1 2 9 0

UNIVERSIDADE D
COIMBRA

Maria Judite de Oliveira Fortuna

Mentalidade de competição e de prestação de cuidados: estudo da sua contribuição para a Fibromialgia

Dissertação no âmbito do Mestrado Integrado em Psicologia, área de especialização em Psicologia Clínica e da Saúde, subárea de especialização em Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e da Saúde, orientada pela Professora Doutora Paula Cristina de Oliveira de Castilho Freitas, e apresentada à Faculdade de Psicologia e Ciências da Educação da Universidade de Coimbra

Julho de 2021

Faculdade de Psicologia e Ciências da Educação
da Universidade de Coimbra

Competitive and caregiving mentality as a comprehensive framework for Fibromyalgia

Maria Judite de Oliveira Fortuna

Dissertação no âmbito do Mestrado Integrado em Psicologia, subespecialização em Psicologia Clínica e da Saúde: Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e da Saúde, orientada pela Professora Doutora Paula Cristina de Oliveira de Castilho Freitas, e apresentada à Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra.

Julho 2021

1290

UNIVERSIDADE DE
COIMBRA

To my mother.

Contents

Acknowledgments

Acknowledgments

> I learned that the right question is often more important than the right answer to the wrong question.
>
> -Alvin Toffler

Desenvolver uma atitude própria à investigação científica em psicologia clínica não foi uma tarefa fácil para mim. A minha inabilidade foi criando resultados por ser mediada pelo saber e disponibilidade de duas pessoas a quem deixo aqui o meu profundo reconhecimento.

À Professora Doutora Paula Castilho, por me desafiar a questionar, por me motivar e validar. O seu trabalho como investigadora, o seu jeito para ensinar, o exemplo de resiliência e a sua mão firme foram realmente inspiradores. Ao seu lado, fui capaz de me superar.

À doutoranda Ana Margarida Pinto, por me orientar no espaço e no tempo da investigação. Foi a bússola sem a qual dar cada passo seria penoso e muito menos aliciante. A sua orientação e os seus vastos conhecimentos sobre o tema desta dissertação foram centrais para que eu transformasse ideias em alguns resultados. Por fazer equipa comigo, consegui aprender fazendo.

Agradeço, também, ao Doutor Sérgio Carvalho por selecionar bibliografia essencial a quem dá os primeiros passos no estudo dos processos psicológicos que subjazem as manifestações de dor crónica.

Este muito modesto contributo para a compreensão e para o tratamento da fibromialgia foi possível graças ao contributo das mulheres que participaram no estudo, e ao envolvimento da Associação Portuguesa de Jovens com Fibromialgia (APJOF), da Associação Nacional Contra a Fibromialgia e Síndrome de Fadiga Crónica (Myos) e da plataforma Myfibromyalgia®- Instituto Virtual de Fibromialgia. A todos deixo aqui o meu apreço e o desejo de que consigamos, em conjunto, diminuir o sofrimento e promover vidas com significado e vitalidade.

Ao culminar um ano de elevada exigência, esta dissertação de mestrado é também o resultado do apoio de várias pessoas que me dedicaram muito do seu tempo e da sua amizade. Agradeço, especialmente, à minha colega Beatriz o carinho e a ajuda paciente na preparação dos aspetos mais formais deste documento, e à Mariana por rir comigo.

As últimas palavras são de gratidão pelo amor sem condições do meu marido, família e amigos. As minhas descobertas são possíveis porque me incentivam, sossegam e amparam. Espero que este trabalho sirva de testemunho de que a nossa saúde está intimamente ligada ao modo como cuidamos uns dos outros.

It is a myth that fibromyalgia occurs only in middle-aged women.

Fibromyalgia occurs in all populations across the world and can affect all ages.

-Häuser, W. & Fitzcharles, M. A.

Once we start basing our self-esteem purely on our performance, our greatest joys in life can start to seem like so much hard work, our pleasure morphing into pain.

