bad me' paranoia may resemble depression.

FOC were associated with each other and these results are similar to those found in other clinical samples (Gilbert et al., 2014). However, in contrast with other studies, in our study significant associations were also found of fear of compassion for others with the other types of FOC. We speculate that in people with psychosis the reduced sources of soothing and safeness, especially in social interactions may influence the perception of affiliative emotions as aversive thus creating sources for threat activation, even in the context of expectable soothing experiences. Therefore, people with psychosis may associate the fears of compassionate-relating with each other, in all its different flows, considering their perceived negative consequences (emotional, social, or other) which would function as a common denominator to activate the threat system. Another possible explanation for these results is that this might be influenced by difficulties in social perception, mentalizing and empathic recognition of suffering. These competences are known to be diminished in people with psychosis (Bora, Yucel, & Pantelis, 2009). Therefore, the inability to recognize and empathically connect with suffering of others/ self might give rise to a fearful response independent of the source of compassion. These are interesting theoretical hypothesis that could be explored in future studies.

Associations between the three FOC and paranoid conviction and paranoid-related distress were significant and a mediating role of FOC (from others and self) was found. These results are in line with previous studies that found self-compassion as a mediator of the relationship of psychosis-type experiences and distress (Bolderston et al., 2014; Rothwell et al., 2015). Other related studies have stressed the importance of lower levels of self-reassurance abilities in persecutory delusions (Hutton et al., 2013), other positive symptoms and insight (Eicher et al., 2013).

Regarding the different pattern of results found for FOC for others, our results are in line with results from previous studies (Gilbert et al., 2011, 2012, 2014) and, as has been

suggested, it is possible that different mechanisms are involved in the fears of giving compassion to others (e.g. Gilbert et al., 2014). In psychosis, it may be the case that fears of giving compassion have more relevant role in interference in social-oriented behaviours than with intrapersonal consequences of paranoia (e.g. distress). It has been proposed that, for some individuals from difficult backgrounds, affiliative experiences may activate the threat-defense system, which would block the mentalizing process (Liotti & Gilbert, 2011). In individuals with psychosis since mentalizing abilities are usually impaired we may hypothesize that a vicious cycle may take place hampering the distress recognition and blocking the motivation to compassionate responding.

Some limitations need to be taken into account. The sample is mostly male and single; therefore, generalization of findings may be difficult. The high prevalence of single participants may indicate a potentially lack of opportunities to receive compassion from and give compassion to others, which might have influence in research and clinical practice. This might stress the need for real-life peer-based supportive interactions that are independent of compassion-based interventions but that can act in a complementary way. The use of self-report measures may have some limitations in assessing delusion-related distress due to low insight. Considering the study's cross-sectional design, causation inferences are not possible. Future longitudinal studies are needed. Due to the current relatively small sample size we were not able to perform other mediation models with higher complexity. Future studies with larger samples could explore a multiple mediation model with the FOC subscales as parallel mediators.

Further study into the FOC mechanisms in psychosis samples seems important not only due to its possible interference in psychotherapeutic processes but also given its possible role in maintaining psychotic symptoms such as paranoia. This study may be integrated in a broader emerging conceptualization of mechanisms of recovery from psychosis, which include enhancing protective mechanisms such as (self-)compassion, acceptance, and mindfulness while buffering the effects of pervasive emotional regulation strategies, such as experiential avoidance or self-criticism.

Notwithstanding its preliminary nature, the present study has important implications for future research and clinical practice. Our results may give insight into possible mechanisms operating between paranoid conviction and paranoid-related distress. If replicated these results show the importance of integrating desensitization and exposure in therapy to help patients access or stay with positive emotional states (Gilbert, 2014) before using/inducing such states (e.g. compassion-based exercises) as therapeutic

techniques. Strategies of gradual exposure to compassion and affiliative emotions (e.g. to observe compassionate interactions between others in-session and as homework prior more emotionally demanding compassion-based exercises) have been previously recommended (Braehler et al., 2013). The fact that the FOC for others had the lowest correlation with paranoid conviction and distress and did not have a significant mediator role may indicate that compassion for others might be the safest starting point for training individuals with psychosis in compassion. Although there are no studies on this particular association, the intervention proposed by Braehler et al. (2013) built on this hypothesis by promoting the development of a 'compassionate group mind' to help members of the group.

Considering our results and previous research, including the assessment of FOC in clinical research, clinical practice and future clinical trials with psychosis seems relevant.

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Engaging with the affiliative system through mindfulness:

The impact of the different types of positive affect in psychosis

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2018

Engaging with the affiliative system through mindfulness:
The impact of the different types of positive affect in psychosis

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Abstract

We aimed to explore associations between positive and negative symptoms, mindfulness, positive affect and social safeness; and to understand the mediator role of positive emotions in the relationship between mindfulness and social safeness. Fifty-six participants with a psychotic disorder were assessed with measures of mindfulness, negative and positive symptoms, positive affect and social safeness. All variables were associated with each other except for positive symptoms and active affect. Mindfulness predicted social safeness through safe affect, when controlling for positive and negative symptoms. This study contributes to knowledge on mechanisms behind social safeness adding the role of mindfulness and activation of positive emotions. The continuing study of mindfulness as an important mechanism for social safeness will allow further improvement of interventions for psychosis.

Keywords: mindfulness, positive affect, social safeness, psychosis, psychotic symptoms

Introduction

A commonly used definition of mindfulness is that it comprises "paying attention in a particular way; on purpose, in the present moment and non-judgmentally" (Kabat-Zinn, 1994, p. 4). Although mindfulness encompasses a non-judgmental and accepting stance towards mental and emotional events regardless of their emotional valence, studies have found associations among mindfulness, positive affect (e.g. Brown & Ryan, 2003; Jislin-Goldberg, Tanay, & Bernstein, 2012) and emotional regulation (through the generation and maintenance of positive emotions) (Jimenez, Niles, & Park, 2010). Mindfulness has even been found to increase everyday positive emotions and pleasure (Geschwind, Peeters, Drukker, Van Os, & Wichers, 2011).

The broaden-and-build theory postulates that an upward spiral is created when positive emotions broaden people's mindsets giving rise to new thoughts, actions and relationships, which in turn will help build enduring personal resources (e.g. social support, resilience). In this context, positive health outcomes appear and a sense of fulfillment arises fueling positive emotions (Fredrickson, 2013). Mindfulness meditation has been proposed to stimulate the upward spirals of positive affect by enhancing positive affect and cognition. Gains with mindfulness-based interventions might be maintained through a self-reinforcing cycle impelled by positive emotions (Garland, Farb, Goldin, & Fredrickson, 2015).

Different positive emotions are theorized to have different triggering appraisal patterns, thought-action tendencies and kinds of resources recruited (Fredrickson, 2013). Moreover, studies have found differences between positive emotions and their role in social affiliation (Duarte & Pinto-Gouveia, 2017). Research has studied particularly emotions associated with an affect regulation system devoted to pursuing resources and achieving – the drive system (Depue & Morrone-Strupinsky, 2005). Emotions associated with the drive system are usually of high intensity and linked to the dopaminergic system. Examples are excitement, vitality, enthusiasm, feeling driven, motivated and energized (Depue & Morrone-Strupinsky, 2005). A different affect regulation system linked to positive emotions is the affiliative-soothing system. It is rooted in the attachment system and involves a non-striving, accepting, quiescence and being-in-the-moment stance. Emotions such as contentment, safeness, peacefulness and connectedness arise once the person is not under threat nor in an achieving mode (Depue & Morrone-Strupinsky, 2005).

Mindfulness has been proposed as a form of connecting with the soothing-contentment affect system through activating a 'being mode' usually associated with

feeling less driven, less threatened and more socially connected (as opposed to the 'doing mode') (Gilbert, 2014). Mindfulness has shown an important impact on social connectedness through decentering, with positive emotions emerging from this process (Adair, Fredrickson, Castro-Schilo, Kim, & Sidberry, 2017). Social safeness is a social output from the affiliative-soothing system and refers to the experience of the social world as safe, warm and soothing and is associated with feelings of belonging, acceptance and warmth from others (Gilbert et al., 2009). Social safeness has been pointed out as a unique, affiliation-responsive, affective experience that protects from psychological suffering (Kelly, Zuroff, Leybman, & Gilbert, 2012).

Mindfulness, positive emotions and social safeness in psychosis

Due to several aspects inherent of psychotic disorders, such as distressing and impairing positive (e.g. delusions, hallucinations) and negative (e.g. anhedonia, avoly, asociality, blunted affect) psychotic symptoms as well as their interpersonal and intrapersonal consequences, individuals with psychosis tend to present lower levels of positive affect when comparing with non-clinical samples, with deficits in positive affectivity being pointed out as one of the enduring individual differences in people with schizophrenia (Blanchard, Mueser, & Bellack, 1998). Erisman (2010) found that people with proneness to psychosis presented higher distress about positive emotions and lower anticipatory pleasure. Nevertheless, it has also been argued that people with psychosis maintain the capacity to generate positive affect, although with more difficulties regarding social interactions (Oorschot et al., 2013).

Concerning mindfulness in psychosis, recent studies have connected mindfulness with lower severity of symptoms, namely auditory verbal hallucinations, and distress (Dudley, Eames, Mulligan, & Fisher, 2018) and showed its important mediator role in influencing outcomes such as negative affect (Perona-Garcelán, Rodríguez-Testal, Senín-Calderón, Ruiz-Veguilla, & Hayward, 2017). Associations between mindfulness facets and self-reported motivation (behavioural activation and inhibition: constructs usually associated with negative symptoms) and emotional regulation have been found (Tabak, Horan, & Green, 2015), as well as associations of mindfulness and psychosis-proneness, subjective happiness and positive affect (Erisman, 2010).

Regarding social safeness, studies have primarily studied the pathological mechanisms (e.g. shame, fears of compassion) through which positive and negative psychotic symptoms impact on social safeness (Castilho et al., 2017; Cruz, 2017). To our

knowledge, no studies have focused on the impact of mindfulness and positive emotions (particularly those associated with the soothing system) on feeling safe and connected in social relationships. In the present study, we aimed to: a) explore the associations between positive symptoms, negative symptoms, mindfulness, positive affect and social safeness; and b) understand the mediator role of the different types of positive emotions in the relationship between mindfulness and feelings of social safeness.

Methods

Participants

Fifty-six patients diagnosed with a psychotic spectrum disorder were enrolled in this study. The diagnoses were confirmed by the Clinical Interview for Psychotic Disorders (Martins, Carvalho, Castilho, Pereira, & Macedo, 2015). Inclusion criteria were: psychotic spectrum disorder, age equal or above 18 years, and speaking fluent Portuguese. Exclusion criteria were: the presence of significant cognitive deficits or showing active symptoms at the moment of evaluation that unable participation (assessed by their psychiatrists). Given the transdiagnostic nature of these processes and considering that the psychosocial challenges faced by people with psychosis are similar across diagnosis, we aimed to study these processes within the broad category of psychotic disorders. Therefore, we chose to include substance induced psychotic disorders, though not common in studies with people with psychosis. Table 1 shows the demographic and clinical characteristics of the sample.

Procedure

The study was approved by the Ethics Committees of all five participating health institutions. Participants were recruited by their psychiatrists in order to join the study. The objectives of the study were explained, confidentiality and anonymity were ensured. Participants signed an informed consent form (following the Declaration of Helsinki) and then completed a set of questionnaires. Clinical interviews were conducted by clinical psychologists with specific training and experience in the assessment of psychotic disorders.

Table 8
Demographic and clinical characteristics of the total sample (N = 56)

	Total sample
Gender, *n (%)*	
Men	33 (58.9)
Women	23 (41.1)
Age	
M (SD)	31.34 (8.31)
Range	19-53
Marital status, *n (%)*	
Single	44 (78.6)
Living with a Partner	1 (1.8)
Married	9 (16.1)
Divorced	2 (3.6)
Work status, *n (%)*	
Employed	23 (41.1)
Unemployed	21 (37.5)
Student	7 (12.5)
Professional training	5 (8.9)
Education level (years)	
M (SD)	13.04 (3.24)
Range	6-23
Diagnoses[a], *n (%)*	
Schizophrenia	41 (73.2)
Psychotic disorder NOS[b]	4 (7.1)
Mood disorder with psychotic features	1 (1.8)
Schizophreniform disorder	2 (3.6)
Schizoaffective disorder	1 (1.8)
Substance-induced Psychosis	3 (5.4)
Brief Psychotic Disorder	4 (7.1)
Age of disorder onset	
M (SD)	26.45 (8.36)
Range	15-45
Age of treatment onset	
M (SD)	27.85 (8.59)
Range	15-47
Number of hospitalizations	
M (SD)	1.33 (1.30)
Range	0-5
Type of intervention, *n (%)*	
Psychiatry (only)	43 (76.8)
Psychiatry & Psychology	13 (23.2)

Note. [a]Diagnoses according to DSM-5. [b]NOS = Not Otherwise Specified.

Measures

Southampton Mindfulness Questionnaire (SMQ; Chadwick et al., 2008).

The 16-item scale assesses mindful awareness of distressing thoughts and images on a 7-point Likert scale (0 = strongly disagree to 6 = strongly agree). In the original study the SMQ presented adequate internal consistency (α = .89) and validity. In the Portuguese validation sample (Martins et al., 2018) four items were removed and good internal consistency was found (α = .82). The Cronbach's alpha in the present study was .82.

Types of Positive Affect Scale (TPAS; Gilbert et al., 2008).

TPAS assesses three different positive emotions: active, relaxed and safe. TPAS is composed of 18 'feeling' words on a five-point scale (0 = not characteristic of me to 4 = very characteristic of me). In the original study of TPAS, the subscales' Cronbach's alphas ranged from .73 to .83, thus presenting adequate reliability. In the Portuguese version (Castilho, Dinis, Xavier, Pinto-Gouveia, & Gilbert, 2018) the three subscales were confirmed and adequate reliability was found, with α ranging from to .75 to .88 in the non-clinical sample and α ranging from to .77 to .92 in the clinical sample. The Cronbach's alphas in the present study varied between .84 and .89.

Positive and Negative Symptom Scale (PANSS; Kay, Fiszbein, & Opler, 1987).

PANSS has 30 items that assess positive symptoms, negative symptoms, and general psychopathology. The response scale represents increasing levels of psychopathology (1 = absent to 7 = extreme). The original study supported the PANSS reliability (α ranging from .73 to .83), stability, construct and criterion validity. In our study, only the positive and negative symptoms scales were used (α = .79 and .89, respectively).

Social Safeness and Pleasure Scale (SSPS; Gilbert et al., 2009).

The 11-item scale measures the extent to which individuals experience their social worlds as safe and soothing. The 5-point rating scale ranges from 0 (almost never) to 4 (almost all the time). The original validation study highlighted the scale's excellent internal reliability (α = .91). The Portuguese version (Dinis, Xavier, Pinto-Gouveia, & Castilho, 2018), in non-clinical and clinical samples maintained the unifactorial structure, and

revealed that SPSS had good psychometric properties, with alphas of .90 and .92, respectively. The Cronbach's alpha in the present study was .91.

Data Analyses

Data were analysed using SPSS version 22. Some variables in study presented a non-normal distribution, thus we utilized non-parametric tests. Spearman correlation coefficients were perfomed. The PROCESS macro developed by Hayes (2013) was used to test parallel multiple mediation analyses (with bootstrapping method, with 95% bias-corrected confidence interval – CI – and resampled 5000 times). In our mediational models, mindfulness was the independent variable (IV) and social safeness was the dependent variable (DV). The active, relaxed and safe positive affect were the parallel mediators. Negative and positive symptoms were used as covariates.

Results

Table 2 shows the Spearman's correlations and descriptive statistics for each variable in the study. Results showed that all variables are significantly correlated with each other, except for positive symptoms and active positive affect.

Table 2
Spearman's correlations and descriptive statistics for each variable in the study

	Mindfulness	Active	Relaxed	Safe	Positive symptoms	Negative symptoms	*M (SD)*
Mindfulness (SMQ)	1						40.59 (13.43)
Active (TPAS)	.32*	1					17.59 (6.47)
Relaxed (TPAS)	.38**	.41**	1				15.55 (4.66)
Safe (TPAS)	.41**	.62***	.55***	1			8.93 (3.34)
Positive symptoms (PANSS)	-.42**	-.06	-.40**	-.27*	1		12.75 (5.16)
Negative symptoms (PANSS)	-.39**	-.44**	-.32*	-.28*	.48***	1	13.20 (5.94)
Social safeness (SSPS)	.44**	.55***	.44**	.59***	-.32*	-.45**	37.25 (8.85)

Note. SMQ = Southampton Mindfulness Questionnaire; TPAS = Types of Positive Affect Scale; PANSS = Positive and Negative Symptom Scale; SSPS = Social Safeness and Pleasure Scale
*$p < .05$; **$p < .01$; ***$p < .001$

Mediation analyses

First step.

A parallel multiple mediation analysis was conducted to simultaneously examine the mediational role of the different positive affects (active, relaxed and safe) in the relationship between mindfulness and social safeness. The total effect was significant (*Effect* = 0.29, *SE* = 0.08, *p* = .001, CI = 0.13 to 0.46). The results showed that mindfulness did not directly predict increased social safeness (*Effect* = 0.11, *SE* = 0.08, *p* = .186, CI = -0.05 to 0.26). The total indirect effect of mindfulness on social safeness through all mediators was significant (*Effect* = 0.19, *SE* = 0.06, CI = 0.07 to 0.31). The only significant specific indirect effect was for safe positive affect (*Effect* = 0.12, *SE* = 0.05, CI = 0.03 to 0.23), which was statistically significant from zero. Since relaxed and active positive affect were not statistically significant mediators, we did not include them in the following mediational analysis.

Second step.

A simple mediation analysis was conducted to examine the mediator role of safe positive affect in the relationship between mindfulness and social safeness, controlling for negative and positive symptoms (see Figure 1). The total effect was significant (*Effect* = 0.20, *SE* = 0.09, *p* = .027, CI = 0.02 to 0.38), and the direct effect of mindfulness on social safeness was not statistically significant (*Effect* = 0.09, *SE* = 0.08, *p* = .297, CI = -0.08 to 0.26). The indirect effect was significant (*Effect* = 0.16, *SE* = 0.06, CI = 0.01 to 0.25), indicating that mindfulness predicted heightened social safeness through increased safe positive affect, when controlling for positive and negative symptoms. This model accounted for 45% of social safeness' variance.
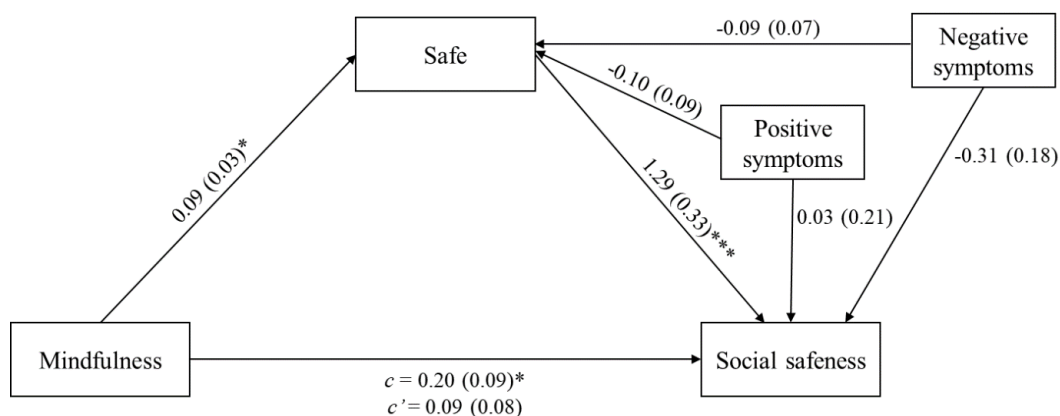
Figure 1. Simple mediation analysis to examine the mediator role of safe positive affect in the relationship between mindfulness and social safeness, controlling for negative and positive symptoms

Discussion

In spite of the neutral nature of mindfulness, studies have found associations with positive affect. Theoretical accounts of mindfulness have proposed its action through both connecting with the affiliative-soothing affect system and promoting a self-reinforcing cycle impelled by positive emotions. We aimed at further exploring the relationships between positive affect, mindfulness and social safeness as well as their relationships with positive and negative symptoms of psychosis.

We found positive associations between mindfulness and the three types of positive affect. Several studies have found these associations (Brown & Ryan, 2003; Erisman, 2010; Jimenez, Niles, & Park, 2010; Jislin-Goldberg, Tanay, & Bernstein, 2012). Nevertheless, to our knowledge, this is the first study to explore the relationships between mindfulness and different types of positive emotions. The highest correlation was between mindfulness and safe positive affect. This is congruent with the view of mindfulness as associated with a 'being' mode, neither pursuing anything (which would be more associated with feeling 'driven' – active positive affect) or having run/escaped from danger (which would activate relaxed positive affect), that might be the optimal mental state to access the 'affiliative-soothing' system. In psychosis, the relationship between mindfulness and positive affect is less explored (e.g. Erisman, 2010). This association might be particularly important to explore in people with psychosis since the numerous sources of external and internal threat emerging from an overdeveloped threat-defense system (Gumley et al., 2010) might trigger fears of positive emotions when trying to access the soothing-system, blocking it (Gilbert, McEwan, Catarino, Baião, & Palmeira, 2014). The association found between mindfulness and safe positive affect indicates that, also in people with psychosis, mindfulness seems to be associated with feelings of warmth, contentment and safeness.

Mindfulness was also inversely associated with both positive and negative symptoms, which has been also found in previous research (Dudley et al., 2018; Perona-Garcelán et al., 2017; Tabak et al., 2015). With more severe positive and negative symptoms and associated distress, a more reduced ability to be aware of thoughts and images, and to observe them in an accepting, non-judgmental , and non-reacting way, is expected. The higher association was with positive symptoms, which is also the most studied relationship in the literature. We hypothesize that this stronger association might be related to the 'object' of mindfulness measured here: 'distressing thoughts and images'. This might be easier to identify regarding positive symptoms, since a) positive symptoms

are usually more salient and easier to be aware of and 'fight' with; and b) delusions and hallucinations very often appear in form of thoughts (e.g. delusional thoughts, voices) or images (e.g. visual hallucinations).

Positive symptoms were negatively associated with safe and relaxed types of positive affect but not with the active type. Positive symptoms have been described as defensive mechanisms (Trower & Chadwick, 1995). From this perspective, positive symptoms would be highly associated with an overly activated threat system (thus negatively associated with the positive affect characterized by calmness and appeasement) and an underdeveloped soothing system (also negatively associated with feelings of warmth, safeness and closeness to others). Congruent with this explanation is the fact that the correlation with higher magnitude was with relaxed positive affect (activated in the absence of threat). On the other hand, negative symptoms were negatively associated with all types of positive affect, the higher correlation being with active positive affect. Considering the Gilbert's affect regulation model, negative symptoms can be conceptualized as a combination of an excessive activation of the threat-defense system with an underactivation (or blocking) of the drive system, which is responsible for motivation for action, pursuit of goals and, regarding emotional outputs, feeling driven, engaged and excited (Gilbert, 2014). This different pattern of associations between positive and negative psychotic symptoms and types of positive affect might indicate that different clinical presentations might lack particular types of positive affect and that, therefore, tailored interventions might be needed.

Social safeness was comparably associated with both mindfulness and all types of positive affect. This is congruent with the conceptualization of safeness as encompassing an active form, that allows us to do pleasurable activities, enjoy ourselves in the company of others feeling free to act and think; and a safeness passive form (characterized by the activation of the parasympathetic nervous system) in which we are able to just 'be', experiencing, in the present moment (highly associated with being mindful) giving rise to a sense of contentment (Gilbert, 1989).

Social safeness was also negatively associated with both positive and negative symptoms. This goes in line with previous research (Castilho et al., 2017; Cruz, 2017). Higher correlations were found between social safeness and negative symptoms. The important relationship between negative symptoms and social functioning impairment, with studies reporting higher associations than those found with positive symptoms, is well known (Kalin et al., 2015). Moreover, the assessment of negative symptoms specifically

encompasses social impairment, such as social withdrawal (diminished interest/initiative in social interactions due to passivity, apathy, anergy, or avolition) and disconnection from the environment (emotional withdrawal: lack of interest in, involvement with, and affective commitment to life's events). It is expectable that these aspects of negative symptoms might be highly associated with not feeling connected to others, accepted, comforted, and free to explore and engage with others. From an evolutionary point of view, negative symptoms might be interpreted as a survival strategy similar to the freeze and/or involuntary subordination strategies. When facing entrapped defeat, the individual blocks the innate defense of active escape behaviour (demobilization) in order to avoid harm (and exclusion) (Gilbert, 2004). On the other hand, the perception of low social rank (present in psychosis – e.g. Allison, Harrop, & Ellett, 2013) might activate involuntary subordination, thus further inhibiting 'seeking' behaviour. Paradoxically, the isolation and associated distress increases, further reinforcing the activation of the threat system and the view of the world/others as dangerous.

In the first mediation model, results showed that the safe type was the only type of positive affect that mediated the relationship between mindfulness and social safeness. Considering that the relaxed type might be associated with escape from threat and that mindfulness promotes non-judging observation and engagement with difficult internal experience, it makes sense that feeling calm, appeased and relaxed is not a mechanism through which mindfulness promotes feelings of belonging, connectedness to others and warmth in social relationships. Also, although the active type of positive affect is related to pursuing social interaction, which implies some degree of motivation and drive to seek others and engage with them in pleasurable activities (activation of the drive system and the active type of positive affect), it seems that mindfulness does not impact on social safeness through activating this type of affect. When controlling for positive and negative symptoms the safe type of positive affect remained a significant mediator. This might indicate that these mechanisms of engagement with the soothing system, the system most associated with social connectedness rooted in a care-giving mentality when interacting with others (Gilbert, 1989), are somewhat independent of symptoms such as delusional or hallucinatory activity, anhedonia, asociality, or blunted affect. These results highlight that mindfulness might be a therapeutic way of experiencing internal experience (even when such experience is threatening) leading to the experience of the social world as safe, warm and soothing, through the stimulation of positive affiliative-soothing emotions.

The present study has some limitations relevant to future research on mindfulness, positive emotion and social outcomes in people with psychosis. The relatively small sample size (although comparable with similar studies, e.g. Hutton et al., 2013) and the use of a mixed sample makes generalization of results and inferences regarding specific diagnosis difficult. Replication is needed in larger samples and comparisons between affective and non-affective psychosis would be useful. The cross-sectional design of the study is an important limitation since it does not allow for causal inferences. Future studies should employ longitudinal data collection in order to further study these associations. Assessing psychotic symptoms with the PANSS might be considered a limitation in this study. The use of more recent measures of negative symptoms (according to the NIMH-MATRICS consensus statement on negative symptoms – Kirkpatrick, Fenton, Carpenter, & Marder, 2006) can shed light into specific associations with types of negative symptoms, such as amotivation, that have a high potential to be associated with social safeness and soothing system's outputs. Also, the use of a broader measure of mindfulness (additional assessment of mindfulness regarding, for instance, body sensations or emotions) would allow for a better account for the relationships between mindfulness and negative symptoms (that may not present themselves necessarily through thoughts or images). Additionally, the fact that the SMQ instructs patients to respond the questionnaire regarding situations in which "distressing thoughts and images" are present, might have primed participants to consider their responses to threats and potentially neglect other aspects of mindfulness. Future studies could assess other aspects of mindfulness and explore its relationships with both psychotic symptoms and social safeness. Including other self-to-self relationship measures, such as self-compassion, in the model would be relevant for further exploring how people with psychosis might engage with the affiliative-soothing system. The fact that this study did not include participants' perspective is a limitation worth acknowledging. It is important that future studies include the active participation of people with lived-experience in order to better explore the face validity of the findings. An additional limitation is that in this study the previous contact and experience with mindfulness practices was not assessed nor controlled in the analysis. In the Portuguese context in general, and in the institutions where this sample was recruited in particular, mindfulness-based interventions are not routinely offered for people with psychosis. Therefore, it is not likely that participants' treatment histories and experience with mindfulness interventions are potential alternative explanations for our findings. Nevertheless, future studies could

explore if results differ when assessing treatment-enhanced mindfulness versus trait mindfulness.

Although in need of replication, this study's results contribute to a better understanding of the role of positive affect, particularly emotions rooted in the soothing system, as a possible mechanism of action of mindfulness. Learning to be mindful of internal and external experience might activate an emotion-regulation system associated with affiliative and positive emotions that in turn could promote affiliative behaviours towards others. Mindfulness involves higher receptivity and reflectivity (in responding) to internal experiences, important skills to be able to be with the internal experiences as they are, with acceptance, openness, and curiosity (Bishop et al., 2004). This mindful way of relating with internal experience might also be infused with qualities such as non-judgement, distress tolerance, care for well-being, empathy, sympathy, sensitivity (compassion attributes) (Gilbert, 2005) which in turn might promote affiliation, connectedness and ultimately social safeness.

Conclusion

Promoting social safeness might be a key outcome in future interventional research with people with psychosis, particularly in the context of contextual behavioural therapies. Compassion-based approaches, such as Compassion-focused Therapy (Gilbert & Procter, 2006) have been showing promising results in people with psychosis (Braehler et al., 2013) and might be a way of accessing and stimulating the soothing system in this population. The combination of different therapeutic strategies, particularly those related to emotion-regulation, might be a way to reduce barriers commonly encountered in psychosocial interventions for people with psychosis (reduced motivation and engagement due to negative symptoms, high avoidance of difficult experiences) and maximize probability of therapeutic change. Therefore, our study intends both to contribute to the research on the mechanisms behind social safeness currently under study (e.g. Kelly, Zuroff, Leybman, & Gilbert, 2012), adding the role of mindfulness and the activation of positive emotions; and promote research on these mechanisms in people with psychosis, further understanding specific interactions with psychotic symptoms.

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Conflict of Interest

The authors declare that they have no conflict of interest.

Schizophrenia: An exploration of an acceptance, mindfulness,

and compassion-based group intervention

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Schizophrenia: An exploration of an acceptance, mindfulness, and compassion-based group intervention

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Abstract

This study aimed to develop and apply a brief (five-session) group-based intervention called Compassionate, Mindful and Accepting approach to Psychosis (CMAP) for patients diagnosed with paranoid schizophrenia. The intervention was based on three major approaches: the mindfulness framework adapted for psychosis with the proposed modifications for meditation work, the rationales from Acceptance and Commitment Therapy, and Compassion-Focused Therapy adapted to psychosis. The intervention was in group format, with one therapist (five 1-hr sessions). Five patients (male, single, between 22 and 35 years old, Caucasian) completed the intervention. Participants completed self-report measures at baseline (1 week prior to intervention) and post-treatment (1 week—additionally the Satisfaction with Intervention Questionnaire). The intervention seemed acceptable for all participants. For illustration of potential benefits of this approach, pre-post results are presented and discussed for two patients. Overall, there was improvement in both patients, although in different measures. Both patients' conviction in paranoid delusions decreased, while an increase in acting with awareness was observed. Although preliminary, the results are in line with previous research in psychosis. Future directions and clinical implications are discussed.

Keywords: acceptance and commitment therapy, compassion-focused therapy, mindfulness, schizophrenia.

What is already known on this topic

1. Contextual therapies aim at developing a more flexible response and more useful self–others and self–self relationships rather than eliminating symptoms.

2. Acceptance, mindfulness, and compassion-based therapies for psychosis have shown promising results in several outcomes.

3. To our knowledge, only one integrated treatment combining CAM exists and found promising results regarding acceptability, self-regulation, and affective symptoms.

What this topic adds

1. This study aimed at developing a brief and easy to implement intervention based on acceptance, mindfulness, and compassion for schizophrenia.

2. Understanding of acceptability in sample of five patients: intervention seemed acceptable with subjective improvement of difficulties and coping.

3. Potential benefits of this approach are illustrated through the results of two case studies: improvement in paranoid conviction and acting with awareness.

Introduction

Contextual cognitive behavioural therapy (CCBT; Hayes, Villatte, Levin, & Hildebrandt, 2011) emerged as a response to criticisms of the cognitive behaviour therapy model, where the function, not content per se, of internal events (including thoughts and images) were regarded as key to understanding patterns of psychological distress (Barlow, 2002). Based on this, contextual therapies embrace a series of methods that emphasise developing an accepting attitude towards internal events, emphasising their context and function regardless of the logical or evidential content. Therefore, the main goal of contextual therapies is developing a flexible repertoire of functional behavioural responses to internal experiences rather than the elimination of specific symptoms. Emphasis is placed on values, quality of life, and acceptance of internal experiences in the "here and now" through experiential exercises (e.g., mindfulness). There are several approaches with the principles of the contextual therapies, such as mindfulness-based therapies, Acceptance and Commitment Therapy (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006), and Compassion-Focused Therapy (CFT; Gilbert & Procter, 2006).

In psychosis, the focus on contextual strategies may be beneficial where contextual therapies focus on modifying the person's relationship with their experiences (e.g., hearing

voices) (Bach & Hayes, 2002), facilitating a therapeutic process of engaging flexibly with psychotic experiences (Gaudiano & Herbert, 2006). For example, Chadwick, Newman-Taylor, and Abba (2005) have emphasised the role of mindfulness strategies in supporting individuals becoming aware of their psychotic experiences as impermanent and distinct from self.

CCBT for psychosis: From case reports to randomised controlled trials

Acceptance and Commitment Therapy.

Single-case data have showed promise in utilising acceptance-based strategies in psychosis. ACT intervention has also been associated with reduction of frequency of auditory hallucinations (García-Montes & Pérez-Álvarez, 2001), delusional verbalisations (García-Montes, Luciano, Hernández, & Zalvivar, 2004), symptom believability and distress (Pankey & Hayes, 2003), and negative symptoms (García-Montes & Pérez-Álvarez, 2010). These case studies' results also showed promising behaviour outcomes improvement as rated idiosyncratically with the patient (Pankey & Hayes, 2003) and increases in valued action (García-Montes & Pérez-Álvarez, 2001; García-Montes et al., 2004). Importantly, these case studies showed that ACT was feasible and acceptable with individuals experiencing psychosis.

To date, five RCTs have been published on ACT or acceptance-based interventions for psychosis (Bach & Hayes, 2002; Gaudiano & Herbert, 2006; Gaudiano et al., 2015; Shawyer et al., 2012; White et al., 2011). In a study with 80 participants with positive psychotic symptoms, randomised to "Treatment As Usual" (TAU) and TAU plus four individual sessions of ACT, Bach and Hayes (2002) found that ACT was linked to significantly higher symptom reporting (consistent with reduced avoidance), lower symptom believability, and reduced re-hospitalisation over a 4-month follow-up period. Gaudiano and Herbert (2006), with participants being randomly assigned to enhanced treatment as usual (ETAU) or ETAU plus three (on average) individual sessions of ACT, found that ACT was associated with reduced self-rated distress related to hallucinations and social disability. Data from this trial were further examined by Gaudiano, Herbert, and Hayes (2010), and believability of hallucinations at post-treatment was found to mediate the effect of ACT on hallucination-related distress. Bach, Gaudiano, Hayes, and Herbert (2012), combining the data from the two trials described above (Bach & Hayes, 2002 and Gaudiano & Herbert, 2006), concluded that the reduction in hospitalisation rates was

improved for ACT in intent to treat analysis and that decreased believability in the content of symptoms was related to reduced re-hospitalisation at 4-month follow-up. White et al. (2011) found that ACT (14 patients with 10 one-to-one sessions) was associated with greater improvement in negative symptoms, fewer cases of depression, and a significant increase in mindfulness skills. Increasing mindfulness over time was correlated with reducing depression. Shawyer et al. (2012) found no effects for ACT (15 individual sessions) regarding confidence to resist harmful commands or in ability to cope with them. However, only 41% of the sample reported compliance to harmful command hallucinations at baseline, weakening the power to detect effects in the primary outcomes. No significant differences were observed between the groups in any of the outcomes (i.e., changes in illness severity, better functioning, reduction in distress, or improvement of quality of life).

Finally, Gaudiano et al. (2015) found that ACT (16 individual sessions) was associated with improved depression in people with psychosis as well as psychosocial functioning (measured by the World Health Organization Disability Assessment Schedule) and experiential avoidance. Small effect sizes were also found for psychotic symptoms.

Mindfulness-based Interventions.

Case studies have testified to the feasibility and acceptability of mindfulness for psychosis (Jacobsen, Morris, Johns, & Hodkinson, 2011; Newman-Taylor, Harper, & Chadwick, 2009), and further evidence from grounded theory analyses have testified to service users' engagement with the experience of mindfulness (Abba, Chadwick, & Stevenson, 2008). Two feasibility studies have found evidence of acceptability in first episode of psychosis (Van der Valk, Van de Waerdt, Meijer, Van den Hout, & de Haan, 2013) and improved anxiety, depression, and conviction in and preoccupation with delusions as well as improvements in processing speed and working memory (Tabak & Granholm, 2014).

Four RCTs have been conducted on mindfulness for psychosis (Chadwick, Hughes, Russel, Russel, & Dagnan, 2009; Chien & Lee, 2013; Chien & Thompson, 2014; Langer, Cangas, Salcedo, & Fuentes, 2012).

Chadwick et al. (2009) demonstrated feasibility of randomising individuals to mindfulness groups (10 sessions) and acceptability of mindfulness itself. Although there were no differences between groups, improvements were observed in clinical functioning (conceptualised as subjective well-being, problems and symptoms, life functioning, and risk) and mindfulness of distressing thoughts and images. Langer et al. (2012) found that

no significant effects were observed in any measure between the groups, except in mindfulness response to stressful thoughts and images within the Mindfulness-Based Cognitive Therapy group (eight individual sessions). Chien and Lee (2013) found that Mindfulness-based Psychoeducation (MBP – 12 group sessions) was associated with significant change in symptom severity, illness insight, and length of re-hospitalisation at post-intervention, while functioning and number of re-hospitalisations improved significantly only at the 18-month follow-up. Chien and Thompson (2014) found that MBP was associated with greater improvement in insight and treatment attitudes, functioning, psychiatric symptoms, and duration of hospital readmissions.

Compassion-Focused Therapy.

In a single case series, Mayhew and Gilbert (2008) found that CFT was feasible and acceptable and that participants showed decreases in depression, psychoticism, anxiety, obsessive–compulsive symptoms, paranoia, and interpersonal sensitivity at post-intervention. Laithwaite et al. (2009) found improvements associated with a compassion-focussed intervention (20 group sessions) in terms of social comparisons, shame, depression, and self-esteem. Loving kindness meditation (six group sessions) was found to be feasible and associated with decreased negative symptoms and increased positive emotions and psychological recovery (Johnson et al., 2011).

The only RCT on CFT for psychosis (Braehler et al., 2013) found that CFT (16 group sessions) was feasible, acceptable, and not associated with adverse effects. The CFT group had greater observed clinical improvement (measure of improvement/exacerbation relative to baseline) and revealed higher levels of compassion, which were correlated with lower levels of depression and social marginalisation).

Integrated Treatment Approaches.

Khoury, Lecomte, Comtois, and Nicole (2013) developed an integrated treatment for emotional regulation combining contextual strategies, namely compassion, acceptance, and mindfulness (CAM), for individuals with early psychosis and found promising results regarding acceptability, feasibility, and potential clinical utility of this approach. Improvements were found in emotional self-regulation (e.g., less rumination, catastrophisation).

Based on these findings, our study aimed to continue the empirical work that has been done in terms of CCBT approaches for psychosis. Therefore, the present preliminary

and explorative study aimed to develop a five-session group intervention called Compassionate, Mindful and Accepting approach to Psychosis (CMAP). The way C.MAP differs from other intervention protocols (and is similar to the Khoury et al. intervention) is that C.MAP intends to include different interrelated processes that have been studied as potentially effective in psychosis instead of focusing on one specific therapeutic approach that can maximise the therapeutic gains. Our main goal was not to prove efficacy of the C.MAP but to (a) develop a brief intervention with the potential for routine implementation in outpatient contexts, (b) explore the potential benefits of this brief intervention, and (c) understand the way participants experience these new strategies. Our hypotheses were:

Participants would positively evaluate the C.MAP in terms of usefulness in improving difficulties, perceived coping with difficulties, usefulness of handouts, intention to participate in other groups, perceived ease of mindfulness exercises, and intention to use the exercises in the future through an evaluation questionnaire;

Participants would show lower levels of paranoid ideation, shame, self-criticism, and would report higher levels of acceptance and mindfulness.

Methods

Participants

Ethical approval was obtained from the Baixo Vouga Hospital Centre ethics committee prior to the study. The participants were identified and referred for the intervention by their psychiatrist (in a Community Mental Health Team) and gave informed consent (Declaration of Helsinki) after a meeting with the principal researcher, where objectives and roles were clarified. Inclusion criteria were: (a) diagnosis of schizophrenia (made by each participant's psychiatrist), (b) absence of significant cognitive deficits, (c) clinical stabilisation (stable residual symptoms were permitted), (d) aged above 18, and (e) outpatients. Exclusion criteria included severe positive or negative symptoms or severe cognitive deficits as identified and informally assessed by each participant's psychiatrist prior to inclusion in the study. Seven patients showed interest and fulfilled criteria; all were male, Caucasian, aged between 22 and 35 years old ($M = 27.86$; $DP = 5.15$), had 5–12 years of school education ($M = 8.57$; $DP = 2.37$), and were of low to medium socioeconomic status (calculations based on family monthly income). The participants had experienced between zero and five hospitalisations. All of the patients had substance (mainly cannabis) abuse in the past, but only one was current. Three participants were

employed. One participant withdrew from the study prior to the first session, and one participant dropped out after session two (unknown reasons). Data regarding programme acceptability is presented for all participants who completed the programme. However, we only present outcome data as illustrative of potential intervention benefits for two participants. This decision was made after the first assessment because three of the participants had difficulties in completing the questionnaires in a valid manner. Problems were detected concerning two main aspects: (a) social desirability: some patients minimised their difficulties (based on known characteristics of this population, we can hypothesise that this may have occurred due to avoidance or stigma-related aspects) and (b) albeit a researcher being present during the assessment, possible cognitive deficits and/or difficulties in abstract thinking seem to have influenced responses from some patients as they did not present a congruent pattern, particularly in more complex questionnaires (e.g., contradictory answers). Moreover, the face-to-face assessment might have been threatening for these patients, and the validity of responses might have been affected by shame-related and interpersonal difficulties.

The two participants had different clinical presentations. Participant 1 was a 22-year-old male, single, unemployed, 5 years of education, living with an aunt. He was first diagnosed with paranoid schizophrenia at age 19 and had two hospitalisations, the first due to persecutory delusions and conceptual disorganisation and the second (compulsory) due to ideas of reference, persecutory delusions, disorganised speech and behaviour. The pharmacological treatment included clozapine 150 mg day^{-1} and diazepam 10 mg day^{-1}. Participant 2 was a 31-year-old male, single, unemployed, 9 years of education, living with his parents. He was diagnosed with paranoid schizophrenia at the age of 19. He had one hospitalisation. The participant had residual positive (auditory hallucinations) and negative symptoms (predominant) and severe anxiety. The past delusional activity had mystical content. The pharmacological treatment was risperidone 6 mg day^{-1}; paroxetine 20 mg day^{-1}, and lorazepam 5 mg day^{-1}.

Measures

Participants completed an assessment battery of self-report measures at the baseline (1 week prior group therapy) and at post-treatment (1 week after). Internal consistencies were calculated at pre-test ($N = 6$), and as we were working with a small sample size, our alpha coefficients were overall low; therefore, we decided to accept alphas higher than .50.

Paranoia checklist (PC, Freeman et al., 2005).

This 18-item scale was devised to investigate paranoid thoughts of clinical populations. The participants were asked to rate each item on a 5-point scale for frequency, degree of conviction, and distress. Higher scores indicate higher levels of frequency, conviction, and distress associated with paranoid thoughts. In the original study, the results showed excellent internal reliability: .90 or above for all subscales. In the Portuguese validation study, the subscales' alphas were .92 (frequency) and .95 (conviction and distress) (Lopes, 2010). In the present study, the internal consistencies ranged from .58 to .81.

Other as Shamer Scale (OAS, Goss, Gilbert, & Allan, 1994).

The scale consists of 18 items rated on a Likert 5-point scale according to the frequency of evaluations about how others judge the self. Higher scores are indicative of higher levels of external shame. The scale showed high internal consistency – .92. A short version (6-item) was developed (Matos, Pinto-Gouveia, Gilbert, Duarte, & Figueiredo, 2015) and it also revealed an excellent internal consistency ($\alpha = .91$) and temporal stability ($r = .70$). In the present study, the internal consistency was .88.

Functions of Self-Criticism and Reassuring Scale (FSCRS, Gilbert, Clarke, Hempel, Miles, & Irons, 2004).

This 22-item scale was developed to assess people's critical and reassuring self-evaluative responses through a 5-point Likert scale. Factor analysis suggested three subscales with excellent internal consistencies (alphas ranging from .86 to .90). The Portuguese version (Castilho & Pinto-Gouveia, 2011) revealed the same structure, with alphas ranging from .62 to .89. We combined the "inadequate" and "hated self" subscales into a self-criticism score, with higher scores meaning higher levels of self-criticism. In the self-reassurance scale, higher scores mean higher levels of self-reassurance skills. The alphas for self-criticism and self-reassurance in this study were .85 and .58.

Acceptance and Action Questionnaire-II (AAQ-II, Bond et al., 2011).

This 7-item self-response questionnaire aims to assess psychological acceptance and experiential avoidance (on a 1–7 rating scale), with higher scores indicating lower levels of psychological flexibility. Results indicated satisfactory structure, reliability (78–.88), and validity. The Portuguese unifactorial version showed excellent internal

consistency (.90) and good convergent and discriminant validity (Pinto-Gouveia, Gregório, Dinis, & Xavier, 2012). In this study, the internal consistency was .87.

Five Facets of Mindfulness Questionnaire (FFMQ, Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006).

This 39-item self-report instrument comprises five facets: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity. Higher scores in each facet reflect higher levels of the correspondent mindfulness facet. In the original study, all five facet scales showed internal consistency from .75 to .91. In the Portuguese version, the facets presented adequate internal consistency (.66–.89) (Gregório & Pinto-Gouveia, 2011). In this study, due to low internal consistencies, only the "observing" (alpha of .90), "acting with awareness" (.70), and "non-judging" (.58) values were used.

Satisfaction with Intervention Questionnaire.

This instrument was specifically designed to assess (anonymously) the experience that patients had with the group; on a 4-point Likert scale, the patients were asked to assess: their difficulties ("How do you feel your difficulties are after the program?" – 1 = "Much worse" to 4 = "Much better"), coping strategies ("How do you feel your ability to deal with your difficulties is after the program?" – 1 = "Much worse" to 4 = "Much better"), handouts ("How useful were the handouts?" – 1 = "Not at all" to 4 = "Very much"), intent to participate in other groups ("Do you consider participating in other groups offered in this team?" – 1 = "Not at all" to 4 = "Highly motivated"), mindfulness exercises ("How difficult did you found the mindfulness exercises?" – 1 = "Very difficult" to 4 = "Very easy"), and the probability of using them in the future ("What is the probability of using these exercises in the future?" – 1 = "Not likely at all" to 4 = "Highly likely").

Procedure

Due to specific characteristics of the target population, the self-report measures were completed with the support of one researcher who assessed the validity of responses. The participants continued to benefit from psychiatric appointments throughout the study, but none of the participants had individual psychotherapy simultaneously.

Development of the intervention.

The team who developed the C.MAP integrated clinical psychologists with clinical experience in psychosocial interventions for schizophrenia and contextual cognitive-behavioural therapeutic models.

Results from other CCBT interventions for psychosis were taken into consideration, and efforts were made to accommodate recent findings and feedback from professionals in the area. The intervention was based on three major approaches: the rationales from mindfulness framework adapted for psychosis (Chadwick et al., 2005), ACT adapted for psychosis (Bach & Hayes, 2002), and CFT (Gilbert & Procter, 2006). The proposed modifications of mindfulness meditation to work with patients with psychosis (Chadwick et al., 2005) were made. The exercises for each session were chosen taking into account: (a) the team's psychologist's clinical experience (with CCBT for other populations and psychotherapeutic intervention—CCBT and CBT—for schizophrenia), (b) the feedback provided by professionals with expertise in CCBT for psychosis (considering the feedback from previous CCBT groups), and (c) existing intervention protocols.

The C.MAP: A Compassionate, Mindful and Accepting Approach to Psychosis.