-Kristin Neff

Introductory note -Competitive and caregiving mentality as a comprehensive framework for Fibromyalgia

Fibromyalgia is a chronic and highly disabling condition that entails a significant individual and socio-economic burden (Häuser et al., 2015; Wolfe et al., 2011; Schaefer et al., 2016). Characterized by a set of somatic, cognitive, and affective symptomssuch as widespread pain, fatigue, non-refreshed sleep, cognitive difficulties, and emotional distress (Wolfe et al., 2011), fibromyalgia remains a rather challenging condition for both patients and clinicians. This is fueled not only by the limited understanding of fibromyalgia's nature (Wolfe et al., 2014) but also by the lack of effective treatments for the condition (Pinto et al., 2020).

Fibromyalgia frequently co-occurs with other medical and psychiatric disorders, which are known to significantly influence the presentation, course, and management of the condition (Häuser et al., 2017), adding to the emotional and physical suffering that individuals have to endure (Häuser et al., 2015; Wolfe et al., 2011). Among psychiatric disorders, depression is, along with anxiety, the most prevalent comorbidity in fibromyalgia (Løge-Hagen et al., 2019), with studies pointing to a bidirectional association between the two conditions (Chang et al., 2015).

The observation that not all patients with FM get depressed has called attention to the relevance of cognitive-affective processes, such as illness appraisals, and how these may increase the risk of developing depressive symptoms (Okifuji et al., 2000).

For most patients with FM, symptoms are highly distressing and the source of major functional impairments and interpersonal difficulties and are thus experienced as a highly threatening experience. More, the invisible nature of the disease, which has no objective marker, puts the individual in a position where he can easily be the subject of other's invalidation, criticism, disbelief, and even stigma, including from the medical community (Mengshoel et al., 2018). The symptoms may change profoundly the identity and perceived body image of patients, which tend to assess and compare themselves in a negative way, giving rise to feelings of inferiority, incompetence, and worthlessness (Beshai et al., 2017; Terol Cantero et al., 2021). External shame emerges in this context in response to feeling socially disadvantaged and threatened (Gilbert, 1998; Gilbert & Irons, 2008).

A bulk of studies has demonstrated that shame itself is a strong predictor of depression, being associated with a wide range of maladaptive processes and psychopathological and somatic symptoms (e.g., Castilho et al., 2017; Kealy et al., 2018; Pineles et al., 2006).

On the contrary, self-compassion, defined as the ability to be sensitive to one's suffering and to take committed action to alleviate this suffering (Gilbert, 2005), has been proposed to act as a buffer in the development of depressive symptoms and to counteract the pernicious impact of shame (Gilbert, 2005, 2009a, 2009b, 2014; Kim et al., 2011; Phillips & Hine, 2021; Ross et al., 2019).

Although the literature points to the importance of addressing shame and self-compassion in chronic illnesses (Trindade et al., 2018a, 2018b), including chronic pain (Carvalho et al., 2019, 2020a, 2020b), their role in fibromyalgia remains underexplored. Thus, the present study aimed at exploring the association between fibromyalgia symptoms, shame, self-compassion, and depressive symptoms and to test whether shame and self-compassion mediated the effect of fibromyalgia symptoms in depression.

Results from correlation analyses corroborated our hypotheses, showing that the variables under study were significantly associated among them in an expected way. The path analysis supported our hypothesis that external shame and self-compassion mediate the association between fibromyalgia symptoms and depression.

These findings provide important clues for the research and management of fibromyalgia.

This dissertation encompasses the following article:

Fortuna, J., Pinto, A. & Castilho, P. (2021). *The effects of fibromyalgia symptoms, self-compassion and shame on depression: A meditational analysis* [Manuscript in preparation]. University of Coimbra

The effects of fibromyalgia symptoms, self-compassion, and shame on depression: A meditational analysis

Authors:

Judite Fortuna[1]*
Ana M Pinto, Msc[2]
&
Paula Castilho, PhD[2]

Affilitions:

[1]University of Coimbra, Faculty of Psychology and Educational Sciences, Coimbra Portugal

[2]University of Coimbra, Centre for Research in Neuropsychology and Cognitive and Behavioural Intervention, Faculty of Psychology and Educational Sciences, Coimbra Portugal

---

[1]***Corresponding author:**

Judite Fortuna, Msc student

Faculdade de Psicologia e de Ciências da Educação, Universidade de Coimbra

Rua do Colégio Novo, Apartado 6153 3001-802 Coimbra, Portugal

Email: mjuditefortuna@gmail.com

Abstract

Extensive research demonstrates that fibromyalgia and depression are strongly correlated. However, the psychological and psychosocial mechanisms involved in this association are still poorly understood. Studies on the role of shame in fibromyalgia are scarce but external shame has been shown to be a strong predictor of depression. We hypothesize that the invisible nature and limitations imposed by fibromyalgia symptoms may give rise to a perception of existing negatively in the mind of others, increasing the risk of developing depressive symptoms. Considering that self-compassion is a well-established antidote for shame and seems to be a relevant player in chronic pain in general, we sought to investigate whether the impact of fibromyalgia symptoms and of shame on depressive symptoms would be mediated by self-compassion. To test these hypotheses, we run a serial mediation model in a sample of 142 women with fibromyalgia. Shame and self-compassion were found to mediate the link between fibromyalgia symptoms and depression, accounting for 54% of the variance in depressive symptoms. These findings seem to indicate that external shame and self-compassion are relevant mechanisms in fibromyalgia and that their role should be further investigated. The results also provide preliminary evidence on the potential benefit of integrating self-compassion in the clinical work with people with fibromyalgia.

Keywords: fibromyalgia, external shame, self-compassion, depression

Resumo

A investigação tem demonstrado que a fibromialgia e a depressão se encontram fortemente correlacionadas. No entanto, os mecanismos psicossociais envolvidos nessa associação são ainda pouco conhecidos. Os estudos sobre o papel da vergonha na fibromialgia são escassos, mas a vergonha externa tem mostrado ser um forte indicador de depressão. A hipótese de partida deste estudo é que a natureza invisível e as limitações impostas pelos sintomas da fibromialgia podem dar origem nestes doentes a uma perceção de existir de forma negativa na mente dos outros, elevando o risco de desenvolverem sintomas depressivos. Considerando que a autocompaixão é um antídoto bem estabelecido para a vergonha e parece ser um fator relevante na depressão e na dor crónica em geral, procurou-se investigar se o impacto dos sintomas de fibromialgia e da vergonha sobre os sintomas depressivos seria mediado pela autocompaixão. Para testar essas hipóteses, testou-se um modelo de mediação serial numa amostra de 142 mulheres com fibromialgia. Verificou-se que a vergonha e a autocompaixão mediam a ligação entre os sintomas de fibromialgia e de depressão, explicando 54% da variância nos sintomas depressivos. Estes resultados parecem indicar que a vergonha externa e a autocompaixão são mecanismos relevantes na fibromialgia e que o seu papel deve ser melhor investigado. Os resultados também facultam evidências preliminares sobre o potencial benefício de integrar a autocompaixão na prática clínica com pessoas com fibromialgia.

***Palavras-chave*:** fibromialgia, vergonha externa, autocompaixão, depressão

I. Introduction

1.1. Fibromyalgia

Fibromyalgia (FM) is a relatively common condition worldwide (ranging from 2% to 5%), with greater expression in women (Branco et al., 2010; Wolfe et al., 2018). FM is characterized by widespread pain and a constellation of other somatic, cognitive, and affective symptoms, including fatigue, non-refreshed sleep, mood disturbance and cognitive impairments, that significantly interfere with the individual's global functioning (Häuser et al., 2015; Wolfe et al., 2011).

Research indicates that people with FM tend to report poor health status, marked disability, and low productivity, resulting in major direct and indirect economic costs (Robinson et al., 2012; Schaefer et al., 2016; White et al., 2009). In Europe, and amongst chronic pain conditions, FM is the one responsible for the highest rate of unemployment and for the greatest number of days of absenteeism, heading the incapacity benefits claim (Leadley et al., 2012).