This intervention focused on developing a more adaptive and functional way to respond to psychological experiences including psychotic symptoms through developing mindfulness skills and cultivating compassionate and accepting responses to thoughts and behaviour. A brief outline and detailed information on the sessions is presented in Table 1.

The intervention was delivered in a closed-group format, and the group was planned to have a minimum of five participants and a maximum of eight, according to specific recommendations for running group interventions with psychosis (Braehler et al., 2013). Also, considering the abovementioned recommended guidelines, the five weekly sessions had a duration of 1 hr (with a 5-min break); all sessions followed the same structure to reduce anxiety (informal welcome, session theme with exercise, sharing experiences, summary, and introduction to homework), and exercises were brief (3–10 min). Sessions were delivered by one therapist, a clinical psychologist, with weekly supervision of a senior therapist. At the end of each session, hand-outs were provided, and patients were encouraged (although homework was not mandatory) to practice between sessions. Patients were provided with the exercise script, and a family member was chosen to read the script and help with the practice at home.

Table 1
Intervention Outline

Session	Theme	Description	Operationalization	Homework
1	Introduction. Psychoeducation about Psychosis and the stress-vulnerability (S-V) model	1) Discussion about the Health versus disease (as not mutually exclusive) 2) Positive and negative symptoms: how to identify and continuum with 'normal' experience 3) Other symptoms associated with psychosis (anxiety, shame, depression, among others) 4) S-V model: understanding multiple causes for psychosis (de-shaming) 5) Introducing the intervention as a different way of dealing with symptoms and their interference on everyday life, as well as a form of relapse prevention.	Group exercise "Getting to know each other" Filling in the "Health and Disease Circle" at different stages of life (percentages of health and illness) Discussion of the "Where from and how its maintained" Handout (predisponents, precipitants and maintenance factors of psychosis) Discussion (at this stage sharing personal experiences was not required although some participants did; several examples were made available)	None
2	Introduction to Mindfulness. The present moment.	1) Experiential avoidance and "automatic pilot" mode 2) Cognitive fusion and experiential avoidance versus experiential acceptance and willingness 3) Introducing Mindfulness: definition, what Mindfulness is and is not.	Group exercise "What does my partner like to do?" Discussion on the 'un-controllability of thoughts' Experiential exercise: Yellow Jeep and sharing experiences Experiential exercise: Mindfulness of breath (5 minutes) and sharing experiences Experiential exercise: "Being willingly out of breath" and sharing experiences	Mindfulness of breath (3minutes)

Session	Theme	Description	Operationalization	Homework
3	Acceptance vs Experiential Avoidance. Acting with commitment	1) Acceptance, mindfulness versus experiential avoidance 2) Practicing acceptance (thoughts/feelings) 3) Mindfulness meditation 4) Life Directions	Experiential exercise: Mindfulness of Breath (5 minutes) Experiential exercise: "Supressing an unwanted thought" and sharing experiences Filling in the "What would I do if suffering went away" handout and Discussion (introducing acceptance as an alternative) Experiential exercise: Mindfulness of emotions (where does the anxiety feel in our body?) (3 minutes) Experiential exercise: Mindfulness of thoughts (allowing an unwanted thought to exist) (3 minutes) sharing experiences	Mindfulness of Breath (3 minutes) "Making a small change": participants were encouraged to take a small action they were afraid of because thoughts and emotions
4	Compassion	1) Compassion: what compassion is and what it is not 2) 3 affect regulation systems and their outputs 3) Self-critical versus self-compassionate thoughts 4) Loving-kindness meditation	Experiential exercise: Mindfulness of Breath (5 minutes) Group Exercise: "Compassionate Mind versus Critical Mind" (cards with thoughts from both minds to discuss and identify the corresponding mind for each thought) Experiential exercise: Mindfulness of breath (3 minutes) + Loving Kindness meditation (compassionate wishes towards the self) and sharing experiences	Mindfulness of Breath (3 minutes) Loving-kindness exercise practiced in the session
5	Relapse prevention	1) What is relapse and strategies for relapse prevention 2) Risk and relapse signs 3) Mindfulness meditation 4) Evaluation of the intervention	Experiential exercise: Mindfulness of Breath (5 minutes) and sharing experiences Filling in the "My warning signs" and "What to do when Relapse starts to show?" handouts and Discussion Experiential exercise: Mindfulness for stress (imagining a stressful situation) with loving-kindness (compassionate wishes for the self) and sharing experiences	None

Results

Acceptability Results

Overall, the intervention was well tolerated by all participants who completed the intervention (*n* = 5), and four reported improved perception and ways of dealing with difficulties. All five completers reported to be willing to take another group intervention and considered the hand-out provided "useful." Two participants found mindfulness exercises "difficult," but all patients endorsed the possibility of "using these exercises in the future."

Outcome Results

Overall, we observed that there was improvement in both participants after intervention. In order to assess the reliability and clinical significance, we used the "Reliable Change Index" statistic (RCI) developed by Jacobson and Truax (1991) (Table 2). The RCI, which provides a measure of both statistical and clinical significance taking into account the scale reliability, is useful in small sample clinical populations to assess effectiveness, with a focus on individual change (Zahra & Hedge, 2010). We used the indications of E.A. Wise (2004, p. 56) for interpretation purposes: results greater than |.84| (significant change), result exceeding |1.28| or |1.96| (remission), and 95% (recovery).

Table 2
Total scores and RCI scores for Participants 1 and 2

	Participant1			Participant2		
	Pre Score	Post Score	RCI	Pre Score	Post Score	RCI
PC						
Frequency	23	24	0.33	20	18	-0.66
Conviction	39	29	-3.48	21	18	-1.05
Distress	15	21	2.42	3	0	-1.21
OAS	9	3	-3.57	0	0	0.00
FSCRS						
Self-criticism	21	21	0.00	5	2	-1.83
Self-reassurance	20	12	-3.25	7	32	10.14
AAQ	27	18	-6.11	7	8	0.68
FFMQ						
Observing	10	8	-5.23	7	19	31.41
Acting with awareness	31	36	7.40	36	37	1.48
Non-judging	28	34	7.56	33	31	-2.52

Note. RCI = Reliable Change Index; PC = Paranoia Checklist; OAS = Other as Shamer Scale; SBS = Submissive Behaviour Scale; FSCRS = Functions of Self Criticism and Reassurance Scale; AAQ = Acceptance and Action Questionnaire; FFMQ = Five Facets of Mindfulness Questionnaire.

Discussion

This study aimed to develop and apply a brief contextual intervention based on the mechanisms proposed by third-generation therapies, merging the advantages of the different intervention rationales – the C.MAP. We intended to explore the perceived usefulness of the intervention and gather the participants' opinions as well as analyse its potential benefits.

Overall, most of the participants considered the C.MAP useful and reported subjective improvement of difficulties and ways of dealing with difficulties. Acceptability results for third-generation behaviour therapies have been found for ACT (e.g., White et al., 2011), mindfulness (e.g., Chadwick et al., 2009; Jacobsen et al., 2011; Johnson et al., 2011), and compassion-focused interventions (e.g., Braehler et al., 2013) in previous research. Our first hypothesis was, in this way, supported by results in spite of limitations concerning the method used to measure acceptability (e.g., a questionnaire not otherwise tested) and the sample size.

Given the very small sample size and lack of outcomes data, we are only able to consider potential treatment signals that may provide a basis for developing the intervention further. Both participants seemed to have increased the mindfulness skill "acting with awareness" over time, and this may have important benefits for developing skills to identify and respond to early warning signs of relapse (e.g., Birchwood, Spencer, & McGovern, 2000) and to identify patterns of relationships between context, internal events, and behavioural responses. We also observed reduced paranoid conviction in both participants. This is in line with previous research (e.g., Bach & Hayes, 2002; Gaudiano & Herbert, 2006) and may signal participants' beginning to become less fused with their paranoid thoughts. This may be of clinical significance given that fusion with experiences may increase feelings of entrapment in psychotic experiences (e.g., Taylor et al., 2010) and its reduction may allow patients to pursue valued life goals (Hayes et al., 2006). Schizophrenia is known to have different presentations, and studies have found different patterns in response to psychosocial treatment depending on the clinical presentation (Bach & Hayes, 2002). Also, in our study, and considering that the patients had different presentations, the results showed that, overall, there was improvement in both patients, although in different aspects. The following results will be discussed separately for each patient as different patterns of results indicate different possible interpretations and may highlight different implications. We find it useful to discuss the different results from the

two patients as the clinical response to the same intervention can be different in different patients, and the reflection on different possible explanations might be useful in clinical practice.

Participant 1

After intervention, the participant seemed more willing to be in contact with the private events without trying to avoid, alter, or suppress them (Hayes, Strosahl, & Wilson, 2011). Reducing experiential avoidance levels is thought to be important as previous research has shown that higher experiential avoidance is associated with greater delusions (Udachina et al., 2009). Although literature recommends including mindfulness and acceptance training in clinical protocols as it could lead to clinical improvement both in psychotic (Chadwick et al., 2005, 2009) and post-psychotic (White et al., 2013) symptoms, the field is in need of mediational studies to better evaluate the mechanisms behind therapeutic change.

The participant also seemed to have learnt to observe inner experience in an accepting way, refraining from judgments or criticism (Baer et al., 2006), which is congruent and has the same implications as the previously mentioned results. Nevertheless, the patient maintained the levels of self-criticism, with a weaker capacity to self-soothe and self-reassure in situations of failure. Although not expected, this result can be interpreted considering that self-related cognitions may be more difficult to accept (particularly with a short intervention) than other types of thoughts and experiences (e.g., other-related, world-related). The soothing system has been described as potentially underdeveloped in psychosis, and therefore, difficulties in accessing this system are common (Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010). We hypothesise that the person may have gained awareness of the "threat-based mind versus soothing and compassionate mind" throughout the intervention and therefore responded in a more attuned way at post-intervention assessments.

There was a significant reduction in external shame, an important output of the threat system, as this type of shame would orientate behaviour towards safety strategies. Studies have highlighted the association between external shame and psychotic symptoms, including paranoid ideation (e.g., Matos, Pinto-Gouveia, & Gilbert, 2013). Shame has also been shown to be associated with higher levels of social dysfunction in psychosis populations (Birchwood et al., 2007). Thus, the observation that participant 1's feelings of shame reduced over time may be an important treatment signal. Future research should try

to understand the benefits of focusing on shame to prevent relapse and promote recovery in psychosis.

Participant 2

In Participant 2, we observed a different pattern of results, including an unexpected increase of experiential avoidance strategies. This result could be explained by the higher levels of dysfunctional emotional regulation strategies that have been associated with psychosis (Livingstone, Harper, & Gillanders, 2009). This result could also be understood regarding the fear of experiencing affiliative emotions (widely studied in psychopathology; for a review, see Veale, Gilbert, Wheatley, & Naismith, 2014) as the intervention (specially being in a group setting) could have elicited difficult internal events that activated experiential avoidance strategies. However, the participant reported increased "observing" on the mindfulness questionnaire. This appears contradictory to a self reported increase in experiential avoidance. One way of reconciling these findings is that the participant may have improved in his ability to observe internal events without cultivating greater psychological flexibility in responding to these experiences (as also found by Baer et al., 2006 in other samples). Consistent with this, the participant showed a decrease of the non-judgmental attitude after the intervention.

The C.MAP intervention aims to facilitate greater attunement to threatening psychotic experiences and internal events (including distressing thoughts, bodily sensations, emotions). Increasing awareness of these experiences without cultivating attitudes of acceptance and compassion may mean that these experiences will continue to feel threatening and trigger safety responses (such as experiential avoidance). Future studies should be careful to include measures of mindfulness, acceptance, and compassion to explore potential associations with increases or decreases in distress. Such an approach may provide a more fine-grained approach to identifying blocks to engaging in contextually based cognitive behavioural therapies and also provide a rationale for identifying adverse effects of intervention. Furthermore, it might be useful in future interventions to devote more time (this was a very brief intervention) to train the mindfulness and compassion skills in order to provide greater practice.

The participant showed no differences in external shame, but the levels of self-criticism decreased. On the other hand, the patient reported a higher capacity to self-soothe and calm. It is possible that the brief intervention tested was not long and powerful enough for these changes to be consolidated and to reflect an emotional change (shame feelings).

Self-criticism is a defensive response to deal with feelings of shame (Gilbert, 2010), and although no other studies assessed self-criticism, decreases in shame and self-criticism are essential in recovery and relapse prevention according to the social mentalities model for psychosis (Gumley et al., 2010). Furthermore, relapse has been associated with greater feelings of self-blame and shame (Gumley et al., 2006); therefore, intervention should focus on the activation of the safeness system (Gumley et al., 2010), which is essential for stress reduction and promotion of social bonding and affiliative behaviours (Gumley, Braehler, & Macbeth, 2014; Gumley, Taylor, Schwannauer, & Macbeth, 2014).

Limitations and future directions

Some limitations should be taken into consideration. The study design and sample size (two case studies) and statistical analysis do not allow the generalisation of results for the target population. The lack of a control group (although such a small experimental sample would not allow valid comparisons) was also a limitation to be addressed in future studies. Therefore, our aim was not to prove efficacy but to illustrate the possible benefits that this integrative intervention could provide in psychosis and also motivate further clinical discussion about the possible benefits of the CCBT processes applied to psychosis. Regarding the assessment measures, one limitation of our study is the absence of a clinical interview to assess symptoms as an outcome measure and also as a part of the initial assessment of inclusion/exclusion criteria for participating in the study. The absence of a formal clinical assessment of cognitive deficits and difficulties in abstract thinking prior to selection for participation was an important limitation as it determined the final sample size. The first assessment session should have an important section devoted to motivate participants and to normalise difficulties (de-shaming). Participants found it difficult to complete the self-report measures, and future studies should also incorporate observer-based assessments. The absence of a follow-up assessment meant that we could not observe further changes in experiences over time. Although patients were encouraged to practice the exercises with a family member (and were given a detailed script), some participants reported difficulties in practicing exercises at home; future studies should make audio resources available to patients.

Other important considerations that future studies should take into account are the group effects on improvement (that could have influenced our results). A recent review has shown that non-specific effects (non-intervention-related) seem to occur in group therapy, with people diagnosed with schizophrenia in variables such as the improvement of negative

symptoms and social functioning deficits (Orfanos, Banks, & Priebe, 2015). Therefore, future studies should control this confounding variable in their statistical analysis and make efforts to understand the mechanisms that might have contributed to efficacy (mediational and moderational analyses).

Clinical implications

The present study developed a new brief clinical intervention that can be easily implemented and seems to have the potential to be adapted to different settings. The C.MAP, being brief and not very demanding (e.g., in terms of homework tasks, length of sessions, etc.), may be useful as a preliminary intervention for participants who refuse to engage in longer therapeutic protocols. This integrative approach (based on compassion, mindfulness, and acceptance processes) may also be useful for this population in a non-directive way that provides different strategies that patients can try and select for themselves based on usefulness. Moreover, these emotion regulation strategies have been described as adaptive and beneficial in terms of stress reduction and promoting pro-social behaviours. Future studies using this integrated protocol could also explore the different contribution of these interrelated mechanisms in the therapeutic change process (component analysis).

The acceptability results indicate that the C.MAP was well tolerated by the participants (no adverse effects were reported), and in the two participants further analysed, it seems to have been beneficial to some extent.

Although clearly preliminary, future studies may continue to study C.MAP with larger samples and more sophisticated methods in order to understand the beneficial effects that this therapeutic approach can add to standard interventions (e.g., pharmacological).

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Recovery through affiliation: A compassionate approach to schizophrenia and schizoaffective disorder (COMPASS)

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Recovery through affiliation: A compassionate approach to schizophrenia and schizoaffective disorder (COMPASS)

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Abstract

Described as a contextual behavioural approach, Compassion-focused Therapy (CFT) aims at helping people develop compassionate relationships both with others and with the self. CFT has been used to promote recovery in psychosis with promising results. The development process of the Compassionate Approach to Schizophrenia and Schizoaffective Disorder (COMPASS) builds upon the available research on contextual behavioural approaches for psychosis. Its main framework is the affect regulation system's model and the compassion-focused therapy rationale as it was adapted for psychosis. Other theoretical and empirical influences are presented and innovations regarding CFT protocols for psychosis are highlighted. COMPASS is already being studied and details on the pilot study are provided. With further study and continuing improvement COMPASS has the potential to help foster recovery in psychosis.

Keywords: compassion, mindfulness, psychosis, recovery.

Introduction

Contextual behavioural approaches for psychosis have been considered a natural evolution of traditional cognitive-behavioural therapy aiming at a broader conceptualization and treatment approach to psychotic symptoms (Tai & Turkington, 2009). These approaches seem to have a specific potential to help recovery due to characteristics as, for instance, absence of questioning regarding the specific content/ rationality of thoughts; specific focus on engagement with difficult experiences; and helping patients understand experiences as transient, separate from self and a part of a continuum (de-shaming). Additionally, focusing on values and motivations, the stimulation of behavioural activation and social interactions, and fostering emotional regulation may also be particularly useful for this population.

Compassion-Focused Therapy (CFT, Gilbert, 2009, 2014; Gilbert & Procter, 2006) was primarily developed for complex and chronic conditions linked to high levels of shame and self-criticism. Its main therapeutic focus is to develop compassion as a motivation to care for others and the self. Compassionate Mind Training (CMT) is a specific training developed to help people cultivate these qualities and skills through compassion-based therapeutic strategies and practices (Gilbert & Irons, 2005; Gilbert & Procter, 2006). CFT and CMT aim at helping people change the relationships they establish with self and others, through processes that generate kindness, warmth, and a non-judgemental attitude. People with psychosis often struggle with several internal (e.g. symptoms, shame) and external sources of threat (e.g. stigma). Moreover, there is usually a lack of abilities to (self)sooth and experience positive affect (e.g. safeness). Thus, authors recommend that along with reducing the sense of threat there is also need to learn positive affect regulation strategies (Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010).

Compassion-focused approaches and CMT have been used to promote recovery in psychosis with promising results. Improvement has been found regarding social comparison, shame (Laithwaite et al., 2009), compassion, and clinical improvement (Braehler et al., 2013). Processes studies have found that increases in compassion were significantly associated with reductions in depressive symptoms and perceived social marginalization (Braehler et al., 2013), thus suggesting compassion as a therapeutic change mechanism. In working with people in an acute inpatient unit (with mixed diagnosis including psychosis), compassion-focused therapy showed improvement in distress and calmness ratings. Themes related to understanding compassion, experience of positive

affect, and the experience of common humanity, emerged as relevant in qualitative analysis (Heriot-Maitland, Vidal, Ball, & Irons, 2014).

The development of COMPASS: Compassionate approach for schizophrenia and schizoaffective disorder

The COMPASS program builds upon the available research on contextual behavioural approaches for psychosis (Braehler et al., 2013; Chadwick, 2014; Johnson et al., 2011; Laithwaite et al., 2009; Martins et al., 2017b). The program's main framework is the affect regulation system's model (Gilbert, 2005) and the compassion-focused therapy rationale as it was adapted for psychosis (Gumley et al., 2010). This rational is present from the beginning of the program and is constantly used to root the exercises, sharing of experiences and group dynamics. The program is introduced as an opportunity to engage with and further develop the soothing-safeness system (while coping with an overly active threat-defence system), develop a compassionate mind (Compassionate Mind Training) that promotes affiliation and self-soothing and stimulate compassionate qualities (e.g. distress tolerance, empathy, non-judgement) and skills (e.g. compassionate thinking, behaving) as conceptualized within the CFT model (Gilbert, 2014). Moreover, it is needed that therapists embody the compassionate qualities and a mindful presence in the context of the therapeutic relationship (paying attention with empathy, presence, and ability to listen in depth, Hick & Bien, 2008) is recommended. The therapists' intention for the group should be to help participants develop a warm, understanding, non-judgmental and proactive relationship with themselves, the group, and people in their lives. Thus, the therapists have an important role in modelling compassionate behaviours and attitudes towards themselves, in their interaction and in the relationships within the group. In all sessions, the therapist promotes a 'Compassionate Group', that is, creates a compassionate collective mind. The idea is for participants to "look" at the 'Compassionate Group' as a model through the question 'What would the group's compassionate mind say/do?'.

COMPASS was primarily based on the group intervention protocol from Braehler, Harper, and Gilbert (2013). All recommendations regarding participants' selection, setting up the group (with the exception of the duration of the intervention), structure of sessions and support outside of sessions were followed.

Mindfulness is the necessary basis for all meditation practices and is also an adequate theoretical framework to understand human experience and psychotic experiences. COMPASS is based on the rationale for applying mindfulness to psychosis,

developed by Chadwick and collaborators (Chadwick, Taylor, & Abba, 2005) and thus, we have adapted all the practices in order to meet the recommendations and adaptations of mindfulness practices for people with psychosis (Chadwick et al., 2005; Shonin, Van Gordon, & Griffiths, 2014). In COMPASS, Mindfulness exercises were used to both help participants focus and ground their attention in a non-judgmental way; and engage in an accepting way with difficult internal experiences that might arise in informal and formal compassion-based practices.

Considering preliminary but encouraging results from Loving-kindness meditation (LKM) in negative symptoms of schizophrenia (Johnson et al., 2011), as well as its theoretical rationale (Johnson et al., 2009), COMPASS also includes brief and simple LKM practices, namely loving kindness to a loved one (person/object/animal) and loving kindness to the self.

Although COMPASS is rooted in CFT rationale for psychosis and this was the rationale discussed with participants, we considered that some Mindful Self Compassion (MSC; Neff & Germer, 2013) constructs such as self-kindness, common humanity and mindfulness (components of self-compassion, Neff, 2003) would also be of great importance in establishing de-shaming and normalization. These constructs are not presented to participants as a theoretical conceptualization of self-compassion. Instead, self-kindness and non-judgement are encouraged as a part of the compassionate response towards self and others and a common humanity perspective (one of the core messages of CFT - "it's not your fault") is fostered with sharing of experiences and discussion. Some of the MSC practices, such as the 'present moment stone', 'compassionate check-in' or the 'compassionate walk', were also adapted and used.

Participant's and clinicians' observations and feedback from previous pilot and exploratory studies (Castilho et al., 2015; Martins, Castilho, Santos, & Gumley, 2016), were also taken into account (e.g. difficulties presented by patients were used to try to facilitate practice; some exercises were adapted considering patients' feedback) to help tailor the intervention to the population.

Innovations: Fears of compassion and observing compassion.

Fears of compassion (FOC) have been pointed out as important variables in psychological distress (Gilbert et al., 2012) including patients with psychosis (Martins et al., 2017a). In COMPASS there is a session entirely dedicated to fears of compassion in all flows of compassion (giving compassion, receiving compassion from others and self-

compassion). The session starts with an experiential exercise aimed at creating the opportunity for FOC to arise: after a brief mindfulness of the breath exercise, participants are asked to remember a moderately difficult situation connecting with the emotions, thoughts and sensations. In pairs, one participant is asked to share the situation focusing mainly on the internal experience and the other is asked to give compassion (without further instructions). The discussion of this exercise is focused on sharing experiences on both roles and the therapists share their observations (e.g. non-verbal demonstrations of compassion and behaviours of discomfort/avoidance) in a compassionate and validating way. After the discussion, the therapist and co-therapist engage in a similar real-play. The therapists share their experiences (including FOC if any arisen) and participants are asked to share their experiences (thoughts, emotions) in observing compassion. Only after this experience of giving, receiving and observing compassion noticing FOC arising, rational on FOC is discussed. FOC are explained as an activation of the threat system when in contact of compassion and discussion on several affirmations depicting FOC is encouraged. The participants are then given the opportunity to practice giving and receiving compassion again. This topic is also approached and discussed throughout the rest of the program.

Other important innovation of COMPASS is the inclusion of the flow 'observing compassion between others' as a form of getting in contact with compassion. Considering that people with psychosis often struggle with FOC in all compassionate flows it might be useful to start practicing compassion at a more basic, less threatening level. We hypothesize that observing compassion without engaging with active behaviours of compassion might be easier for people with psychosis. Participants are encouraged to informally observe acts of compassion in their everyday lives (e.g. between other people, with animals, acts benefiting community, etc.). While observing acts of compassion, participants should be aware of emotions and thoughts that arise in that moment. Observing compassion is also trained in session. Therapists point out acts of compassion when they occur in-session and ask participants to share associated emotions/thoughts.