Psychopathological symptoms, such as anxiety and, above all, depression, are particularly prominent in FM, adding to the existing burden, disability, and suffering associated with the condition (Gracely et al., 2012; Lange & Petermann, 2010). A recent meta-analysis indicated that **the pooled** point-prevalence of major depressive disorder in patients with FM varied between 25% and 45%, depending on the assessment methods applied, and that lifetime prevalence could reach values as high as 65%(Løge-Hagen et al., 2019). Such findings go in line with previous systematic reviews on the topic (e.g., Borchers & Gershwin, 2015).

Interestingly, people with major depressive disorders are also at increased risk of developing chronic pain, with studies unveiling a bidirectional temporal association between fibromyalgia and depression (Chang et al., 2015).The comorbidity between both conditions seems to be associated with more severe phenotypes and worse physical and mental outcomes (Alciati et al., 2012; Fietta et al., 2007; Galvez-Sánchez et al., 2018; Gracely et al., 2012; Marangell et al., 2011; Nordahl & Stiles, 2007; Thiagarajah et al., 2014). Indeed, people with fibromyalgia and depression tend to report greater levels of pain, worse quality of life, and more severe life events (Aguglia et al., 2011) than people with FM that are not depressed. Furthermore, depressed FM patients tend to present a poorer response to multimodal rehabilitation programs than non-depressed FM patients (Lange & Petermann, 2010). Similarly, depressed patients with fibromyalgia tend to report greater severity of depressive symptoms, greater cognitive rigidity, and lower cognitive differentiation, when compared to depressed patients without fibromyalgia (Aguilera et al., 2019).

The fact that not all FM patients get depressed, suggests that depressive symptoms may be related to specific cognitive and emotional appraisals of the symptoms interference on daily life, irrespective of the physical symptoms' severity (Okifuji et al., 2000). Evidence suggests that patients may assess their chronic illness as a stressful event that exceeds their resources to prevent mounting negative consequences (Terol Cantero et al., 2021). In addition, FM patients tend to attribute psychosocial impairment uniquely to physical illness (Ercolani et al., 1994), in spite of being excessively vulnerable to criticism (Carvalho et al., 2021) and invalidation by others (Ghavidel-Parsa et al., 2015; Kool et al., 2009). This susceptibility seems to promote a subsequent tendency to become isolated and to engage in negative patterns of thinking about pain (Wolf et al., 2015). Specifically, patients present more helplessness and exaggerated threat appraisals (Rodero et al., 2010), pain-related catastrophizing (Ellingson et al., 2018; Hassett et al., 2000) and anger rumination (Toussaint et al., 2019). In turn, this negative assessment of FM symptoms favors feelings of lack of control over the disease and over daily life in general. Patients often report low levels of perceived self-efficacy, which in turn seems to be fueled by high levels of pessimism and negative feelings toward themselves (Gaston-Johansson et al., 1990). Contrariwise, those with a higher sense of self-efficacy in regard to coping with FM and with more positive attitudes about their ability to manage it, report less severe symptoms (Buckelew et al., 1996).

As a way of coping with the threatening implications of managing FM symptoms, patients may rely on maladaptive self-regulatory strategies, such as emotional suppression and emotional avoidance (Bowers et al., 2017; Geenen et al., 2012; Trucharte et al., 2020; van Middendorp et al., 2008), compensatory strategies (e.g., overexertion, disregarding support and help from others; Wentz et al., 2004) and self-oriented perfectionism (Molnar et al., 2012), instead of engaging in social exchange and activities that could generate positive affect (Davis et al., 2001). Indeed, among patients with identical pain levels, individuals with FM report lower levels of positive affect, joviality, and self-assurance (Zautra et al., 2005). So, negative beliefs about FM symptoms and stress-related appraisals were found to increase the levels of physical pain and of social disengagement, accentuating the risk for depression.

Despite considerable evidence on the comorbidity between FM and depression, much remains to be understood about the mechanisms underlying the emergence of depressive symptoms in people with FM, and related risk and protective factors.

1.2. Fibromyalgia symptoms as a source of perceived loss of status in the group

Over the last decades, various classification and diagnostic criteria for FM have been developed (Arnold et al., 2018; Wolfe et al., 1990, 2016). Yet, and despite considerable efforts and advances in the field, FM remains poorly understood, marked by ongoing debates about its nature, neurobiological underpinnings, and diagnosis. This is further fueled by the lack of a specific biomarker that can be used as a criterion for the assessment of FM presence and severity. All these factors along with the clinical heterogeneity and fluctuating nature of FM symptoms (Walitt et al., 2011),can constitute a barrier to the diagnosis and effective treatment of FM.

Indeed, people with FM undergo several medical evaluations before being correctly diagnosed (Arnold, 2018) which, along with the invisibility and non-specificity of symptoms, foster an experience of stigma[2]-related distress in some patients. Patients often feel angry and frustrated that medical knowledge and treatment of FM remains insufficient and unsatisfactory and that some health professional still label them as malingerers (Mengshoel et al., 2018). Remarks about their alleged laziness due to absence from work or poor performance (Quintner, 2020), or comments from significant others about how well they look in spite of their illness experience(Cunningham & Jillings, 2006) are referred to as reasons for doubting that others believe in the veracity of the symptoms. In addition, due to the unpredictable nature of their symptoms, patients often miss appointments or avoid making plans, thus contributing to the perception that they have failed others and are therefore judged as not being interested or involved in activities of mutual interest (Cunningham & Jillings, 2006).

Additionally, due to the invisibility of FM symptoms, these patients are likely to experience social pain as well, which involves painful feelings as a result of social conflicts or misunderstanding about illness legitimacy (Ghavidel-Parsa & Bidari, 2021). A recent study show that, among patients with rheumatic diseases, FM patients present the highest levels of invalidation from others (Santiago et al., 2017).

---

[2] In modern times, the Greek word *stigma* represents an attribute someone has that makes a person undesirably different from others (Quintner, 2020).

Previous findings suggest that people with chronic illnesses often adopt social comparison strategies as a way to deal with daily stressors and uncertainty (Terol Cantero et al., 2021). However, such strategies can have counterproductive and pernicious effects (Suls et al., 2002). As stated above, FM patients tend to assess FM symptoms as a limitation that reduces their ability to perform in social contexts, thus fostering negative social comparisons, where the self is view as inferior and incapable, , ultimately leading to negative affect (Beshai et al., 2017). The mounting burden of managing FM symptoms and related functional disability may, then, be a source of thwarted-goals and motives and lead to external shame.

Shame is a response to feeling negatively evaluated by others and is typified by experiencing having deficits, failures, and flaws exposed, and of being an unattractive and undesired self (Tangney & Dearing, 2002). When this experience of being negatively evaluated by others is focused on how others see the self, that triggers external shame, which is the way one believes to exist in the mind of others (Gilbert, 1998; Gilbert & Irons, 2008), directing attention and behavior to trying to influence how others see the self (e.g., by submitting, displaying desirable qualities, try to please others; Cunha et al., 2012). Shame can be internalized when one starts to identify with the mind of the other (Gilbert, 1998; Gilbert & Irons, 2008), engaging in negative feelings and self-judgments for the sake of one's image and to protect the self against attacks or rejection from others (Cunha et al., 2012).

According to the social rank theory (Gilbert, 1989, 2000, 2005; Gilbert & Allan, 1998), human sociability evolved through self-monitoring and self-assessment of the relative position of power one has in relation to others. This social mentality enables the individual to manage social competition for resources and rewards by focusing attention on social signals. Since social acceptance depends on being capable of generating favorable images of oneself in the minds of others (Gilbert, 1998, 2007; Gilbert & Miles, 2000), people are very sensitive and responsive to social signals, namely those related to “what others think and feel about us” (Gilbert, 2007, p. 283).The perception of being socially disregarded (e.g., being criticized, ridiculed, rejected, abused; Cunha et al., 2012) induces threat-related responses, activating shame in an attempt to minimizing the possibility of being rejected or attacked by others.