COMPASS: Session outline

COMPASS target population is people with a psychotic disorder diagnosis. The COMPASS program evolves through three phases and comprises 12 modules that were developed to be delivered in 12 consecutive weekly sessions (minimum). The duration of each session is 90–120 min (5–10-min break). With the exception of the first session, all COMPASS sessions follow the same structure: welcome and remembering last session;

brief mindfulness or compassion practice; session theme; main session practice and discussion: summary, key ideas and 'compassionate homework'. COMPASS main practices and exercises are presented in Table 1. A compassionate message is sent weekly to each participant.

In addition to the group sessions, each participant also has the possibility to schedule two individual sessions with the therapist(s). It is given to each participant the Participants' Manual encompassing a set of materials useful for consolidating the sessions' themes, deepening additional themes and assist the participants in their practice between sessions (with the recorded practices). The Manual is supposed to become a part of each participant's "compassionate kit" as it has a compassionate intention (help building a more meaningful life).

Phase 1: Building trust and group as a safe place.

The first phase of COMPASS corresponds to the first four sessions and aims at creating a safe environment in order to promote trust that will enable sharing of experiences throughout the program. Expectations and fears of coming into a group therapy are discussed and from them, group "rules" and "objectives" are created. This phase is also dedicated to understanding the program's underlying model through psychoeducation on the three-affect regulation systems model and the consequences of the imbalance between them. Detailed focus is given to the outputs of each system and session 3 is dedicated to the threat-system and the role of shame. Psychotic symptoms are conceptualized as responses of an overly activated threat system. Session 4 is dedicated to acceptance and compassion as an alternative and recovery as a process is introduced. Gradually participants are introduced to experiential exercises and short mediation practices (starting with mindfulness of breath and grounding and progressing to soothing breathing rhythm and mindfulness of acceptance).

Table 1
COMPASS main intrapersonal and interpersonal practices

Practice name	Type	Main aim	Observations
1-minute/3-minutes mindfulness of breathing	Intrapersonal	Practicing mindfulness	
Activating the three systems' imagery exercise		Identifying the three systems	Remembering three situations in which the three systems were activated
The case of John			Trying to guess the system being activated in a story
Soothing breathing rhythm		Practicing soothing breathing rhythm	
Grounding mindfulness exercise		Practicing mindful grounding	
Mindfulness of Acceptance		Introducing experiential acceptance	
Compassionate smile		Introducing the idea of practice as activating the soothing system	
Compassionate check-in		Introducing/Practicing compassion	Gradually is introduced the compassionate smile and touch
Present moment stone		Practicing mindfulness	
Loving-kindness to a loved one		Practicing loving-kindness	
Loving-kindness towards the self			
Compassionate touch		Practicing self-compassion	
Observe… Appreciate... exercise		Practicing appreciation and mindfulness	Mindfully paying attention to pleasurable stimuli using the 5 senses
Pleasurable activities list		Planning self-compassion and appreciation practices	
My compassionate postcard		Practicing self-compassion	
Compassionate color			
Safe place			
Action plan exercise		Planning coping strategies	
Building the three-system poster	Interpersonal	Identifying the outputs of the three systems	Matching physiological, emotional, cognitive and behavioural outputs with the systems
Activating embarrassment		Illustrate threat activation and introduce discussion on shame	Looking into each other's eyes in pairs
What compassion is not exercise		Demystify preconceived ideas about compassion	Discussion with the group about several ideas usually mistaken as compassion
Compassionate phrases to other exercise		Practicing compassion to others	

Practice name	Type	Main aim	Observations
My three systems	Both	Reflect on the activation of systems and promote common humanity	Drawing and sharing the way each participants' systems usually are
How I dealt with…		Illustrate strategies of the different systems to deal with threat. Share adaptive coping strategies	Choosing a coping experience and identify the system used to cope with threat activation
Road to recovery exercise			Drawing and sharing a timeline with recovery steps
Activating fears of compassion/Giving and receiving compassion		Illustrate the emergence of fears of compassion. Training receiving and giving compassion	Real/Role-play in pairs: giving and receiving compassion
Observing compassion		Being mindful while observing compassion	Observing Real-play: giving and receiving compassion
My/Group compassionate phrases		Training compassion and self-compassionate phrases	Building the Group Compassionate Mind poster and personal compassionate phrases
Compassionate Walking		Training compassion to others and self-compassion	
Group exercise on Values and Motivations		Linking values, motivations and recovery	Discussing on values and motivations (with cards)

Note. All practices defined as 'intrapersonal' are discussed with the group and sharing of experiences is always encouraged (intrapersonal level), on the other hand, all practices defined as 'interpersonal' encompass an intrapersonal reflection. Therefore, this division is merely for simplifying the presentation of practices from a theoretical perspective.

Phase 2: Compassionate mind training.

The specific aim of Phase 2 is to build on the basic competencies learnt on phase 1 to help patients develop a 'compassionate mind' based on the group as a safe place. Phase two includes sessions 5–10 and start by discussing and experiencing what compassion is and is not (session 5). Session 6 is dedicated to practicing giving and receiving compassion and fears of compassion through the real/role-plays presented above. Flows of compassion are also practiced through observing compassion, loving kindness meditations and development of compassionate thinking (Session 7). Session 8 is dedicated to appreciation and joy with appreciation being directed to mindfully observing the environment, being compassionate in relationships with others and the self. Self-compassion is specifically practiced in sessions 9 and 10 with more intrapersonal practices (e.g. compassionate postcard, safe place imagery). In session 10 is discussed in-depth the practice in daily-life (formal and informal opportunities for practicing).

Phase 3: Revisiting recovery and compassionately planning ahead.

The last two sessions constitute Phase 3 and are aimed at preparing for the ending of the program. The therapists revise and summarize the main competencies and revisit their applications at the service of the Recovery process, reframed as 'living a meaningful life' based on motivations and values. Motives and values as underlying recovery is introduced with the visualization and discussion of the TED talk "Eleanor Longden: The voices in my head" in session 11. In session 12 participants discuss important values for them and a discussion on compassion and self-compassion as motivations is encouraged. A plan for compassionate action in crisis is individually tailored for each participant and the session ends with a final practice defined by consensus.

After three months there is a booster session in which competencies are reviewed, practice is encouraged (with sharing of strategies to make practicing easier) and a compassionate message to new participants is written by each participant.

Brief overview of the pilot study

COMPASS program is currently in its validation process with groups being delivered in several hospitals and mental health institutions. The present study has been reviewed and approved by the Portuguese Data Protection authority and by the ethics committees of the four hospitals that take part in the clinical trial. Our aim is to understand the feasibility and preliminarily assess the possible benefits of COMPASS. Specifically, our pilot study will analyse if, following COMPASS intervention (and re-assessed at 3-months follow up), people with psychosis improved in outcomes related to functioning, community inclusion, social safeness (primary aims), psychotic symptoms, general psychopathology, and medication adherence (secondary aims). We also expect improvement in process variables (mechanisms of change: mindfulness, self-compassion, fears of compassion, self-criticism, shame, empowerment and relationship with symptoms) to be associated with improvement in outcomes (correlational and mediational analysis). For a detailed overview of the variables under study see Table 2.

Table 2
Measures used and variables under study

Instrument	Type	Variable(s) under study	Outcome/ process
Clinical Interview for Psychotic disorders (Martins, Barreto-Carvalho, Castilho, Pereira, & Macedo, 2015)	Clinician-rated	Psychotic and mood symptoms; psychosocial correlates; empowerment	
Personal and Social Performance Scale (Morosini, Magliano, Brambilla, Ugolini, & Pioli, 2000)		Functionality	
Global Assessment of Functioning (American Psychiatric Association, 1998)		Functionality	
Social Safeness and Pleasure Scale (Gilbert et al., 2009)	Self-report	Social Safeness	
Response to Stressful Situations Scale (Barreto-Carvalho et al., 2015)		Stress reactivity	Outcome
Depression, Anxiety and Stress Scales-21 (Lovibond & Lovibond, 1995)		General psychopathology	
Adherence to anti-psychotic medication Scale (Martins et al., 2016)		Medication adherence	
Community Integration Scale of Adults with Psychiatric Disorders (Cabral, Carvalho, Motta, & Silva, 2014)	Family member	Community Integration	
Family Questionnaire (Quinn, Barrowclough, & Tarrier, 2003)		Behaviours and symptoms	
Southampton Mindfulness Questionnaire (Chadwick et al., 2008)	Self-report	Mindfulness	
Types of positive Affect Scale (Gilbert et al., 2008)		Positive affect	
Other as Shamer Scale (Goss, Gilbert, & Allan, 1994)		External Shame	
Forms of self-criticism and reassurance scale (Baião, Gilbert, McEwan, & Carvalho, 2015)		Self-criticism and Self-reassurance	Process
Self-Compassion Scale (Neff, 2003)		Self-compassion	
Fears of Compassion Scales (Gilbert, McEwan, Matos, & Rivis, 2011)		Fears of compassion	
Voices Acceptance and Action Scale (Shawyer et al., 2007)		Relationship with voices	
Willingness and Acceptance of Delusions Scale (Martins et al., 2018)		Relationship with delusions	

Note. Portuguese versions of all instruments will be used.

The validation sample has the following inclusion criteria: a) participants over 18 years old; b) with a DSM-5 (American Psychiatric Association, 2013) diagnosis of schizophrenia, schizophreniform disorder, brief psychotic disorder, or schizoaffective disorder; c) in the critical period (first episode of psychosis within 5 years): d) without severe cognitive deterioration/psychotic symptomatology. Participants were assessed and

divided into experimental group and control group (treatment as usual). The assessment moments were before, after the program and 3 months follow up.

Aiming at illustrating adequacy and feasibility of COMPASS intervention, we tested preliminarily the potential benefits on a small sample of patients. Participants are a subsample of the larger clinical trial and correspond to the participants that completed the first groups ($n = 10$). Participants in this subsample were predominantly male (80%), single (80%) with a mean age of 28.50 ($SD = 5.76$) and with an average of 12.50 ($SD = 3.38$) years of education. Seventy per cent had a diagnosis of schizophrenia and the sample had a mean of 1.30 ($SD = 1.49$) hospitalizations. In Table 3 are presented the preliminary results regarding primary (social functioning) and secondary (symptoms) outcome and process measures.

Table 3
Descriptive statistics, measures' Cronbach's alpha and differences between baseline and post intervention assessments in outcome and process measures (Wilcoxon signed-rank test) with effect size measures

		Baseline			Post intervention					
	α	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*z*	*p*	*r*
Outcome measures										
Social functioning	-	2.00	1.15	2.00	1.20	1.03	1.00	-2.070	.038	-.65
Positive symptoms	.67	14.10	4.40	13.00	10.90	4.28	11.00	-2.371	.018	-.75
Negative symptoms	.78	14.30	3.59	15.00	11.80	3.52	11.00	-1.969	.049	-.62
Process measures										
Self-compassion - Positive	.79	7.26	1.80	7.05	7.75	1.53	1.78	1.683	.092	.53
External Shame	.98	40.00	18.52	36.00	38.30	16.85	35.50	-.912	.362	-.29
Fears of giving compassion	.90	21.00	9.52	19.00	20.00	9.76	20.50	-.358	.720	-.11
Fears of receiving compassion	.88	28.80	10.82	30.00	25.50	13.48	22.50	-1.021	.307	-.32
Fears of self-compassion	.96	24.60	17.15	21.00	17.00	13.41	17.50	-2.143	.032	-.68
Inadequate self	.93	23.00	8.34	22.00	22.50	8.45	21.50	-.256	.798	-.08
Hated self	.82	8.50	5.66	5.50	6.90	5.30	5.50	-2.257	.024	-.71
Reassuring self	.71	14.20	5.41	13.50	15.60	5.48	17.50	.776	.438	.25

Note: α = Cronbach's alpha calculated at baseline, Social functioning = difficulties in social functioning item from the Personal and Social Performance Scale, Positive symptoms = Positive symptoms subscale of the Positive and Negative Syndrome Scale, Negative symptoms = Negative symptoms subscale of the Positive and Negative Syndrome Scale, Self-compassion – positive = Positive composite of the Self-Compassion Scale, External Shame = total score on the Other as Shamer Scale, Fears of giving compassion = Fears of giving compassion subscale of the Fears of Compassion Scales, Fears of receiving compassion = Fears of receiving compassion subscale of the Fears of Compassion Scales, Fears of self-compassion = Fears of self-compassion subscale of the Fears of Compassion Scales, Inadequate self = Inadequate self subscale of the Forms of Self-Criticism and Reassurance Scale, Hated self = Hated self subscale of the Forms of Self-Criticism and Reassurance Scale, Reassuring self = Reassuring self subscale of the Forms of Self-Criticism and Reassurance Scale.

Final remarks

COMPASS was designed to foster recovery and help people with early psychosis develop more compassionate relationships with themselves and others. Mindfulness practices give participants the competencies to ground themselves and observe internal experience in the present moment with abilities of acceptance, nonjudgement and openness. However, in COMPASS, regulation is fostered through affiliation and not primarily through attention (the foundation from which compassion can be cultivated).

The aim is to activate the soothing system without (un)expected outputs of the activation of the threat system (fears of compassion). Therefore, compassionate relationships in COMPASS are developed and trained from its more basic forms, for instance, observing compassion and emphasizing the group as a safe place. This is aimed to minimize unexpected activation of the threat-system while in contact with compassion. The group is the context in which the participants can: build their compassionate abilities and train observing, giving and receiving compassion.

Being more affiliative than contemplative in nature COMPASS combines intrapersonal practices with interpersonal ones. With the evolution of the group as a safer place and the individual competencies, more complex practices are introduced. Nevertheless, various levels of complexity are always present and participants may remain in basic levels of compassion if needed/wanted.

Although the clinical trial is still taking place, preliminary results are encouraging regarding both primary and secondary outcomes and process measures. Participants significantly reduced social functioning difficulties, positive and negative symptoms. Although mediational or correlational analysis were not yet performed, improvement was found in the hypothesized processes of change in COMPASS. Significantly reduced self-criticism and fears of compassion at post-intervention were observed and a positive trend towards increased self-compassion and self-reassuring abilities and decreased external shame also emerged. We believe that through understanding the way our minds evolved and work, following the better safe than sorry rule (including a CFT-based rationale for psychotic symptoms which fosters de-shaming); and through developing compassionate skills such as being attentive to suffering (of self and others) in a non-judgemental, kind and proactive way, people with psychosis might gain and/or further develop important abilities to engage in more compassionate relationships with others and the self. With

further study and continuing improvement, COMPASS has the potential to be implemented as a complementary psychological intervention to promote recovery in psychosis.

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Author note

Conflict of interest

None.

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Allowing safeness to emerge amidst the threat:

Further evaluation of the COMPASS program feasibility and benefits

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Allowing safeness to emerge amidst the threat:

Further evaluation of the COMPASS program feasibility and benefits

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Abstract

Emotional dysfunction after psychosis is a widely common reality and psychosocial interventions have been targeting emotional regulation, interpersonal difficulties, resilience, stress reactivity, stigma, among others. Compassion-focused Therapy, a contextual approach specifically developed for people with complex and chronic disorders, proposes that psychosis would result of an imbalance in the affect regulation systems, with threat-activation arising from several internal and external sources combined with few sources of soothing, safeness and drive. Promising results have been emerging regarding symptoms, emotional regulation and recovery-oriented outcomes for people with psychosis. The compassionate approach for schizophrenia and schizoaffective disorder (COMPASS) is a 12-session group intervention aiming at helping people with psychosis develop more compassionate relationships with others and the self. Preliminary results showed improvement in psychotic symptoms, social functioning, self-criticism and fears of compassion. The present study aimed at further exploring COMPASS benefits in wide range of areas, comparing participants in an experimental (COMPASS+TAU), COMPASS-group hereinafter, and control (TAU-only) groups at baseline and post-intervention. Within each group, scores were compared in the two moments. Forty-four participants (people with a psychosis-spectrum diagnosis within five years after the first episode) were enrolled ($n = 24$ and $n = 15$, in the COMPASS and control groups,

respectively) and assessed at baseline and post-intervention/three months after baseline regarding measures of symptoms, relationship with symptoms, functioning, positive and negative affect, self-criticism, self-compassion, mindfulness and fears of compassion. Results showed that although the COMPASS-group had worse results at baseline, at post-interventions most differences were no longer significant. Moreover, only COMPASS-group improved significantly regarding self-care, self-criticism, positive components of self-compassion and fears of compassion in the flows related to others. Although further study is needed, COMPASS seems a feasible and acceptable intervention with benefits regarding self-to-self and self-to-other relationships.

Keywords: compassion, self-compassion, mindfulness, emotional regulation, functioning, group, psychosis

Introduction

There is an intense debate concerning the definitions, boundaries and characteristics of the 'psychosis' concept. Psychotic disorders are classified in the DSM-5 as encompassing "abnormalities in one or more of the following five domains: delusions, hallucinations, disorganized thinking (speech), grossly disorganized or abnormal motor behaviour (including catatonia), and negative symptoms" (APA, 2013, p. 87). Notwithstanding the advantages for the categorical representations of psychosis (e.g. summarizing complex clinical presentations, aiding clinical decision making – Clark, Cuthbert, Lewis-Fernández, Narrow, & Reed, 2017), several authors have argued that the categorical explanation has limitations, such as failing to account for a) the significant differences within the same diagnostic category - Wigand et al., 2017); b) the continuum of psychotic experiences in the non-clinical population – e.g. Shevlin, McElroy, Bentall, Reininghaus, & Murphy, 2017; and c) the continuity of experiences across the 'schizophrenia-bipolar axis' – Pearlson, 2015. Dimensional representations of psychosis preconize that instead of being of categorical nature, psychotic disorders are better be seen as comprising a set of multiple continuum dimensions (Van Os & Tamminga, 2007), namely positive symptoms, negative symptoms, disorganization, mania, and depression (Reininghaus et al., 2016; Shevlin et al., 2017).

Given the challenging and often distressing characteristics of experiences occurring before, during and after a psychotic episode, emotional dysfunction after psychosis is a widely common reality (Birchwood, Iqbal, Chadwick, & Trower, 2000; Birchwood, 2003; Michail & Birchwood, 2013; Turner, Bernard, Birchwood, Jackson, & Jones, 2013), thus the need for an integrated and effective treatment including psychosocial elements. Psychosocial interventions for people with psychosis, and particularly psychological interventions, have shown consistent beneficial results in a wide range of areas, namely regarding positive symptoms, functioning, relapse rates, affective symptoms, anxiety symptoms, social and vocational functioning (Huxley, Rendall, & Sederer, 2000; Klosterkötter, 2014; Sim, 2006; Wykes, Steel, Everitt, & Tarrier, 2008). Cognitive-behavioural therapy (CBT) is the most studied type of psychotherapy for people with psychosis presenting consistent benefits from symptoms (psychotic, mood and anxiety) to global functioning (Gould, Mueser, Bolton, Mays, & Goff, 2001; Thase, Kingdon, & Turkington, 2014; Turner, van der Gaag, Karyotaki, & Cuijpers, 2014; Wykes et al., 2008). Notwithstanding CBT's benefits and efficacy (thus recommended for people with

psychosis by international guidelines - Kreyenbuhl, Buchanan, Dickerson, & Dixon, 2010; National Institute for Health and Care Excellence [NICE], 2014), high dropout rates (Startup, Jackson, Evans, & Bendix, 2005), smaller effect sizes in rigorous trials, modest results regarding relapse prevention (Garety et al., 2008), and clinicians' feedback (e.g. difficulties in maintaining the focus on the positive symptoms after remission - Gumley, Braehler, Laithwaite, MacBeth, & Gilbert, 2010) indicate that there is opportunity for improvement and further development.

In the light of the recovery movement, with recovery being defined as a "personal, unique process of changing one's attitudes, values, feelings, goals, skills, and/or roles […] living a satisfying, hopeful, and contributing life even with limitations […] development of new meaning and purpose in one's life as one grows […]" (Anthony, 1993), new targets from which to measure improvement have been suggested. It has been previously recommended that CBT could focus on improving emotional dysfunction, interpersonal difficulties, resilience, stress reactivity, stigma, self-esteem and social confidence, among others (Birchwood & Trower, 2006). Nevertheless, it is still not clear if CBT, typically not explicitly involving an emphasis on self-experience, adequately addresses other targets of treatment brought into light by the recovery movement (Hamm, Hasson-Ohayon, Kukla, & Lysaker, 2013).

Recovery-oriented care has been widely advocated for people with psychosis spectrum disorders and compassionate acceptance has been argued to be a context in which people experiencing mental distress may develop their unique way of accepting, coping and living with their difficulties (Spandler & Stickley, 2011). Therapeutic approaches within the 'Contextual Cognitive Behavioural Therapies' (Hayes, Villatte, Levin, & Hildebrandt, 2011) umbrella may be particularly suited to achieve these aims given their interest on the psychological context in which the experience arises and the strategies used to deal with it (as opposed to a eliminative/reduction approach) (Hayes, 2004) and thus their broader conceptualization and treatment approach to psychotic symptoms (Tai & Turkington, 2009). Promising results have been reported in people with psychosis (Aust & Bradshaw, 2017; Davis & Kurzban, 2012; Lam & Chien, 2016; Martins et al., 2017; Potes et al., 2018; Shonin, Van Gordon, & Griffiths, 2014).

Compassion-Focused Therapy (Gilbert, 2009, 2014; Gilbert & Procter, 2006) was developed for complex and chronic conditions linked to high levels of shame and self-criticism. It has the potential to be particularly beneficial for people with psychosis. Psychosis would emerge as the result of an imbalance in the affect regulation systems, with

threat-activation arising from several internal and external sources creating an overly stimulated threat-system. This would be combined with few sources of soothing and safeness resulting from an underdeveloped soothing-affiliative system, as well as an underactive drive system. Compassionate responding would, therefore, emerge as an emotional recovery-oriented alternative to threat-based responses to external and internal threats (Gumley et al., 2010). Benefits regarding a) symptoms and symptom related outcomes (e.g. coping, distress, fear of relapse); b) emotions and emotional regulation; and c) recovery-oriented outcomes (e.g. hope, perception of self-worth, mastery, self-acceptance, satisfaction with life, connection with others), have been found in people with psychosis, with studies evolving from case studies, interventional studies to a randomized controlled trial (Braehler et al., 2013; Johnson et al., 2009; Johnson et al., 2011; Kennedy & Ellerby, 2016; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). Notwithstanding the promising results, research on compassion-based approaches is still scarce.

The compassionate approach to schizophrenia and schizoaffective disorder (COMPASS) intervention evolves through three phases, comprising 12 weekly group sessions, aiming at helping people with psychosis develop more compassionate relationships with others and the self. In a small sample, COMPASS improved psychotic symptoms, social functioning, self-criticism and fears of compassion from baseline to post-intervention. A detailed description on the intervention and preliminary results can be found elsewhere (Martins, Barreto-Carvalho, et al., 2018).

The present study aimed to further explore the benefits of COMPASS in a larger sample of people with early psychosis (first 5 years), comparing participants in the experimental and control groups at baseline and post-intervention (between groups) and within each group scores will be compared in the two moments. Improvement will be assessed regarding: a) primary outcome measures – functionality, self-to-self and self-to-others relationships; and b) secondary outcome measures – symptoms. A multi-informant methodology will be employed with improvement being assessed by self-report, clinician-rated measures and feedback from significant others.

Method

Design

A prospective, non-randomized, open-label, non-blind evaluation, group clinical trial was conducted to compare a 12-session group compassion-based intervention plus

treatment as usual (TAU) (COMPASS group herein forward) with a control group receiving TAU alone (TAU group). A within and between-subjects design was used.

Participants

Participants were recruited at five hospital centres of the Northern and Centre Regions of Portugal and were referred to the study by their psychiatrist or reference therapist. Inclusion criteria were as follows: a) having been diagnosed with a DSM-5 diagnosis of schizophrenia, schizophreniform disorder, brief psychotic disorder, or schizoaffective disorder; b) in the critical period (first episode of psychosis within 5 years); c) age above 18 years old; d) currently receiving psychiatric outpatient treatment. Exclusion criteria included: a) other psychosis diagnosis (e.g. bipolar disorder with psychotic features, psychotic depression, substance-induced psychotic disorder); b) severe cognitive deterioration or cognitive deficit; c) psychotic symptomatology impeding participation and/or being an inpatient at baseline; d) current psychological intervention if it included mindfulness, compassion and/or acceptance and commitment therapy components.

Measures

Measures will be presented grouped by the individual that rated the instrument: clinician-rated measures, participant-report measures and measures rated by a significant other. Portuguese validated versions of all measures were used.

Clinician-rated measures.

Clinical Interview for Psychotic Disorders (CIPD; Martins, Barreto-Carvalho, Castilho, Pereira, & Macedo, 2015).

The CIPD allows both the assessment of diagnosis, through the presence/absence of psychotic symptoms, and the symptoms' psychosocial correlates (e.g. relationship with symptoms, empowerment or interference). The experts' panel evaluation of the CIPD revealed high scorings regarding pertinence and language suitability for the psychosis population (Martins et al., 2015). High inter-rater reliability for the majority of CIPD items was found and positive and moderate to strong correlations emerged between CIPD, PANSS, GAF and PSP. Qualitative analysis highlighted the adequacy and utility of the CIPD for people with psychosis (Martins et al., 2018). In the present study, the CIPD was

used to confirm diagnosis and provided the score related to empowerment towards to psychotic symptoms score.

Positive and Negative Symptom Scale (PANSS; Kay, Fiszbein, & Opler, 1987).

PANSS has 30 items that assess positive symptoms, negative symptoms, and general psychopathology. The response scale represents increasing levels of psychopathology (1 = absent to 7 = extreme). In our study, only the positive and negative symptoms scales were used.

Personal and Social Performance Scale (PSP, Morosini, Magliano, Brambilla, Ugolini, & Pioli, 2000).

PSP is a clinician-rated instrument designed to measure social and personal functioning and includes four domains of social and individual performance: socially useful activities (including work and study), personal and social relationships, self-care, and disturbing and aggressive behaviours). Each domain is scored using a six-point rating scale based on severity with higher scores meaning higher levels of dysfunction.

Participant-rated measures.

Depression, Anxiety and Stress Scales (DASS-21; Lovibond & Lovibond, 1995).

The DASS-21 is a 21-item scale measuring the extent to which participants have experienced depressive, anxiety and stress symptoms during the past week. Participants rate the symptom's frequency (0 = Did not apply to me at all to 3 = Applied to me very much or most of the time). Higher results correspond to greater levels of Depression, Anxiety and/or Stress.

Fears of Compassion Scales (FCS; Gilbert, McEwan, Matos, & Rivis, 2011).

The FCS is three scales developed to assess three types of Fears of Compassion (FOC): FOC for others subscale, from others and for self. The participants are asked to indicate their agreement (0 = Don't agree at all, 4 = Completely agree) with higher scores meaning higher levels of FOC.

Forms of Self-Criticism and Reassurance Scale (FSCRS, Gilbert, Clarke, Hempel, Miles, & Irons, 2004).

The FSCRS is a 22-item self-report instrument assessing self-critical (inadequate and hated self) and self-reassuring thoughts and feelings in which participants rate each statement in a 0 (not at all like me) to 4 (extremely like me) scale considering their usual way of reacting in setbacks or situations of perceived failure.

Other as Shamer Scale (OAS, Goss, Gilbert, & Allan, 1994).

The OAS is an 18-item self-report instrument designed to measure external shame. Participants are asked to rate frequency of shame feelings and experiences in a 5-point scale ranging from 0 (never) to 4 (almost always).

Response to Stressful Situations Scale (RSSS, Barreto-Carvalho et al., 2015).

The RSSS is a 19-item self-response scale assessing individual's experiences of subjective stress when facing several environmental challenges (stressors). Participants are asked to rate each scenario, regarding the experienced stress, in a 1 (no stress) to 10 (extreme stress) Likert-like scale.

Self-Compassion Scale (SELFCS; Neff, 2003).

The SELFCS has a total of 26 items that aim to measure global self-compassion in its three key bipolar components: self-kindness versus self-judgment, common humanity versus isolation and mindfulness versus overidentification. Participants are asked to rate how often the items stated were true on a scale of 1 (Almost never) to 5 (Almost always), with higher results indicating greater self-compassion.

Social Safeness and Pleasure Scale (SSPS; Gilbert et al., 2009).

The 11-item scale measures the extent to which individuals experience their social worlds as safe, warm and soothing. The 5-point rating scale of SSPS denotes the extent of the agreement from the individuals, ranging from 0 (Almost never) to 4 (almost all the time).

Southampton Mindfulness Questionnaire (SMQ; Chadwick et al., 2008).

The 16-item of SMQ assesses mindful awareness of distressing thoughts and images on a 7-point Likert scale (0 = strongly disagree to 6 = strongly agree).

Types of Positive Affect Scale (TPAS; Gilbert et al., 2008).

TPAS assesses different positive emotions that are experienced by individuals. Three positive affects had emerged namely, active, relaxed and safe positive affect. TPAS is composed of 18 'feeling' words on a five-point scale (0 = not characteristic of me to 4 = very characteristic of me).

Significant other-rated measures.

Family questionnaire (FQ; Quinn, Barrowclough, & Tarrier, 2003).

The FQ is a 45-item self-report measure of relatives' perceptions of the behaviours and symptoms of people with psychosis in relation to three dimensions: symptom's frequency, relative's concern and their ability to cope with the symptoms. The respondent is asked to rate each symptom, in each dimension, in a 1 to 3 scale. In the present study, we only used the factors measuring the frequency of negative symptoms, affective symptoms and psychotic symptoms.

Community Integration Scale for Adults with Psychiatric Disorders (CIS-APP-34 – family member version; Cabral, Carvalho, Motta, & Sousa, 2018).

The CIS-APP is a self-report instrument comprising 34 items assessing community integration in adults with psychiatric problems. Items are responded in a scale ranging from 0 (I have no opinion about it) to 4 (Completely agree), in which higher scores indicate higher levels of community integration of the respondent's significant other/family member.

Arms of the study

Treatment as usual.

Treatment as usual consisted in psychiatric treatment with psychotropic medication for all participants. Some participants reported having complementary interventions, namely, psychotherapeutic intervention, specialized nursing interventions, and treatment provided from mental health community teams (including psychoeducation, family interventions, community-based interventions among others). TAU was free to vary post initial assessment in both groups. Although some participants (in both groups) were receiving psychological interventions, none had previous experience with mindfulness, acceptance or compassion-based exercises, practices or interventions.

COMPASS Intervention.

Participants in the COMPASS group also received the COMPASS intervention. COMPASS is a manualized, group-format intervention that builds upon the available theoretical and empirical research on contextual behavioural approaches for the psychosis continuum. It was primarily based on the compassion-focused therapy rationale as it was adapted for psychosis (Gumley et al., 2010), in general, and in the group intervention protocol from Braehler, Harper, and Gilbert (2013) and patients' and clinicians' feedback from previous clinical studies, in particular. It comprises 12 weekly sessions (approximately 3 months), with intrapersonal (e.g. mindfulness and compassion meditation) and interpersonal (e.g. training receiving, giving and observing compassion) practices, and evolves through three phases: "Building Trust and Group as a Safe Place" (Sessions 1-4); "Compassionate Mind Training" (Sessions 5-10); and "Revisiting Recovery and Compassionately Planning Ahead" (Sessions 11 and 12) (Martins et al., 2018).

Procedure

The study was approved by the Portuguese data protection authority and each participating health institution's Ethics Committees. The investigation was carried out in accordance with the latest version of the Declaration of Helsinki and, thus, followed the national and international ethical and deontological guidelines.

After referral study's objectives were explained, confidentiality and anonymity were ensured. After this brief explanation, those who agreed to participate in the study were asked to give their written consent. Subsequently, participants were assessed with the Clinical Interview for Psychotic Disorders (Martins et al., 2015), other clinician-rated measures and a battery of self-report measures. Assessment sessions included breaks whenever needed and additional sessions to fill in the self-report measures were schedules whenever necessary/requested. At the first phase of recruitment, all participants were allocated to the COMPASS group and, afterwards, phase two of recruitment aimed to constitute the control group (with same inclusion criteria). In the COMPASS group, the assessment moments were before, after the intervention (approximately 3 months after baseline) and at 3-months follow up (although we only present here pre and post-intervention results). A significant other was asked to fill in self-report measures regarding the participant's clinical state. In the control group, only the first two assessment moments were performed and no information from a significant other was collected.

The COMPASS intervention was delivered in weekly group format. Each group was delivered by two clinical psychologists and, in some groups, there was one additional observant participant (a nurse specialized in psychiatry, a psychology student and a clinical psychologist in three of the groups). At least one of the therapists in each group had previous experience in psychological intervention with people with psychosis and/or psychotherapeutic experience with contextual interventions. All therapists (n = 8) had previous training in the COMPASS intervention with the intervention's developers. Trial therapists had weekly, two-hour supervision with one of the intervention's developers.

Data analyses

We have not conducted a-priori power analysis considering that a) the present study intended to be a practical pilot study to explore the potential benefits of the COMPASS intervention; b) the expected sample size was relatively small considering the prevalence of potential participants with inclusion criteria and interested/availability to participate in a 12-session group intervention. Considering this limitation, and following good practice guidelines in scientific research, effect size measures are reported and interpreted for all analysis. For the same reasons, the p value criteria were not adjusted for multiple comparisons (in order to be able to explore the outcomes without missing relevant information due to restricting p values).

Data were analysed using SPSS, version 22. Descriptive statistics were conducted and further inferential analyses were also carried out. Due to small sample sizes in both group and variables violating normality assumptions we chose to utilize non-parametric tests. For group comparisons within the sample's characterization section, we performed Mann-Whitney U tests for continuous variables and Chi-square statistics with Fisher's exact tests with a 0.05 level of significance for categorical variables. Effect sizes reported for each type of analysis were eta-squared values and Cramér's Vs, respectively.

For between-group pre to post comparisons, the Mann-Whitney U test was used. Effect sizes (eta-squared) are provided for all outcome measures in both groups (independent of the results on significance tests). For within-group differences, we used the Wilcoxon Signed-Rank test with effect sizes being calculated following Rosenthal's formula ($r = z/\sqrt{N}$) (Rosenthal, 1994). Effect sizes were interpreted according to Cohen (1988) that reports the following intervals to r: small effect (.1 to .3) moderate effect (.3 to .5) and strong effect (.5 or higher); and to η2: no effect (0 to .003), small effect (.010 to .039), intermediate effect (.03 to .11) and large effect (.14 to .20).

Results

Recruitment to trial and participants' characteristics

Of the fifty-six originally assessed for eligibility, fifty-one were allocated to either the COMPASS or TAU groups and forty-four (78.57% of the original potential sample) constituted the final sample of the present study. Figure 1 presents the flow of participants throughout the study.

COMPASS group comprised twenty-nine participants and the TAU group fifteen participants. Demographic and clinical characteristics of both groups can be found in Table 1. Participants in both groups did not significantly differ in any of the demographic variables and significant differences in clinical variables were only found for type of usual intervention (cf. Table 1).
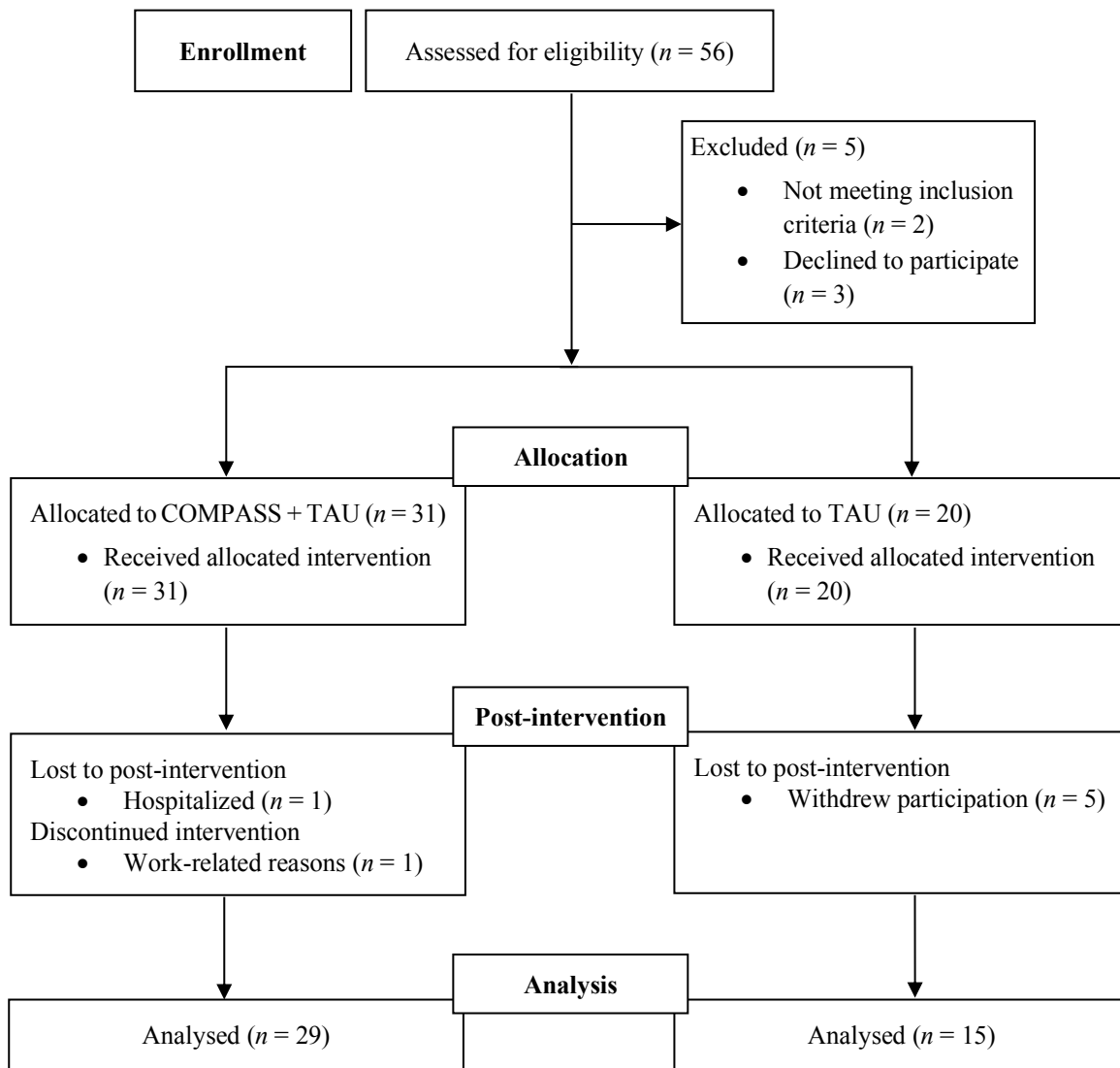
Figure 1. Flow of participants throughout the study.

Table 9
Sample's demographic and clinical characteristics and differences between groups

	Treatment group (n = 29)	Control group (n = 15)	U	p	η^2
Age					
M (SD)	29.07 (6.34)	26.80 (3.88)	182.50	.385	.02
Range	20-40	19-34			
Education level (years)					
M (SD)	13.17 (3.04)	13.67 (3.20)	203.50	.722	.00
Range	6-18	9-19			
Age of disorder onset					
M (SD)	24.93 (6.54)	25.27 (3.81)	183.50	.399	.02
Range	16-39	19-33			
Number of hospitalizations					
M (SD)	1.48 (1.43)	0.73 (0.59)	158.50	.107	.05
Range	0-5	0-2			

			Fisher's exact test	p	Cramer's V
Gender, *n (%)*			-	1.00	.02
Men	18 (62.1%)	9 (60%)			
Women	11 (37.9%)	6 (40%)			
Marital status, *n (%)*			1.651	.689	.22
Single	25 (86.2%)	15 (100%)			
Living with a Partner	1 (3.4%)	0			
Married	3 (10.3%)	0			
Work status, *n (%)*			2.796	.463	.26
Employed	13 (44.8%)	6 (40%)			
Unemployed	9 (31%)	6 (40%)			
Student	3 (10.3%)	3 (20%)			
Professional training	4 (13.8%)	0			
Diagnoses[a], *n (%)*			3.477	.480	.27
Schizophrenia	23 (79.3%)	10 (66.7%)			
Psychotic disorder NOS[b]	2 (6.9%)	0			
Schizophreniform disorder	1 (3.4%)	1 (6.7%)			
Schizoaffective disorder	2 (6.9%)	3 (20%)			
Brief Psychotic Disorder	1 (3.4%)	1 (6.7%)			
Type of intervention, *n (%)*			12.006	.005	.53
Psychiatry (only)	22 (75.9%)	5 (33.3%)			
Psychiatry & Psychology	5 (17.2%)	5 (33.3%)			
Psychiatry & Other[c]	2 (7%)	5 (33.3%)			

Note. [a]Diagnoses according to DSM-5. [b]NOS = Not Otherwise Specified. [c]Includes nursing, mental health community team and/or psychological interventions.

Acceptability

Attrition from the COMPASS intervention was approximately 3% (1 of 30). Only one participant dropped out during the intervention phase and it was due to changes in work schedule. The participant that was unable to complete post-assessments due to hospitalization had completed the intervention.

Baseline differences between groups

In clinician-rated measures of psychotic symptoms and functionality, the two groups did not significantly differ from one another. Nevertheless, though non-significant, the COMPASS group had higher levels of positive and negative psychotic symptoms (the first with intermediate magnitude) and difficulties in functionality in all areas (of small magnitude) (Cf. Table 2).

Regarding self-rated measures, the groups were not equivalent at the baseline. Significant differences were found with the COMPASS group presenting higher levels of entanglement with delusions, feelings of isolation in suffering, overidentification with thoughts, and lower levels of social safeness, safe positive affect, self-reassurance, ability to be mindful, self-kindness and feelings of common humanity than the TAU group. All significant differences were of intermediate to large magnitude. Differences of intermediate magnitude were also found (though non-significant) for empowerment, relationship with delusions, external shame, positive affect, self-reassurance, and fears of receiving compassion, with the COMPASS group presenting poorer results in all variables (Cf. Table 3).

Table 2

Means, standard deviations, medians and group differences in measures rated by clinician at baseline

	Treatment Group				Control Group				U	p	η^2
	n	M	SD	Mdn	n	M	SD	Mdn			
Outcome measures – Symptoms											
PANSS-P	26	12.69	5.39	12.00	15	10.53	3.56	9.00	151.00	.242	.04
PANSS-N	26	12.46	4.73	11.50	15	13.27	5.81	12.00	185.50	.799	.00
Outcome Measures – Functionality											
Socially useful activities	25	1.68	1.18	1.00	15	1.67	0.98	2.00	184.50	.934	.00
Personal and social relationships	25	1.96	1.14	2.00	15	1.67	0.98	2.00	158.50	.422	.02
Self-care	25	0.40	0.71	0.00	15	0.33	0.62	0.00	179.00	.825	.00
Disturbing and aggressive behaviours	25	0.20	0.50	0.00	15	0.00	0.00	0.00	157.50	.406	.02

Note: PANSS-P = Positive Symptoms Scale of the Positive and negative syndrome scale; PANSS-N = Negative Symptoms Scale of the Positive and negative syndrome scale.

Table 3

Means, standard deviations, medians and group differences in self-report measures at baseline

	Treatment Group				Control Group				U	p	η^2
	n	M	SD	Mdn	n	M	SD	Mdn			
Symptoms and relationship with symptoms											
Empowerment (Psychotic Symptoms)	22	3.52	0.70	3.50	15	3.90	0.90	4.22	105.50	.065	.09
Acceptance and Committed Action (Delusions)	17	17.65	3.66	18.00	7	20.29	3.55	21.00	37.50	.166	.08
Entanglement with Delusions	17	8.35	2.34	9.00	7	5.43	1.90	5.00	19.00	**.009**	**.28**
Struggling with Delusions	17	10.18	2.13	11.00	7	8.86	3.24	9.00	44.00	.349	.04
Anxiety	28	0.60	0.57	0.43	15	0.61	0.60	0.43	209.00	.980	.00
Depression (DASS21)	28	0.99	0.72	0.86	15	0.98	0.91	0.71	196.50	.730	.00
Stress Reactivity	29	120.14	37.10	113.00	15	110.56	31.24	114.00	184.00	.407	.02
External Shame	29	33.21	15.28	32.00	15	24.73	13.67	24.00	149.50	.092	.06
Functionality and positive emotion											
Social Safeness	29	34.00	6.96	34.00	15	40.13	7.87	41.00	124.00	**.020**	.12
Active positive Affect	29	16.03	5.93	17.00	15	18.60	8.05	20.00	162.50	.172	.04
Relaxed positive Affect	29	14.72	4.82	15.00	15	17.13	4.72	18.00	152.00	.104	.06
Safe positive affect	29	8.17	3.07	8.00	15	10.27	2.96	11.00	129.50	**.028**	.11
Self-to-self and self-others relationships											
Inadequate Self	29	18.94	7.85	16.00	15	16.13	7.24	15.00	172.50	.264	.03
Hated Self	29	5.31	4.91	4.00	15	4.27	5.86	1.00	162.50	.170	.04
Reassuring Self	29	17.03	5.85	17.00	15	21.53	5.96	23.00	126.00	**.023**	.12
Mindfulness of distressing experiences	29	39.24	14.24	36.00	15	42.53	15.82	45.00	181.00	.366	.02
Self-kindness	29	2.69	0.84	2.80	15	3.37	0.85	3.40	128.50	**.027**	.11
Self-judgement	29	3.01	1.07	2.80	15	2.75	0.91	3.00	195.50	.585	.01
Common humanity	29	2.59	0.80	2.50	15	3.40	0.81	3.25	86.00	**.001**	**.24**
Isolation	29	3.34	0.89	3.00	15	2.73	0.80	2.50	135.50	**.041**	.09
Mindfulness	29	2.75	0.60	2.75	15	3.60	0.85	3.50	92.00	**.002**	**.22**
Overidentification	29	3.18	0.92	3.00	15	2.67	0.86	2.50	138.00	**.048**	.09
Fears of giving compassion	29	19.14	7.74	19.00	15	17.67	7.96	19.00	202.00	.701	.00
Fears of receiving compassion	29	21.66	11.23	23.00	15	17.27	13.75	11.00	175.50	.298	.03
Fears of self-compassion	29	16.72	14.17	15.00	15	15.93	14.33	17.00	204.50	.747	.00

Note. Significant differences and effect sizes considered large according to Cohen (1988) ($\eta2 \geq .14$), even if non-significant, are highlighted in bold.

Differences at post-intervention

At post intervention, although the pattern of differences is similar with no significant differences (the majority of differences of small magnitude), it is relevant to note that in some functionality variables, namely difficulties in socially useful activities and difficulties in self-care, the COMPASS group had better results than the TAU group (Cf. Table 4).

In self-report measures, results show that all significant differences at baseline are no longer significant (and effect sizes were reduced with no large magnitudes found and several variables presenting no effect) with exception to social safeness (significant difference of intermediate magnitude). To note that at post-intervention, though the difference is non-significantly different and with small magnitude, the COMPASS group presented lower levels of fears of giving compassion than the TAU group (Cf. Table 5).

Pre-post differences within groups

Overall both groups significantly improved in positive and negative symptoms and some areas of functioning as assessed by the clinician, with moderate to large effect sizes. Although both groups improved in functioning related to socially useful activities and personal/social relationships, only the COMPASS group had improvement (moderate effect size) in functioning related to self-care. In what concerns improvement as evaluated by a significant other, only the COMPASS group was assessed. Although none of the differences were statistically significant, a trend towards perception of lower negative symptoms and higher community integration was observed (Cf. Table 6).

Regarding self-reported symptoms and relationship with symptoms, both groups improved perceived depressive symptoms, although only the COMPASS group improved anxiety symptoms. Relationship with delusions also only improved in the COMPASS group: acceptance towards delusions and committed action increased (with moderate effect size) and entanglement and struggling with delusions decreased (although the last improvement was non-significant and of small magnitude). On the other hand, the TAU group decreased levels of acceptance and committed action and increased entanglement and struggling with delusions (with moderate to strong effect sizes in the latter two). In the COMPASS group, external shame also decreased significantly with a strong effect size. There was a trend towards improvement in feelings of social safeness, active positive affect and safe positive affect improved in both groups (non-significant but with moderate effect sizes in the control group and small to moderate in the experimental group). The relaxed

positive affect increased in the COMPASS group while it decreased in the TAU group (Cf. Table 7).

In regards to process measures, the COMPASS group had improvement in all variables under study with moderate to strong effect sizes. Participants particularly improved in fears of compassion and negative components of self-compassion. Mindfulness abilities were the ones that showed less improvement (although effect sizes were moderate). In the TAU group, no significant changes were observed. Improvement with moderate effect size was found only for self-judgement, isolation and fears of self-compassion (though with lower magnitudes compared to the COMPASS group). Although mindfulness of distressing experiences improved, overall mindfulness (as a component of self-compassion) incongruently decreased (Cf. Table 8).

Table 4

Means, standard deviations, medians and group differences in measures rated by clinician at post-intervention

	Treatment Group				Control Group				U	p	η²
	n	M	SD	Mdn	n	M	SD	Mdn			
Outcome measures - Symptoms											
PANSS-P	26	10.26	5.61	8.00	15	8.27	1.58	8.00	165.00	.429	.02
PANSS-N	26	12.27	7.29	10.00	15	10.20	3.26	9.00	157.50	.314	.03
Outcome Measures – Functionality											
Socially useful activities	25	.84	.99	1.00	15	1.07	1.10	1.00	164.00	.525	.01
Personal and social relationships	25	.92	.86	1.00	15	.87	.74	1.00	185.00	.956	.00
Self-care	25	.08	.28	.00	15	.20	.56	.00	176.50	.761	.00
Disturbing and aggressive behaviours	25	.16	.47	.00	15	.00	.00	.00	165.00	.543	.01

Note. PANSS-P = Positive Symptoms Scale of the Positive and negative syndrome scale; PANSS-N = Negative Symptoms Scale of the Positive and negative syndrome scale.

Table 5

Means, standard deviations, medians and group differences in self-report measures at post-intervention

	Treatment Group				Control Group				U	p	η^2
	n	*M*	*SD*	*Mdn*	*n*	*M*	*SD*	*Mdn*			
Outcome measures – Symptoms and relationship with symptoms											
Empowerment (Psychotic Symptoms)	22	3.61	1.04	3.42	15	3.94	1.07	1.07	107.50	.075	.09
Acceptance and Committed Action (Delusions)	17	19.09	3.93	19.00	7	19.86	5.21	23.00	50.50	.576	.01
Entanglement with Delusions	17	7.12	2.20	6.00	7	6.00	1.73	6.00	42.50	.288	.05
Struggling with Delusions	17	9.98	2.45	11.00	7	9.86	3.34	11.00	56.00	.852	.00
Anxiety	28	0.46	0.53	0.36	15	0.53	0.78	0.29	210.50	.858	.00
Depression (DASS21)	28	0.84	0.87	0.57	15	0.69	0.76	0.43	188.00	.462	.01
Stress Reactivity	29	117.13	39.69	115.00	15	106.79	35.34	108.00	175.50	.298	.03
External Shame	29	28.16	15.54	26.00	15	23.73	12.72	27.00	198.50	.638	.01
Outcome Measures – Functionality and positive emotion											
Social Safeness	29	35.59	10.14	34.00	15	41.53	8.30	43.00	137.00	**.046**	.09
Active positive Affect	29	16.60	5.72	17.00	15	20.40	6.51	22.00	145.50	.074	.07
Relaxed positive Affect	29	15.03	5.07	14.00	15	16.73	4.07	18.00	177.50	.319	.02
Safe positive affect	29	9.14	3.47	9.00	15	11.07	3.33	12.00	141.50	.059	.08
Process Measures											
Inadequate Self	29	14.83	8.93	14.00	15	15.00	7.25	16.00	203.00	.719	.00
Hated Self	29	3.93	4.67	2.00	15	3.53	4.29	2.00	206.50	.782	.00
Reassuring Self	29	19.24	5.74	21.00	15	22.67	6.13	21.00	160.50	.155	.05
Mindfulness of distressing experiences	29	43.66	11.30	42.00	15	46.01	13.79	46.00	204.50	.747	.00
Self-kindness	29	3.03	.92	3.20	15	3.39	0.85	3.40	169.50	.233	.03
Self-judgement	29	2.44	.95	2.60	15	2.60	0.97	2.80	194.00	.560	.01
Common humanity	29	3.09	.81	3.00	15	3.47	1.00	3.00	159.50	.148	.05
Isolation	29	2.80	.90	2.75	15	2.48	0.88	2.25	161.50	.164	.04
Mindfulness	29	2.95	.58	3.00	15	3.43	0.78	3.25	140.50	.055	.08
Overidentification	29	2.65	.93	2.75	15	2.65	0.97	2.50	215.50	.960	.00
Fears of giving compassion	29	14.55	11.96	14.00	15	17.27	8.85	16.00	176.50	.309	.02
Fears of receiving compassion	29	16.55	11.96	14.00	15	15.67	12.84	13.00	202.50	.710	.00
Fears of self-compassion	29	10.10	11.66	5.00	15	12.73	13.65	11.00	211.50	.881	.00

Note. Significant differences are highlighted in bold.

Table 6
Differences pre to post intervention in the treatment and control groups

Symptoms		Treatment Group										Control Group								
		Pre			Post							Pre			Post					
	n	M	SD	Mdn	M	SD	Mdn	Z	p	r	n	M	SD	Mdn	M	SD	Mdn	Z	p	r
Outcome measures – Symptoms																				
PANSS-P[1]	26	12.69	5.39	12.00	10.26	5.61	8.00	2.519	**.012**	**.49**	15	10.53	3.56	9.00	8.27	1.58	8.00	2.952	**.003**	**.76**
PANSS-N[1]	26	12.46	4.73	11.50	12.27	7.29	10.00	2.078	**.038**	**.41**	15	13.27	5.81	12.00	10.20	3.26	9.00	2.825	**.005**	**.73**
Negative symptoms[2]	21	22.10	6.63	24.00	20.81	6.87	20.00	1.065	.287	.23										
Psychotic symptoms[2]	21	11.71	2.72	12.00	12.14	4.33	11.00	.436	.663	.10										
Affective symptoms[2]	21	15.95	8.39	15.00	15.71	6.01	15.00	.765	.444	.10										
Outcome Measures – Functionality																				
Socially useful activities[1]	25	1.68	1.18	1.00	.84	.99	1.00	2.506	**.012**	**.50**	15	1.67	.98	2.00	1.07	1.10	1.00	1.964	**.050**	**.51**
Personal and social relationships[1]	25	1.96	1.14	2.00	.92	.86	1.00	3.130	**.002**	**.63**	15	1.67	.98	2.00	.87	.74	1.00	2.972	**.003**	**.77**
Self-care[1]	25	.40	.71	.00	.08	.28	.00	1.941	**.052**	**.39**	15	.33	.62	.00	.20	.56	.00	.707	.480	.18
Disturbing and aggressive behaviours[1]	25	.20	.50	.00	.16	.47	.00	.333	.739	.07	15	.00	.00	.00	.00	.00	.00	.000	1.000	.00
Independence and use of resources[2]	21	28.71	4.66	28.00	28.76	6.21	29.00	.879	.379	.19										
Community participation[2]	21	15.62	4.13	16.00	16.14	3.26	16.00	.206	.837	.05										
Social network[2]	21	28.28	4.94	29.00	29.21	5.08	30.60	.887	.375	.08										
Emotional connection[2]	21	14.90	2.68	15.00	15.29	2.39	16.00	.588	.557	.12										
Community support[2]	21	20.54	4.14	21.00	21.14	5.34	22.00	.994	.320	.07										

Note. [1]Assessed by clinician; [2]Assessed by a significant other. Significant differences and effect sizes larger than .30 (even when non-significant) are highlighted in bold. PANSS-P = Positive Symptoms Scale of the Positive and negative syndrome scale; PANSS-N = Negative Symptoms Scale of the Positive and negative syndrome scale; Negative Symptoms = Negative symptoms Frequency subscale of the Family Questionnaire; Affective Symptoms = Affective Symptoms Frequency subscale of the Family Questionnaire; Psychotic Symptoms = Psychotic Symptoms Frequency subscale of the Family Questionnaire; Independence and use of resources = Physical community integration – independence and use of community resource subscale of the Community Integration Scale for Adults with Psychiatric Disorders (CIS-APD); Community participation = Physical community integration – community participation and leisure activities subscale of the CIS-APD; Social network = Psychosocial community integration – social network dimension and characteristics subscale of the CIS-APD; Emotional connection = Psychosocial community integration – emotional connection subscale of the CIS-APD; Community support = Psychosocial community integration – community support subscale of the CIS-APD.

Table 7

Differences pre to post intervention in self-report outcome measures in the treatment and control groups

| | Treatment Group | | | | | | | | | | Control Group | | | | | | | | | |
| | Pre (M1) | | | Post (M2) | | | | | | | Pre (M1) | | | Post (M2) | | | | | | |
	n	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*Z*	*p*	*r*	*n*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*Z*	*p*	*r*
Outcome measures – Symptoms and relationship with symptoms																				
Empowerment (Psychotic Symptoms)	22	3.52	.70	3.50	3.61	1.04	3.42	.081	.935	.02	15	3.90	.90	4.22	3.94	1.07	1.07	.031	.975	.25
Acceptance and Committed Action (Delusions)	17	17.65	3.66	18.00	19.09	3.93	19.00	1.775	.076	**.43**	7	20.29	3.55	21.00	19.86	5.21	23.00	.137	.891	.05
Entanglement with Delusions	17	8.35	2.34	9.00	7.12	2.20	6.00	**2.026**	**.043**	**.49**	7	5.43	1.90	5.00	6.00	1.73	6.00	1.190	.234	**.45**[a]
Struggling with Delusions	17	10.18	2.13	11.00	9.98	2.45	11.00	.239	.811	.06	7	8.86	3.24	9.00	9.86	3.34	11.00	1.633	.102	**.62**[a]
Anxiety	28	.60	.57	.43	.46	.53	.36	1.771	.077	**.33**	15	.61	.60	.43	.53	.78	.29	.000	1.000	.00
Depression	28	.99	.72	.86	.84	.87	.57	1.867	.062	**.35**	15	.98	.91	.71	.69	.76	.43	1.261	.207	**.69**
Stress Reactivity	29	120.14	37.10	113.00	117.13	39.69	115.00	.980	.327	.18	14	110.56	31.24	114.00	106.79	35.34	108.00	.094	.925	.02
External Shame	29	33.21	15.28	32.00	28.16	15.54	26.00	**3.165**	**.002**	**.59**	15	24.73	13.67	24.00	23.73	12.72	27.00	.594	.552	.15
Outcome Measures – Functionality and positive emotion																				
Social Safeness	29	34.00	6.96	34.00	35.59	10.14	34.00	.914	.361	.17	15	40.13	7.87	41.00	41.53	8.30	43.00	1.543	.123	**.40**
Active positive Affect	29	16.03	5.93	17.00	16.60	5.72	17.00	.674	.501	.17	15	18.60	8.05	20.00	20.40	6.51	22.00	1.433	.152	**.37**
Relaxed positive Affect	29	14.72	4.82	15.00	15.03	5.07	14.00	1.065	.287	.20	15	17.13	4.72	18.00	16.73	4.07	18.00	.671	.502	.17
Safe positive affect	29	8.17	3.07	8.00	9.14	3.47	9.00	1.679	.093	**.31**	15	10.27	2.96	11.00	11.07	3.33	12.00	1.408	.159	**.36**

Note. Significant differences and effect sizes larger than .30 (even when non-significant) are highlighted in bold. Effect sizes with the superscript [a] refer to differences observed in the opposite direction (patients worsening).

Table 8

Differences pre to post intervention in self-report process measures in the treatment and control groups

| | Treatment group | | | | | | | | | | Control group (*n* =15) | | | | | | | | | |
| | Pre (M1) | | | Post (M2) | | | | | | | Pre (M1) | | | Post (M2) | | | | | |
	n	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*Z*	*p*	*r*	*n*	*M*	*SD*	*Mdn*	*M*	*SD*	*Mdn*	*Z*	*p*	*r*
Process Measures																				
Inadequate Self	29	18.94	7.85	16.00	14.83	8.93	14.00	3.123	**.002**	**.58**	15	16.13	7.24	15.00	15.00	7.25	16.00	.996	.319	.26
Hated Self	29	5.31	4.91	4.00	3.93	4.67	2.00	2.554	**.011**	**.47**	15	4.27	5.86	1.00	3.53	4.29	2.00	.870	.384	.22
Reassuring Self	29	17.03	5.85	17.00	19.24	5.74	21.00	2.124	**.034**	**.39**	15	21.53	5.96	23.00	22.67	6.13	21.00	.755	.450	.19
Mindfulness of distressing experiences	29	39.24	14.24	36.00	43.66	11.30	42.00	1.840	.066	**.34**	15	42.53	15.82	45.00	46.01	13.79	46.00	1.226	.220	**.32**
Self-kindness	29	2.69	.84	2.80	3.03	.92	3.20	2.444	**.015**	**.45**	15	3.37	.85	3.40	3.39	.85	3.40	.090	.928	.02
Self-judgement	29	3.01	1.07	2.80	2.44	.95	2.60	3.311	**.001**	**.61**	15	2.75	.91	3.00	2.60	.97	2.80	1.377	.168	**.36**
Common humanity	29	2.59	.80	2.50	3.09	.81	3.00	2.733	**.006**	**.51**	15	3.40	.81	3.25	3.47	1.00	3.00	.032	.975	.00
Isolation	29	3.34	.89	3.00	2.80	.90	2.75	3.412	**.001**	**.63**	15	2.73	.80	2.50	2.48	.88	2.25	1.557	.119	**.40**
Mindfulness	29	2.75	.60	2.75	2.95	.58	3.00	1.793	.073	**.33**	15	3.60	.85	3.50	3.43	.78	3.25	1.074	.283	.28
Overidentification	29	3.18	.92	3.00	2.65	.93	2.75	3.622	**.000**	**.67**	15	2.67	.86	2.50	2.65	.97	2.50	.134	.893	.03
Fears of giving compassion	29	19.14	7.74	19.00	14.55	11.96	14.00	3.160	**.002**	**.82**	15	17.67	7.96	19.00	17.27	8.85	16.00	.157	.875	.04
Fears of receiving compassion	29	21.66	11.23	23.00	16.55	11.96	14.00	2.886	**.004**	**.75**	15	17.27	13.75	11.00	15.67	12.84	13.00	.440	.660	.11
Fears of self-compassion	29	16.72	14.17	15.00	10.10	11.66	5.00	3.357	**.001**	**.87**	15	15.93	14.33	17.00	12.73	13.65	11.00	1.598	.110	**.41**

Note. Significant differences and effect sizes larger than .30 (even when non-significant) are highlighted in bold.

Discussion

Following up on the preliminary results that indicated potential usefulness of the COMPASS intervention (Martins et al., 2018), this study's main aim was to further evaluate the intervention's feasibility, acceptability and potential benefits in a larger sample of participants in comparison to a TAU-only control group.

COMPASS had a low rate of attrition; no adverse effects were reported. Although further investigation is needed in this regard, the COMPASS intervention seems feasible, well accepted and subjectively beneficial for people with early psychosis. Qualitative interviews on the experience of being in the COMPASS groups were conducted as a part of the assessment protocol and in future studies we will explore participants' perception of the experience of being in the group.

Overall, the COMPASS group had poorer results at baseline when comparing to the control group. Although differences in symptoms and functionality (as assessed by the clinician) were of small to intermediate magnitude, the COMPASS group had significantly (intermediate to strong magnitude) less adaptive abilities to deal with delusions, psychotic symptoms in general (e.g. lower empowerment), thoughts (e.g. overidentification) and psychological suffering (higher tendencies to feel isolated, fears of receiving compassion). These were combined with lower levels of positive affect, higher levels of shame and maladaptive self-to-self-relationship. At post-intervention, these differences were strongly reduced. Moreover, the COMPASS group showed better results regarding functionality and fears of compassion. Differences between groups at baseline are not desirable because when groups are equivalent differences at post-intervention are expected to be indicative of the therapy's efficacy. Nevertheless, these results indicate that with the intervention, the COMPASS group, that initiated the study with poorer results, improved and become closer to the control group that did not seem to improve in the same magnitude.

When we explore the differences within groups the results are congruent with the above mentioned. Although both groups improved in secondary outcomes, such as psychotic symptoms and functionality (work and social-related difficulties), as it was expected since both groups are receiving pharmacological and psychosocial interventions, the COMPASS group improved difficulties with self-care, a dimension of functioning maybe less dependent on pharmacological treatment and relationship participants have with symptoms. In fact, recent studies have shown less responsiveness in this item of the PSP (Chiu, Hung, Huang, Lee, & Hsieh, 2018). COMPASS seemed to have improved the

participants' ability to experientially accept delusional thoughts as they are, without becoming overidentified and entangled, on one hand, or struggling and trying to eliminate them, on the other. Ultimately, it seems to have lessen the influence delusional thoughts have in their lives. On the contrary, experiential avoidance and lack of committed action increased in the TAU group. These results go in line with previous studies with contextual approaches (that aim to change the relationship people have with one's internal experience) in which people with psychosis increased levels of psychological flexibility after acceptance-based interventions (Wakefield, Roebuck, & Boyden, 2018). In people with psychosis, experiential acceptance has been associated with better outcomes such as not feeling overpowered by symptoms, being willing to ask for help, feeling hopeful and having a purpose (Siqueira & Oades, 2015). Nevertheless, to our knowledge, this is the first study to explore the benefits in a delusion-specific acceptance and committed action measure.

Regarding distress, in addition to decreases in depressive symptoms, only the COMPASS group significantly improved anxiety symptoms and current feelings of external shame. In fact, as a CFT-based intervention, throughout the COMPASS program internal and external shame are contextualized as outputs of the threat-defense system (key response to social threat), thus normalized, and compassion exercises and practices are taught to deal with shame feelings. Other contextual interventions in general (Martins et al., 2017), and compassion-based approaches in particular (Braehler, Gumley, et al., 2013; Laithwaite et al., 2009) have shown similar results in decreasing negative affect and shame feelings in people with psychosis. Reducing shame in people with psychosis seems to be pivotal for recovery since it has been widely associated with higher levels of psychotic symptoms (mediating its relationship with social safeness) (Argel, 2018; Castilho et al., 2017), post-psychotic emotional distress (Birchwood, 2003; Michail & Birchwood, 2013; Turner et al., 2013; Upthegrove, Ross, Brunet, McCollum, & Jones, 2014), experienced stigma (mediating its relationship with depression) (Wood & Irons, 2017) and less personal recovery (Wood & Irons, 2016).

A trend of improvement was observed in both groups in feelings of social safeness, active positive affect and safe positive affect. We expected a greater improvement in the COMPASS group in feeling safe in social relationships and in general since the focus of compassion-focused therapy is in activating and further developing the soothing system. Nevertheless, it is possible that other psychosocial interventions present in TAU (e.g. group psychoeducation sessions) might have had these benefits. Relaxed positive affect only

improved in the COMPASS group, which is an important outcome in people with psychosis. It is known that people with psychosis present higher levels of stress reactivity (Lincoln, Köther, Hartmann, Kempkensteffen, & Moritz, 2015), an hyperactive threat-defensive system (Gumley et al., 2010), therefore improving abilities to rest, remain calm and relax, through the de-activation of the threat-defense system, might be useful. Mindfulness improving relaxation abilities in people with psychosis have been previously reported (Brown, Davis, Larocco, & Strasburger, 2010).

In what concerns the specific processes hypothesized to be core in mindfulness, acceptance and compassion-based interventions, significant changes (moderate to large magnitude) were only observed in the COMPASS group.

COMPASS intervention, as CFT-rooted intervention, specifically focus on reducing maladaptive forms of self-to-self relationship, particularly aiming at reducing levels of self-criticism. Self-criticism, as the key strategy to deal with/avoid feelings of shame (Gilbert, 2010), has been shown as highly prevalent in people with psychosis (Hutton, Kelly, Lowens, Taylor, & Tai, 2013), with negative consequences regarding psychotic symptoms, stress reactivity and social functioning (Connor & Birchwood, 2013; Martins, Macedo, Barreto-Carvalho, Pereira, & Castilho, 2018). After the interventions, participants were able to refrain from self-criticism (reducing feelings of inadequacy and hatred for the self) and engage in more adaptive ways of relating with the self (increasing levels of self-reassurance). In the COMPASS intervention, self-criticism is conceptualized as a natural response to cope with shame, thus having a protective intention (e.g. in order to improve the self or get rid of unwanted parts of the self) that ends up having a pervasive effect (vicious circle). Other compassion-based interventions for psychosis have previously reported improving associated variables such as self-acceptance (Johnson et al., 2011) or self-esteem (Laithwaite et al., 2009).

Although an important reduction was observed in the over-reactive with the internal experience (e.g. struggling, entanglement, avoidance), changes in mindfulness in general and mindfulness of distressing experiences were not significant and had the smallest magnitude (although they were moderate). Smaller changes in mindfulness, when comparing to compassion-related variables, were expected. In COMPASS, although mindfulness is presented and trained as the necessary basis for all compassion-based meditation practices, mindfulness practices are used to help people ground themselves and cope with internal experiences with a specific quality of attention (non-judgemental, accepting, open and curious). Nevertheless, emotional regulation is fostered through

affiliation and engagement with the soothing-affiliative system (and not primarily through attention). Therefore, the core competencies trained in COMPASS intervention aim to develop kindness, warmth and genuine connection with others and the self in times of suffering, competencies that improved significantly. In fact, COMPASS group showed improved abilities to understand suffering as a part of human experience, not feeling alone in their suffering, and being able to reassure themselves in a kinder way.

These discussed above results go in line and reinforce the previous findings of compassion-focused interventions improving compassion narratives in people with psychosis (Braehler, Gumley, et al., 2013). Improving self-compassion abilities seems to be important in people with psychosis since it has been inversely associated with positive psychotic symptoms (e.g. distress and severity of voices – Dudley, Eames, Mulligan, & Fisher, 2018), negative symptoms and cognitive disorganization (Gumley & Macbeth, 2014), emotional discomfort (Eicher, Davis, & Lysaker, 2013), fears of madness, suicide ideation, unfavourable social comparison, negative self-schemas (Collett, Pugh, Waite, & Freeman, 2016), and depressive symptoms (Collett et al., 2016; Gonçalves, 2016; Viegas, 2013)

On the other hand, the COMPASS intervention has a specific focus on reducing fears of affiliative emotions, mainly fears of compassion, an important variable in people with psychosis due to the known prevalence of insecure attachment styles in this population (Berry, Barrowclough, & Wearden, 2007). The results show that the improvement in fears of compassion (in all three flows) were the strongest improvements at post-intervention. Working on fears of compassion is one of the innovations of the COMPASS interventions. There is a specific session on which fears of compassion are activated and are then contextualized as a result of the activation of the threat-defence system when in the presence of compassion clues (e.g. due to aversive early experiences). Throughout the intervention, participants are encouraged to be aware of fears of compassion, which are normalized, and try to activate the soothing system when they arise. Helping patients be aware and deal with fears of compassion is an important part of the recovery both considering the benefits of compassion discussed above; and taking into account that fears of compassion have been associated with higher levels of paranoid ideation and distress arising from paranoia (Carvalho, 2015; Martins et al., 2017), feelings of self-disgust (Carvalho, 2015) and negative symptoms (Cruz, 2017).

Future studies should aim at understanding the relationships between the outcome and process measures. We are currently studying the mechanisms behind the COMPASS

benefits, considering both quantitative measures of contextual processes (e.g. self-criticism, self-compassion, compassion, mindfulness) and qualitative information based on participants' narratives of their experiences with the intervention. We also aim to explore if the benefits of COMPASS are able to be maintained in the long term.

Although the obtained results are encouraging, the present study has some limitations that are important both regarding generalization of results and in informing future research. Limitations can be divided into sample-related and design-related. Regarding sample-related variables, although comparable with or larger than previous studies with contextual therapies for people with psychosis (Braehler, Gumley, et al., 2013; Laithwaite et al., 2009), the sample size in this study is relatively small, particularly in the TAU group. Although significance tests were complemented with effect size analysis, some differences might not have been detected due to the study being eventually underpowered. Moreover, some statistical choices were influenced by the sample size (e.g. p values non-corrected for multiple comparisons) and more robust statistical analysis were not possible. Although the inclusion criteria were relatively broad, the non-representative nature of the sample, might also encompass limitations in generalizing the results (e.g. for people with other clinical characteristics, for instance, mood disorders with psychotic symptoms, people with enduring psychosis). In relation to design-related limitations, the non-randomized, non-blind, allocation of the participants to both groups (although we divided recruitment in two phases to reduce bias) might have introduced bias that we were not able to control. Second, although groups did not differ significantly at baseline in outcome measures, they did in what regards to process measures, with COMPASS group presenting overall poorer results. This might have masked the degree to which groups differed at post-intervention, given that, even though the COMPASS group improved to the point where the initial differences were no longer significant, the TAU group still had better results. Third, the fact that TAU included different types of interventions including psychosocial interventions (though excluding contextual therapies) and that it was free to vary throughout the study limits our confidence that the changes observed over time are only attributable to the effects of COMPASS intervention. On the other hand, groups did differ in the type of interventions included in TAU. While TAU reported an equal distribution in the different types of intervention (with more than half of participants being engaged with psychosocial interventions) the great majority of COMPASS group's participants received mainly intervention provided by their psychiatrist with less than 30% reporting any kind of psychosocial intervention at baseline. This reduces the influence of

confounding variables in the COMPASS group (with the changes in psychological processes being more likely due to the COMPASS intervention) and it might explain, on the other hand, the therapeutic gains in psychosocial variables in the TAU group. Still regarding confounding variables, we were not able to control the effect of antipsychotic (and other) medication in both groups. Given the preliminary and exploratory nature of this pilot study, we chose to perform a practical trial using a humbler methodology. Practical studies, though less robust to measure efficacy (the effect of the intervention in ideal circumstances), aim to investigate the effectiveness and potential benefits of the intervention under real clinical settings (Banarjee, 2003). Future studies should aim to replicate these findings, further understanding the benefits of the COMPASS intervention, using more robust designs (e.g. Randomized Controlled Trial) with larger samples.

In spite of limitations, the present study preliminary shows that the COMPASS program is an acceptable, feasible and beneficial group intervention for people with psychosis. COMPASS seems to help people with psychosis (further) develop their mindfulness and acceptance towards experience abilities. These abilities are the roots from which the main goals of COMPASS are achieved: cultivating a compassionate self that improves self-to-self and self-to-others relationships. This aids personal recovery and translates into a way of experiencing the world characterized by safeness, connectedness, and vitality, leading to more meaningful lives.

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CHAPTER V

GENERAL DISCUSSION

V. General Discussion

The aim of the present chapter is to provide a synthesis and an integrative discussion of the results obtained with this research project, along with some of its limitations and their clinical and research implications. Although in each study, the results and their implications are discussed in the light of their limitations and strengths, the present chapter will integrate the findings into the broader research framework that underlid the present project.

The discussion is rooted upon the general and specific research aims presented in Chapter 2:

a) to contribute to the development and validation of adequate assessment tools;

b) to extend the understanding on processes underlying the development and maintenance of psychotic symptoms and their impact; and

c) to develop, implement and evaluate a new compassion-based group intervention for people with early psychosis.

Therefore, this discussion will be divided in three parts and the results, conclusions and reflections from the review, descriptive and empirical studies will be jointly discussed within each general aim. Limitations of studies will be presented and also contextualized and their implications to the generalizability of our results will be disclosed. Directions for future research will be discussed, not only in general (lines of research that might emerge from this project's findings) but also the hypotheses that are currently under study in the continuity of this project.

1. Synthesis and integrative discussion of the main findings

The conceptualization and treatment approaches to psychosis has been evolving in the last decades. Notwithstanding their numerous advantages, categorical representations of psychosis along with the current diagnostic systems are now understood as not definite, as they are practical and clinical consensus-based, and thus not rooted on explanative/etiological theories or underlying causal mechanisms (American Psychiatric Association, 1998). Dimensional representations (Van Os & Tamminga, 2007) are now argued as a necessary complementary approach to the understanding of psychotic

symptoms. These approaches account for different types of continuity in the psychotic experiences (e.g. continuum of psychotic experiences in the non-clinical population; continuum across psychotic disorders) (Craddock et al., 2009; Van Os et al., 2009). This perspective prepares the field to new therapeutic approaches based on the fact that psychotic experiences are part of a broad range of human experiences and are not limited to a restricted group of patients. Moreover, studies have shown that variables such as distress, interference and coping mechanisms (e.g. emotional regulation) are key to differentiate clinical and non-clinical samples (Badcock & Hugdahl, 2012; Johns et al., 2014; Waters et al., 2012). This, along with the growing interest for the distressing experiences occurring before, during and after a psychotic episode) (Birchwood, 2003), such as post-psychotic depression, post-psychotic trauma, social anxiety, substance abuse, motivated the quest for specific interventions with different therapeutic targets more focused on emotional regulation strategies and self-experience.

From the intervention perspective, although pharmacological treatment remains essential to address symptoms and promote functionality (objective recovery), it is key that people with psychosis are able to therapeutically address subjective aspects of recovery. The recovery model has long been advocated for people with psychosis, with intervention aiming at aiding people pursue and embrace a more meaningful (Silverstein & Bellack, 2008), empowered, self-directed life, focusing on strengths (SAMHSA, 2005) and based on hope and optimism about the future (Leamy, Bird, Le Boutillier, Williams, & Slade, 2011). The quality of relationships with others is also a valued aspect with connectedness, support from others and sense of belonging (e.g. to a community) emerging as important targets (Leamy, et al., 2011), as well as the relationship with the self (broader self-concept - Silverstein & Bellack, 2008 – and rebuilding a positive sense of identity – Leamy et al., 2011). This view is far more humanistic in that it adopts a patient-centered perspective. It is also more ecological because it considers an individualized perspective of the patient's context. Moreover, it is more effective in integrating biopsychosocial factors, thus enhancing interpersonal and intrapersonal resources which are crucial to individual's recovery.

Cognitive-behavioural therapy has witnessed the same interest in shifting from the symptom/syndrome-focused approach towards a more person-based approach, focusing on definitely recovery-congruent therapeutic targets, such as valued living directions, relationship with thoughts, emotions, and memories, self-to-self relationship, acceptance and willingness towards experiences and non-judgmental attention. The recovery

principles of fostering hope, empowerment, sense of belonging and positive self-experience can be seen as a broad framework in which the so-called 'third wave' (Hayes, 2004) or 'contextual cognitive-behavioural' (Hayes, Villatte, Levin, & Hildebrandt, 2011) approaches to psychotic disorders may be understood as key psychological interventions.

This project, "Cultivating safeness from the inside out: understanding the processes and developing a compassion-based intervention for psychosis" is rooted upon the existing knowledge on contextual approaches, particularly the Compassion-focused Therapy theoretical rationale, as they were adapted to psychosis. Its broad aim is to further develop and complement the existing literature, and in the subsections bellow we will specifically contextualize the need for the studies conducted within each general aim and discuss the main findings.

1.1. Development and validation of assessment tools.

The recovery-informed interventions that have shown efficacy and effectiveness in people with psychosis, and the consequently necessary shift, advocated both by the recovery movement and contextual behavioural therapies, from symptom-based to person-focused assessment and intervention, boosted new advances in psychological assessment. Although recovery-based assessment tools do exist, diagnostic interviews, instruments designed to measure symptomatology and pharmacological treatment seem somewhat aside of this movement. Although understandable this fact encompasses several consequences: a) clinicians and researchers are usually forced to combine different assessment tools to have an integrative overview of the patient; b) several recovery-relevant outcomes and key processes within the contextual approaches (e.g. relationship with symptoms) are not adequately assessed; c) the tendency to present frequency and/or intensity of symptoms as outcomes remains even when theoretically driven therapeutic targets are different.

The **Descriptive study I** and the **Empirical study I** both regard the development and preliminary psychometric evaluation of the Clinical Interview for Psychotic Disorders (CIPD). The CIPD combines the categorical and dimensional representations of psychosis and it provides for: a) diagnosis and differential diagnosis of schizophrenia-spectrum disorders, mood disorders with psychotic features and substance induced psychotic disorders, following the DSM 5 criteria; b) duration, frequency, interference and severity of symptoms from the clinician perspective; c) interference, conviction (for delusions), and sense of empowerment in relation to symptoms (patient-rated); d) other psychosocial

correlates of symptoms (e.g. reasons for substance use, psychosis-related social anxiety and trauma). The **Descriptive**/Review **study I** provides a detailed description of the interview and its development process. We also aimed to understand the pertinence of the items comprised in the interview and the clarity of language considering the target population. The experts' panel consisted of clinical psychologists, psychiatrists, nurses and social workers (the later specialized in psychiatry settings) and professional experience in mental health settings varied between five and twenty-three years (on average in each professional category). The expert panel evaluation revealed high scores both in terms of the pertinence of questions for diagnosis, phenomenology assessment, and psychosocial correlates of symptoms, as well as regarding language suitability for the psychosis population. In **Empirical study I** we further studied the CIPD, using a multimethod design, in what regards to inter-rater reliability, convergent validity and feasibility and acceptability. In a sample of thirty participants with psychotic disorders, the CIPD showed agreement in diagnosis above 90% between raters and above 70% with the previously established medical diagnosis. Percentages were even higher when the diagnosis was schizophrenia (the most prevalent diagnosis in the sample). The majority of items (26/29) presented good reliability, thus suggesting that CIPD is a reliable instrument to assess psychotic symptoms and psychosis diagnosis. Significant associations were found between specific CIPD scores and PANSS scores for several positive and negative symptoms. CIPD positive symptoms' scores were associated with GAF scores and its negative symptoms' scores with PSP social and personal relations. Qualitative analysis showed that overall patients found the CIPD useful, detailed and adequate for their needs, potentially aiding individualized treatment and monitoring clinical evolution. Considering the relevance of thoroughly studying the psychometric properties of a clinical interview, the CIPD validation was proposed to independent funding. The project "The Clinical Interview for Psychotic Disorders: Validation study" (funded by Janssen-Cilag, Ld.; 2017-2019) is currently further investigating several psychometric indicators of the CIPD validity, reliability and clinical utility (e.g. interrater agreement, sensitivity, specificity, [specific sections'/scores'] convergent and divergent validity, predictive validity, acceptability) in a larger sample (estimated n = 150). With adequate replication of these results and further study, the CIPD seems to be a useful instrument to provide clinicians and researchers with a detailed and integrated assessment of patients' symptoms, both to perform diagnosis and to adequately assess more recovery-oriented therapeutic targets (e.g. empowerment in relation to symptoms, interference, conviction). One of the CIPD's most important

innovations is that it provides the patient's perspective on their symptoms, in accordance with recovery-based recommendations (Leamy et al., 2011). The assessment of psychotic symptoms with the CIPD can even be a part of the therapeutic intervention, since participants considered the interview as an opportunity for empathy, validation, normalization and psychoeducation, thus aiding the recovery process.

The Descriptive/**Review study II** consists in a narrative review of existing self-report instruments designed to measure delusions and their dimensions and characteristics. From this review we concluded that no scales (other than the one developed in Empirical study II, complementary to this review) were able to assess psychological flexibility in the context of delusions (i.e. participants' ability to perceive delusions as thoughts, to be aware without reaction or judgment and to attain goals and pursue valued life directions independent of delusions). The Willingness and Acceptance of Delusions (WADS), developed and preliminarily studied in the **Empirical study II**, is a brief scale developed to assess one's relationship with delusional thoughts (defined at the beginning in a brief, normalizing and de-shaming way) in terms of three aspects (three subscales): acceptance of delusions and committed action (i.e. being aware of delusions without reacting, accepting them, separating the self from delusions and being able to act with commitment while having delusions); non-entanglement (ability to defuse from delusions non-judgmental ly); and non-struggling with delusions (capability to let delusions emerge without fighting them or trying to make them disappear). Results showed that the scale has adequate reliability and validity (associations with mindfulness and satisfaction with life). Although in need for replication in larger samples, this scale bridges an important gap in the literature. Considering that a measure designed to assess psychological flexibility in relation to voices was already available, the **Empirical study IV** aimed at translating, adapting and studying the psychometric properties of the Voices Acceptance and Action Scale (VAAS-12; Shawyer et al., 2007) in the Portuguese population. The Portuguese version of the VAAS-12 includes two (alternative) factors: the non-interference and action subscale (intention to move towards valued life directions promoting the non-interference of voices in ones' life) and the acceptance and life functioning subscale (accepting way of dealing with voices), both with adequate internal consistency and construct validity (with beliefs about voices). This study not only benefits the Portuguese research with the VAAS-12 adaptation and psychometric study, but also the international research in the way that further explores the psychometric properties of a widely used scale and proposes an alternative, theoretically congruent, factor structure that should be explored in future

studies. Taken together, empirical studies II and IV provide an important contribution to the assessment of positive symptoms of psychosis from a recovery and 'third wave' perspective. Outcome and process studies in this area benefit from valid and reliable measures of psychological flexibility adapted for people with psychosis and their experiences (as it has been previously argued that symptom specific contextual measures might be more useful than general measures – MacKenzie & Kocovski, 2010).

Congruent with this perspective of assessing patients' perspectives and recovery-relevant aspects of clinical variables, **Empirical study III** sought to develop and empirically test a new scale to assess anti-psychotic medication adherence. Contextual models, namely psychological flexibility-based models, have been previously adapted for medication (non)adherence in people with psychosis. Experiential avoidance, cognitive fusion, lack of committed action, and distress arising from illness and its management (internal barriers) interact with external barriers to promote psychological inflexibility in the form of values-inconsistent medication non-adherence (Moitra and Gaudiano, 2016). The Anti-psychotic Medication Adherence Scale (AMAS) measures clinical, and practical aspects recognized as key predictors of medication adherence in the literature. It comprises two factors: barriers to adherence (practical and medication-related, cognitive, behavioural and emotional) and positive beliefs about medication (assesses at which degree participants consider their medication to originate positive effects, in general, and specifically in preventing relapse and making thought processes clearer). Results showed the scale had acceptable internal consistency and congruent validity. Considering the growing evidence of the importance of subjective person-related psychological factors in the adherence-non-adherence continuum, assessing barriers of different types and positive beliefs regarding medication might be pivotal in assessing efficacy of interventions. AMAS has the advantage of measuring (non)adherence as a continuum (as opposed to the yes/no format in other adherence scales) and of including psychological aspects, such as shame and stigma, that should be targeted in psychosocial interventions.

Overall, the studies presented in this section intended to contribute to the improvement of the psychological assessment in people with psychosis. In order to comply with the paradigm shift to person-based assessment and to break with the long tradition of clinician-only symptom assessment, instruments (either self-report or clinical interviews) that involve the patient as an active agent in the assessment are needed.

It has been argued that for people with psychosis, not only the narrative is important (in the way that it makes sense of psychotic experiences within the person's biographical

context) but it is also essential to promote acceptance as the attitude of understanding-based self-distancing, on one hand, and facilitate commitment (acting in a way that is consistent with one's goals and values), on the other (Pérez-Álvarez et al., 2016). From this perspective, assessing acceptance and action in relation to psychotic symptoms is of great relevance. Moreover, psychological correlates of symptoms need to be assessed in a reliable and valid way in order to measure the new emerging intervention targets. Also, considering this population's clinical characteristics (e.g. cognitive and attention deficits, impaired social cognition skills, hyper or hypoactivation, among others) brief and symptom-specific instruments are of great clinical relevance.

1.2. Understanding of processes underlying the development and maintenance of psychotic symptoms and their impact.

In the past years, the perspective of psychotherapeutic treatment, also CBT, as a set of protocols for DSM/ICD-defined syndromes has been gradually shifting to a 'next generation' of treatments, in which the so-called 'third wave' CBT can be inserted, focusing specifically on processes of change – Process-Based Therapies (PBT). In this context, mediation and moderation studies are needed to understand the therapeutic processes (i.e. "theory-based, dynamic and multilevel changes that occur in empirically established sequences oriented toward the desirable outcomes") behind theory-grounded, evidence-based interventions (Hofmann & Hayes, 2018). It seems also important to understand the relationships between the proposed processes (that within the contextual approaches comprise processes such as mindfulness, acceptance, and compassion) and both specific difficulties and causes of human suffering (e.g. psychotic symptoms) and recovery and contextual-oriented outcomes. The studies in this section are mediation studies exploring the relevance of specific psychological mechanisms, such as shame, self-criticism, fears of compassion, mindfulness, and positive affect, in outcomes important for people with psychosis.

Shame and self-criticism are known to be frequent and particularly harmful in people with psychosis (Hutton et al., 2013; Keen et al., 2017). Interventions, such as compassion-based approaches, target these specific processes aiming to reduce their pervasive effect. In psychosis, clinical research on compassion-based interventions is in its beginning, with clinical trials showing promising results (Braehler et al., 2013a; Johnson et al., 2011; Laithwaite et al., 2009). Nevertheless, although some studies showed the relevance of these variables in symptom-related outcomes (e.g. paranoia, negative

symptoms, post-psychotic distress), fewer investigated their impact on recovery (Wood & Irons, 2016) or social outcomes (Argel, 2018; Castilho, Pinto, et al., 2017). To our knowledge, no studies have previously investigated their combined influence on people with psychosis' functionality. Therefore, **Empirical study V** aimed to understand the impact of these processes in the negative influence of social stress reactivity in difficulties in social functioning. Results showed that external shame and self-criticism were associated with heightened social stress reactivity and stronger difficulties in social functioning, both mediating their relationship. These results provide further empirical support regarding the importance of shame and self-criticism in social outcomes in people with psychosis. It also goes in line with theoretical accounts of psychosis as a result of an overly stimulated threat-system, with threat arising from several internal and external sources (Gumley et al., 2010). Shame and self-attacking further stimulate the threat system creating a vicious circle (Longe et al., 2010) that, combined with the unintended consequences of threat-based safety strategies (e.g. social withdrawal, limiting awareness to distressing internal experience), can potentiate relapse and further impairment (Gumley et al., 2010).

With the proliferation of efficacy studies on compassion-focused interventions, theoretical accounts and empirical research on fears of compassion, as important blocks to therapeutic efficacy and effectiveness, has started to emerge. Fears of giving and receiving compassion have been previously described as major obstacles to recovery (Gilbert, McEwan, Matos, & Rivis, 2011) and have been associated with increased psychopathology (Gilbert et al., 2014). Fear of positive affiliative emotions, such as compassion, emerge as a consequence of insecure attachment styles, highly prevalent in people with psychosis (Berry, Barrowclough, & Wearden, 2007). They are particularly prevalent in people with high levels of shame and self-criticism (Gilbert et al., 2011), difficulties also frequently associated with in psychosis (Hutton, Kelly, Lowens, Taylor, & Tai, 2013) as previously discussed. In spite of these indications that people with psychosis might be particularly vulnerable to the development of fears of compassion, its empirical study with psychosis samples is still scarce.

Therefore, in **Empirical study VI**, we aimed to characterize fears of compassion in people with psychosis and unveil their relationships with paranoia. Results showed that people with psychosis had higher levels of fears of compassion (in the three flows of compassion) than non-clinical samples (though not when comparing to people with depression) thus corroborating its higher prevalence in clinical samples. Since fears of

compassion were associated with each other (while in other studies fears of giving compassion were unrelated to others) it might be that people with psychosis perceive all contacts with compassion as encompassing negative consequences (emotional, social or others) thus activating the threat system. Difficulties in identifying and empathically connecting with suffering (either from others or the self) might also reinforce the threat response independent of the direction of compassion. Moreover, this result is congruent with the evolutionary perspective of the emergence of the "paranoid mind" as a safety strategy motivated by hostile environments, which would lead to and further fuel attentional and attributional bias and sensitivity to threat (Gumley & Schwannauer, 2007). This would, in turn, have a negative effect in the way positive signs (from others or in the self-to-self relationship) are interpreted, giving rise to threat outputs even in the presence of affiliative attempts and compassionate responses.

Results also showed that higher levels of fears of compassion were associated with higher paranoid conviction and paranoia-related distress and that fears of receiving compassion and self-compassion mediated the relationship between conviction and distress. This highlights the relevance of therapeutically addressing fears of compassion in people with psychosis since they seem to be one important mechanism by which conviction in paranoid ideas leads to distress associated with paranoia. Fears of compassion make it difficult to establish adaptive social relationships, healthy self-to-self relationships and therapeutic relationships, thus hindering recovery and potentially worsening symptoms.

Another important mechanism of change in contextual approaches, on the adaptive mechanisms' side, is the ability to be mindful of private experience. Although several studies have shown promising evidence of mindfulness-based interventions in people with psychosis (Cramer et al., 2016; Khoury et al., 2013; Martins et al., 2017) there are significantly fewer studies regarding the role of mindfulness in outcomes relevant for people with psychosis. On the other hand, though theoretical conceptualizations have stated that mindfulness is a form of connecting with the soothing system activating the 'being mode', to our knowledge no studies with people with psychosis have tested this empirically. Thus, **Empirical study VII** aimed at exploring the associations between mindfulness, different types of positive affect, psychotic symptoms and social safeness, and ultimately understanding if mindfulness impacts on social safeness through the activation of positive affect. Results showed that higher levels of mindfulness were associated with higher levels of positive affect (particularly the safe type) and social safeness, on one hand, and less psychotic symptoms on the other. Mindfulness impacted

on feeling safe and content in social relationships through the activation of safe positive affect, even when controlling for positive and negative symptoms. This provides preliminary empirical evidence that being mindful of private experiences (even distressing ones) might activate a type of positive affect associated with the soothing system, which in turn would allow people with psychosis to feel safe, connected and reassured in the social world. This might bring light into the mechanisms behind the beneficial effects of mindfulness on social outcomes in people with psychosis.

Overall, the results presented in this section provide empirical support to the conceptualization of psychosis as a result of an overdeveloped threat system associated with an underdeveloped soothing-safeness system. Taken together, our results provide an important contribution to the literature in highlighting important issues and targeting relevant therapeutic processes in working with people with psychosis. Interventions successfully preventing relapse and promoting recovery should focus on emotional-regulation strategies aimed at countering the overly activated threat-defense system – decreasing levels of external and internal shame and its defensive, threat-based coping strategy: self-criticism. These strategies to decrease threat-based processing should be combined with promoting an adaptive and compassionate self-to-self relationship and developing strategies to deal with (distressing) internal experiences rooted on their mindful observation, non-judgement and acceptance. Although fears of compassion are therapeutic outcomes not often reported in clinical trials, helping individuals to be in the presence of compassion (without unexpected threat activation), either in the giving or receiving-role, both in the self-to-self and self-to-others relationships (here including the therapeutic relationship), might be a major innovation in psychotherapy with people with psychosis. Moreover, our results show that, also in people with psychosis, mindfulness seems to be associated with positive affect, particularly feelings of safeness, soothing and contentment, thus indicating that it might be a useful strategy to engage with the soothing-affiliative system. This further supports the safety and potential positive effects of mindfulness in the psychosis population.

Decreasing threat-based defensive strategies while further developing and engaging with the soothing-affiliative system might have major repercussions in how patients deal with symptoms, talk to themselves and, ultimately, engage and feel connected in social relationships. Social outcomes that include connection and sense of belonging (and not mere functioning) are particularly important for people with psychosis due to several reasons: a) the negative effects of their known social-rank-related difficulties (Allison et

al., 2013) with its links to stigma (Wood and Irons, 2017); b) the importance of belonging; and c) the pervasive effects of loneliness (Lim et al., 2018); in recovering from psychosis.

The conclusions that arise from our results (also considering the first section's results), and their integration on the wider literature, can be summarized in the following recommendations/principles for psychotherapeutic interventions with people with psychosis. These, combined with recommendations from previous studies and theoretical accounts, guided the studies in the third part of this project:

1. In general, interventions should combine two major therapeutic aims: decrease the activation of the threat-defense system and further develop and increase activation of the soothing-safeness system, thus shifting from a 'competitive attacking' or 'social ranking' social mentality (threat-based) to a 'caring and supporting' social mentality (attachment-based combination of the caregiving and care-seeking mentalities).

2. Targeting social-rank-related difficulties is of key importance, namely trying to reduce the degree to which people see themselves as inferior, incomplete, unimportant in the eyes of others (external shame) and complementary decrease the use of self-criticism as a coping strategy to deal with/avoid feelings of shame.

3. Fears of compassion need to be assessed prior to the intervention and specifically including them in the therapeutic protocol (e.g. through psychoeducation, normalization and discussion on coping strategies) might bring advantages for people with psychosis.

4. Mindfulness practices could be a useful way of eliciting positive affect, improve self-to-self relationship and foster social connectedness.

5. Four types of outcomes might be useful to consider: a) symptoms (both psychotic symptoms and associated psychological suffering, such as depression, anxiety and shame) and relationship with symptoms (including acceptance of- and committed action in the presence of- symptoms, empowerment, experiential avoidance); b) functionality and positive emotions; c) self-to-self relationship; and d) social connectedness, sense of belonging and relationships with others.

1.3. Development, implementation and evaluation of COMPASS – COMPassionate Approach to Schizophrenia and Schizoaffective disorder.

Informed by theoretical and process-based literature and prior to the development of the intervention, we sought to revise and in-depth explore the existing results of the interventions that included the processes we aimed to target. Descriptive/**Review study III** aimed to examine, critically analyse, and summarize the results from studies using

contextual behavioural approaches to the psychosis continuum. We tried to keep the inclusion criteria broad both in terms of therapy used (we included Mindfulness and Acceptance-based interventions, Compassion-Focused Therapy, Dialectical Behaviour Therapy, and Metacognitive Therapy) and participants enrolled (schizophrenia, schizoaffective disorder, bipolar disorder) in order to have a clearer and detailed knowledge of what existed in the literature. Results showed that the interventions were mostly delivered in group-format, the treatment group was usually compared to treatment as usual or wait-list controls and that the outcomes were most frequently compared pre-to-post. Overall, studies concluded on the feasibility and acceptability of the interventions and improvement was found in a great range of outcomes, including psychotic symptoms, hospitalization rates, social interference, functioning, work performance, distress and emotion regulation, and insight. In what concerns process measures (although few reported mediational/correlational analysis) participants improved in mindfulness skills, compassion and symptom believability. Our results highlighted, however, that studies were still focused primarily in objective recovery with few studies focusing on subjective aspects of recovery (e.g. empowerment, feelings of connectedness) and self-to-self relationship. Also, although seventeen studies were included in the final review, only one study on Compassion-focused therapy meet the inclusion criteria, thus further research was needed in this regard.

With the same aim of exploring the benefits of the contextual approaches to psychotic disorders, this time from an empirical, interventional perspective, **Empirical study VII** sought to explore the potential benefits of training the main therapeutic processes in contextual approaches (compassion, mindfulness and acceptance) in an integrated, brief (5-session), exploratory, group intervention – the Compassionate, Mindful and Accepting approach to Psychosis (C.MAP). This study intended to explore feasibility, acceptability and patients' experiences regarding contextual strategies, and thus is not primarily an efficacy study. Our results showed that C.MAP was well tolerated by all five participants who completed the intervention, with strategies perceived as potentially useful in the future, and subjective improvement regarding difficulties and coping skills being reported by four of them. Two case studies further illustrate benefits in paranoia-related difficulties, shame, self-criticism, acceptance and mindfulness, though the only common improvements were in acting with awareness and paranoid conviction. This study provided further indication that compassion, mindfulness and acceptance-based strategies and practices seem safe, helpful and well-accepted by people with psychosis.

The development of the Compassionate Approach to Schizophrenia and Schizoaffective Disorder (COMPASS) is detailed in **Empirical study VIII**, along with preliminary results in a small sample of participants with early psychosis. The COMPASS intervention's main theoretical framework is affect regulation system's model (Gilbert, 2005) and the compassion-focused therapy rationale as it was adapted for psychosis (Gumley et al., 2010). Nevertheless, COMPASS development had several starting points that are worth acknowledging, since therapeutic interventions should be continuously evolving, informed by theoretical models, process studies, efficacy and effectiveness studies, and clinicians', researchers' and patients' feedbacks: a) theoretical models and rationales bridging contextual science, particularly compassion-based approaches and psychosis (Chadwick, 2014; Gumley et al., 2010; Johnson et al., 2009); b) clinical frameworks, guidelines and protocols for implementation of contextual interventions with people with psychosis (Braehler et al., 2013b; Chadwick et al., 2005; Laithwaite, 2010); c) promising evidence of efficacy and effectiveness of compassion-based approaches (Braehler et al., 2013a; Johnson et al., 2011; Laithwaite et al., 2009); d) feedback from clinicians and patients from previous clinical trials (Braehler et al., 2013a; Castilho et al., 2015; Martins, Castilho, Santos, et al., 2016). Innovations include specifically addressing fears of compassion and introducing the flow of 'observing compassion'. Preliminary results showed that participants not only improved their social functioning and psychotic (positive and negative) symptoms but also their ability to be compassionate towards the self, reducing fears of self-compassion and receiving compassion from others and hatred-based self-criticism (in medium-to-large magnitude, although some differences did not reach significance).

Encouraged by the preliminary results abovementioned, **Empirical study X** sought to further study the COMPASS intervention. Results showed that COMPASS had low attrition and, since these improvements were not observed in the TAU-only group, helped participants deal with their symptoms in a more experientially accepting way, thus refraining from overidentification, entanglement or struggling, reducing external shame-feelings and anxiety and increasing positive affect. Congruent with the theoretical background that inspired the program development, the self-to-self relationship after the intervention comprised higher levels of self-reassurance with self-experience being less influenced by views of the self as inadequate or hated. Self-care as assessed by the clinician also improved, congruent with the therapeutic goals of self-compassion-based interventions. Participants were able to develop their mindfulness and compassion abilities,

the latter at a greater extent (as initially intended), understanding suffering as a part of human experience, not feeling alone in their suffering, and being able to reassure themselves in a kinder way. As expected, the integration of specific contents and practices aimed at targeting fears of compassion seems to have contributed to the COMPASS participants' ability to lessen the activation of the threat-system when in the presence of compassion in all its flows. Feedback from different informants (clinician, participant and significant other) are supportive of improvement after the intervention.

Overall, the results from the clinical studies highlight the feasibility, acceptability and benefits of contextual strategies in general, and the COMPASS intervention in particular, for people with psychosis. Adding this intervention to treatment as usual seems to have the potential to increase and widen therapeutic change, particularly in subjective aspects of recovery, such as relationship with symptoms, self-to-self and self-to-others relationships.

1.4. Overall synthesis.

Overall, the studies presented in the research project emphasize the importance of social rank and contextual variables in the maintenance versus recovery from psychosis, from the assessment phase to the intervention planning and implementation.

First, the inclusion, in the initial and progress assessment, of instruments (either self-report or clinical interviews) evaluating the relationship people establish with their symptoms, the symptoms' psychological correlates and clinical variables evaluated from the patient's perspective is essential for a complete and integrative assessment of difficulties and strengths. It is also relevant to establish therapeutic targets are to be monitored throughout the intervention. The first section of this project provides the field with a new clinical interview and two new scales to assess relationship with delusions and medication adherence from a multidimensional person-based perspective, all with good preliminary psychometric properties. It also provides further psychometric support to an existing scale measuring relationship with auditory verbal hallucinations (Portuguese adaptation and preliminary validation). The associations found between an accepting relationship with symptoms (while acting with commitment), increased levels of satisfaction with life, mindfulness abilities, decreased negative perception of voices' intent and resistance in responding to voices, adds to the relevance of assessing these variables.

The second section provides further empirical support to the theoretical compassion-focused accounts of psychosis. The negative consequences of a threat-based

processing, rooted on shame and self-criticism, and complemented with fear of affiliative emotions, namely compassion, were uncovered. On the other hand, the beneficial effects of mindfulness through the activation of positive affect on feeling safe and connected in social relationships was demonstrated. These studies highlight important mechanisms in the maintenance of psychosis-related difficulties and propose new therapeutic targets aimed at aiding people with psychosis in their objective and subjective recovery.

In the third and intervention-rated section, we provided results on the beneficial use of contextual strategies, such as mindfulness, acceptance and compassion, in general and as a part of a structured, manualized intervention (COMPASS intervention) with people with psychosis. The intervention helped participants improve symptoms, relationship with symptoms and functioning on one hand, and emotion regulation strategies, self-experience and social relationships on the other.

2. Limitations, suggestions and reflections on future research

Although the limitations and future directions are detailed in each study's discussion section, in this subsection we highlight general limitations that are common to some of the studies. These limitations are relevant both regarding the generalization of results and for informing future studies on contextual approaches to psychosis from the assessment, process and intervention perspectives. Limitations can be divided in the following categories: a) sample-related; b) design-related; and c) measure-related limitations.

Regarding sample-related limitations, overall the sample sizes in the different empirical studies were relatively small. The sample sizes in this project are comparable with other instrument- (Shawyer et al., 2007), process- (Hutton et al., 2013; Keen et al., 2017) and intervention-focused (Braehler et al., 2013a) studies and this is understandable due to the population's characteristics (such as low prevalence, low insight, motivational deficits, abstract thinking difficulties). The relatively small sample sizes influenced the statistical analysis planning (e.g. more complex analyses were not possible) and impeded some hypothesis to be tested (e.g. the small percentage of participants in the clinical trial with auditory verbal hallucinations leaded to the exclusion of the voices' acceptance and action measure). The small sample size predicted for the sample to be collected also motivated the use of mixed samples within the psychosis-spectrum in the majority of the studies. The use of mixed samples is justifiable in the light of continuum/dimensional models of psychosis, being psychosis the central construct irrespective of the several

categories (Van Os et al., 1999). However, this approach also has its own problems making generalization of results and, inferences regarding specific diagnosis difficult. Moreover, in some studies, there was an imbalance regarding gender (e.g. mostly male) and civil status (e.g. mostly single), as expected due to the population's characteristics and disorder's consequences. It is important to replicate the obtained results in larger, more representative samples (also non-Portuguese) and perform comparisons between subgroups of participants with different clinical presentations/diagnosis (e.g. affective versus non-affective psychosis) whenever relevant. Specifically, regarding the COMPASS intervention, although the pilot study was conducted in patients with early psychosis (since intervention within the critical period – e.g. 5 years after FEP – has been associated with better disease's course), with some diagnosis being exclusion criteria, we have no reason to believe that it wouldn't be beneficial (possibly with some adaptations) for people with enduring psychosis, mood disorders with psychotic features, or even substance induced-psychotic disorders. Future studies could pursue this line of research.

The major design limitation of the studies in the first and second sections of this project is the cross-sectional design and lack of longitudinal data. The cross-sectional design of the studies is an important limitation since it does not allow for causal inferences. In psychometric studies, it would be important to add longitudinal assessments to assess the measure's temporal stability (when symptomatology and psychopharmacological treatment are stable) and/or sensitivity to change (before-after an intervention). The fact that the COMPASS clinical trial yield significant improvement in the subscales of the Willingness and Acceptance of Delusions is preliminary evidence of the scale's sensitivity to change, nevertheless, further study is needed. In what concerns the mediational studies, although mediational models are often conducted cross-sectionally and studies with psychological mechanisms in psychosis are usually not longitudinal (Hutton et al., 2013; Keen et al., 2017; Wood & Irons, 2016), longitudinal studies are in need in the area in order to further investigate the associations found and be able to infer causality.

Regarding the intervention studies, the lack of randomization, blind allocation and standardization of the TAU might have introduced important bias that we were not able to control. Moreover, the fact that confounding variables (e.g. medication) were not controlled might also encompass limitations in generalizing the results. The Randomized Controlled Trial design (RCT) is the most robust method to gather evidence of efficacy and future studies should explore the benefits of the COMPASS intervention following RCT guidelines. Regarding the stability of therapeutic gains, the studies presented do not include

follow-up assessments and therefore the COMPASS program's benefits' maintenance remain to be established. The COMPASS group's three-months' follow-up data are currently being analysed as well as an exploration of the mechanisms that promoted therapeutic change (another limitation of the studies completed so far). Still regarding mechanisms of action, future studies should also test the COMPASS intervention in comparison with an active control group since studies have shown that non-specific effects (non-intervention-related) seem to occur in group therapy with people with psychosis, potentiating the improvement of symptoms and functionality (Orfanos et al., 2015). Moreover, dismantling studies in which each one of the intervention's components (e.g. core skills) is examined individually would be interesting to further explore COMPASS's efficacy.

In what respects the measures chosen for the different studies, we had to consider instruments that had been previously adapted and validated to the Portuguese population. This circumstance limited the choices we had for measuring certain variables. Although the CIPD has now preliminary evidence of its psychometric properties, the interview is still under study and additionally, we tried to use other measures for psychotic symptoms available in Portuguese (e.g. PANSS). Future studies with the CIPD are planned or undergoing. On the other hand, recovery-specific instruments (e.g. Recovery Assessment Scale – Giffort et al., 1995) could be used in future studies in order to explore if the COMPASS intervention helps patients improve subjective aspects of recovery not explored in these pilot studies, i.e. self-directedness, life meaning, identity among others. Regarding the general methodology of collecting data, although self-report has shown to be an appropriate and valid method for people with psychosis (Lincoln et al., 2010), we have observed that some participants had difficulties in filling in the questionnaires. We have also recruited other informants in order to get a clearer and more complete assessment. Future studies should continue to use multi-informant methodology and could include observation-based, experimental, physiological, and neural correlates as outcome and process measures (e.g. heart-rate variability – Kirby et al., 2017; fMRI tasks – Longe et al., 2010).

In a more general matter, we have further suggestions for future studies that arise from our experience throughout the work presented here. From the recovery perspective, it would be useful that future studies include the active participation of people with lived-experience of psychosis in the different aspects of research projects: providing feedback and insight on the development of new measures and interventions in addition to sharing

their perspectives as service-users in existing interventions. Qualitative data on the participants' perspectives regarding the COMPASS intervention is now under study. Regarding the importance of fears of compassion highlighted here, future studies could text the hypothesis that group interventions and perhaps even peer support groups are privileged contexts to practice compassionate relationships and foster feelings of common humanity and belonging. Our results in Empirical study VI suggest that compassion for others might be the safest starting point for training individuals with psychosis in compassion, and we have included the flow "observing compassion" hypothesizing it could also be perceived as less threatening and easier to start engaging with compassion. Future studies could also test these hypotheses since it is important that people with psychosis engage with the affiliative-soothing system without unexpected activations of threat-based responses that could undermine the therapeutic process (e.g. fueling avoidance responses).

On a last note, although our review on contextual approaches to psychosis yield interesting conclusions, emphasized potential benefits and highlighted important indications for future studies, it did not follow all the systematic reviews' guidelines and did not include meta-analysis. Periodic systematic reviews with meta-analysis are needed to systematize findings on new interventions and inform clinical practice.

3. Strengths and overall clinical, research and health policies implications

In spite of the discussed general and specific limitations of our results, several general strengths and implications are worth highlighting and discussing: methodological strengths and clinical-relevant strengths.

3.1. Methodological strengths.

The fact that the present project was rooted on rigorous literature review, with two published review studies, and evolved from mechanisms' studies to pilot studies with increasing complexity is an advantage since we were able to learn not only from other researchers' results but also from our own clinical and research experience.

One of the strengths common to all empirical studies presented here was the use of psychosis clinical samples. Although psychotic symptoms exist in a continuum with normative experience in non-clinical samples and analogue studies are often a useful way of analysing complex models with multiple variables (due to their usual larger sample size), this methodology brings important limitations regarding generalization of results to clinical samples. Though with smaller sample size, studies with clinical samples have higher

ecological validity and are thus more useful for drawing conclusions for the targeted population of people with psychosis.

In most studies we have combined different types of assessment measures (including clinical interviews, clinician-rated measures, and self-report measures), multiple sources of information (patient, patient's psychiatrist, clinician and significant other) and different types of information collected (qualitative and quantitative). Multi-informant and multi-method approaches in mental health assessment bring important advantages both in research and clinical settings, and have been argued to be key to contextually sensitive and individualized assessment and treatment planning (De Los Reyes, 2013).

3.2. Clinical-related strengths.

The major clinical strength pertains to the fact that this project encompasses results and provides innovations and practical contributions, from descriptive, review and empirical studies, in the three clinically-relevant areas for clinical psychology: psychological assessment, process/mechanisms' studies and clinical trials.

Regarding the COMPASS intervention, it is an important advantage that it was informed by theoretical and empirical research, including feedback from previous clinical trials, with supervision of more experienced researchers in the field.

Contextual approaches aim at helping patients to be "open, aware, and active" (Hayes et al., 2011): open to difficult experiences in an accepting way, refraining from struggling, avoidance and tendencies to alter the experience; aware as in being mindfully observant of experience without judgement or reaction; and active in the way that people can act in accordance to one's values in the presence of unwanted, unpleasant and difficult internal experiences. In this context, the fact that in all process and intervention studies we have included assessment not only of symptoms but also relationship with symptoms and/or social outcomes that can be negatively influenced by fusion with/avoidance of symptoms is a major strength of the present project.

Furthermore, the inclusion of 'traditional' clinical variables, such as symptoms and medication adherence, assessed by the patients' perspective and including these variables' psychosocial aspects is both contextual and recovery-congruent, as it involves the patient as an active agent in assessment and therapy as recommended (Leamy, et al., 2011), as well as innovative in studies with people with psychosis.

3.3. Contributions and implications.

In terms of the psychological assessment of people with psychosis, this project brings clear practical contributions to the field. The new clinical interview CIPD, that revealed not only good psychometric properties but also high acceptability among participants, can be used in several clinical and research contexts, both to perform diagnosis and evaluate/monitor symptoms' frequency, interference and severity (from the clinician perspective), as well as conviction, interference and empowerment (from the patient's perspective). This combines different types of assessment and allow for the evaluation of multiple outcomes and processes through the same instrument, which can be a major advantage in terms of the clinical interview effectiveness and clinical utility (cost and time-effectiveness). The two newly developed instruments are brief, pragmatic, valid, reliable measures to assess relationship with delusions and medication adherence and fill a gap in the international literature. The Portuguese version of the voices acceptance and action scale is a contribution to the Portuguese literature and an important addition to clinical practice, since there were no instruments assessing voices from a contextual, acceptance-based perspective and considering that symptom specific instruments have been argued to be more useful than general measures of acceptance (MacKenzie and Kocovski, 2010). Acceptance and action in relation to psychotic symptoms are important outcomes in contextual interventions. Assessing these processes at baseline can guide the intervention planning, thus helping clinicians move towards a more personalized therapy.

The cross-sectional studies give important contributions in terms of improving the knowledge of the mechanisms behind psychotic symptoms and psychosis-related difficulties. They, thus provide information on therapeutic targets congruent with compassion, acceptance and mindfulness approaches, particularly regarding the relevance of decreasing feelings of shame and self-criticism, and fears of compassion, on one hand; and increasing mindfulness skills, and positive affect on the other. Results go in line with previous literature stressing the relevance of working these processes in psychosis, either to reduce symptoms and/or to increase functioning and quality of life.

Specifically, regarding fears of compassion, it is important to make some considerations. Compassionate acceptance can be a privileged therapeutic context, in which people may develop their way of accepting, coping and living with their difficulties (Spandler & Stickley, 2011). Moreover, from a compassion-focused therapy perspective, the basic motivation for therapy is to help patients identify signs of suffering in the self and other and develop strategies to alleviate it, including establishing more compassionate

relationships with self and other. With high levels of fears of compassion and their consequences highlighted in this project (namely regarding paranoid ideation), therapeutic contexts will not be perceived as safe and affiliative environments, and therapeutic progress might be blocked. Therefore, it is important to therapeutically address fears of compassion, when working with people with psychosis, integrating desensitization and exposure in therapy to help patients access or stay with positive emotional states (Gilbert, 2014) before using/inducing such states (e.g. compassion-based exercises) as therapeutic techniques. COMPASS seems to have been useful in reducing fears of compassion in all its flows.

In what respects mindfulness, the present project further provided empirical evidence of its safety and acceptability as a strategy for people with psychosis with no associations with or unexpected increases in symptom-related variables emerging and no reported adverse effects in clinical trials. Our results provide further empirical support to the studies and reviews highlighting its safety when proper adaptations are made (Shonin et al., 2014). Furthermore, results have shown that mindfulness might even impact on feeling safe and connected in social interactions through the activation of soothing-related positive affect.

The most significant contribution of the present project is the development and preliminary efficacy study of the COMPASS intervention. This 12-session, group intervention can be easily implemented as a complementary intervention bringing important benefits for people with psychosis. The macro-level benefits of such intervention are discussed below.

3.4. Macro level implications: improving health care services for people with psychosis.

Although according to international guidelines psychosocial and psychological interventions should be offered to people with psychosis (in combination with pharmacological treatment) since an early stage (Kreyenbuhl et al., 2010; NICE, 2014), and results have shown that better results are achieved when combination treatment is used, compared with routine care alone (Gaudiano, 2006), in Portugal several patients do not have access to psychotherapy. Illustrative of this is the fact that in the pilot study's sample over 60% of patients only received psychiatric intervention (with only approximately 23% receiving combined treatment of psychology plus psychiatry). In helping patients cope with symptoms, pursue valued life directions and have more adaptive relationships with other and the self, psychological interventions, such as COMPASS, have important benefits not

only in enhancing patients' lives, but also in loss of functions, reducing the burden of the disease (Klosterkötter, 2014; Sim, 2006) to patients, families, care-takers, health care services and ultimately global society.

The COMPASS intervention, as a manualized intervention (with both therapists' and participants' manuals soon to be published) with available periodic supervision from the program developers, has the potential to be delivered by psychologists and/or other health-care professionals (with specific training). COMPASS may be delivered in psychiatry services or other health institutions, in general, and as a part of an integrated intervention within specific teams, in particular (e.g. mental health community teams, FEP teams). Since it is a group intervention not only is it cost and time-effective (lesser human resources/time needed when comparing to individual therapy) but also has specific benefits of the 'being in a group' experience (e.g. sense of belonging, practicing 'in loco' of giving/receiving compassion, peer support and normalization, peers modelling adaptive strategies/relationships).

Although it is important that compassionate relating (with self and others) is trained and further developed as a component and aim of a therapeutic intervention (such as COMPASS), the paradigm change in intervention with people with psychosis must be deeper and more generalized. Compassionate acceptance, mindfulness defined as paying attention with empathy, presence and the ability to listen in depth (Hick & Bien, 2008), and therapeutic motivations rooted in the caring social mentality (Gilbert, 2000) are needed in all therapeutic relationships and therapeutic environments. Current psychiatric treatment (including hospitalization) has the potential to be a distressing and even traumatic experience (Paksarian et al., 2014), therefore, as in all sources of human suffering, there is also an opportunity for compassion to emerge and be cultivated. Compassion-based care should be trained and promoted in all stages and modalities of treatment in psychiatric disorders, particularly in psychotic disorders.

Compassionate and mindfulness abilities should also be fostered in prevention programs with vulnerable populations and among the general community, given its potential protective role regarding psychological distress, in general, and subclinical and clinical psychotic symptoms, in particular.

These proposals are in accordance with the Portuguese National Program for Mental Health (Direção Geral da Saúde, 2017), which stresses as important goals for future actions in the mental health field: to "promote and protect the human rights of people with mental health problems", "strengthen the knowledge based on evidence and sharing of

good practice in mental health" and "improving the quality of rehabilitation and reintegration of people with psychiatric disorders, namely the more severe and disabling ones".

4. Concluding remarks

It was our aim with this project to both provide researchers and clinicians with valid, reliable and clinically useful assessment tools; to contribute to the knowledge of the mechanisms behind psychosis-related difficulties and recovery from psychosis; and ultimately, to provide clinicians with a new theoretically and empirically driven effective intervention that targets these processes and fosters recovery- and contextual-relevant outcomes.

As shown by this work, it is vital that mental health services, are rooted in a care-giving mentality and are imbedded with acceptance and compassion motivations. Not only but specially in what concerns people with psychosis, it is important that people's experience with mental health services, although understandingly difficult, is perceived as non-threatening, safe and empowering. It is our belief that this could be the most adequate environment to help people pursue a valued life, thus promoting growth, self-regulation, and social connectedness.

It is our hope that the present work, that emerged as a consequence of work previously developed, is another starting point from which intervention with people with psychosis can evolve and continue to improve. The foundations for a compassionate path in health care for people with psychosis has been created. It is key that research and clinical practice is always informed and motivated by previous reflections and conclusions. Our aim with this project was to enhance the knowledge of the processes behind human suffering and flourishing, with particular attention to psychosis-related experiences. Ultimately, we wanted to provide researchers, clinicians, family members and patients new foci and inspiration for further reflection and innovation, therefore give continuity to a compassion-based cycle, in which curiosity, understanding and care fuel each other.

Everything is interconnected. My interest is linked to everyone else's.
Our survival and future are linked.
Dalai Lama

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