In addition, social selection is also culturally determined. In fact, the socio-cultural context gives rise to the “ideal self” or the efficient and competent “healthy body, without pain” (Thompson & Kent, 2001). Within the groups, social comparison helps to shape what is consensually perceived as socially attractive or unattractive. Bodily shame may, then, arise when FM patients experience their bodies as physically incompetent, fragile and in this sense undesirable for others. In line with this, research has demonstrated that FM patients tend to exhibit a negative body image perception, with such disturbance being associated with pain severity and cognitive functioning, disease impact, self-identity, quality of life indicators, and healthcare experiences (Akkaya et al., 2012; Boyington et al., 2015).

Considering the importance of social relationships for self-evaluation and for building favorable social roles (Gilbert & Irons, 2008), mental health problems may emerge when one need for belonging and for being accepted is frustrated and denied.

Growing evidence points to an association between shame and high levels of guilt and self-criticism (Castilho et al., 2017; Gilbert & Miles, 2000; Kelly et al., 2012), low self-esteem, and a multiplicity of psychological and somatic symptoms, including depression (Kealy et al., 2018; Pineles et al., 2006; Gilbert, 2000). In fact, depression may emerge when social signals take the form of down-rank attacks or people find themselves in involuntary subordination positions from which they cannot escape (entrapments;

Gilbert & Allan, 1998). The concurrent experiences of feeling devalued and being subject to others' criticism and rejection, along with a perceived loss of ability to compete for social recognition and status, are recognized risk factors for depression (Price & Sloman, 1987). This relationship is particularly evident in people who tend to get involved in derogatory self-judgments and ruminate in face of loss of control in unfavorable social contexts (Gilbert, 2006), which seems to be the case of depressed FM patients (Hassett et al., 2000; Toussaint et al., 2019). However, and despite its association with physical and mental health indicators, the role of external shame in FM remains underexplored.

1.3 Compassion as an antidote to shame

Compassion has long been recognized as a distinguishing quality of the human mind, which evolved to respond to care and kindness from others (Gilbert, 2009a), linked to a caregiving mentality. It results from a deliberate attitude to become sensible to the suffering of others and is rooted in a motivation to alleviate it, offering to others warm care for guidance, protection and emotional support (Gilbert, 2005; Dalai Lama, 2001). Therefore, compassion involves empathy, equanimity, closeness, kindness and altruism (Dalai Lama, 2001). When directed to oneself, this voluntary intention to care and nurture is called self-compassion. According to Neff's definition (2003), self-compassion comprises three main components: kindness directed at oneself (i.e., assuming a comprehensive and non-critical attitude in situations of pain or failure), common humanity (i.e., the perception of suffering and inadequacy as ubiquitous phenomena that are shared by all human beings and not as isolated manifestations), and mindfulness, related to keeping negative thoughts and feelings in a conscious balance, without identifying too much with them (p. 89).

Self-compassion is an important construct in understanding mental health and resilience (MacBeth & Gumley, 2012; Phillips & Hine, 2021). Evidence point to the relevance of compassionate self-responding when facing challenging medical conditions (Carvalho et al., 2020; Pinto-Gouveia et al., 2014). People with rheumatoid arthritis who scored higher in pain acceptance, reported less pain and physical limitation, and showed slower growth rates of depression across time, even when pain and physical limitations increased (Pinto-Gouveia et al., 2015). In a study exploring the role of experiential avoidance and self-compassion on psychological distress, people with chronic pain reported less depression, anxiety and stress when willing to remain in contact with particular private experiences without attempting to control them (Costa & Pinto-Gouveia, 2013).Among chronic pain patients, being uncompassionate towards oneself was found to be significantly associated with pain fusion, pain avoidance, obstructions to valued living, and depression (Carvalho et al., 2020).

Taken as a resilient trait, self-compassion was found to be lower among FM people when compared to other rheumatic populations such as ankylosing spondylitis and rheumatoid arthritis (Toussaint et al., 2019), which may increase the risk of physical and mental health problems.Self-compassion was found to mediate a significant negative association between the belief that the future is changeable even during difficult times and pain severity, in individuals with FM (Chang et al., 2019). The way one perceives the future play a major role in explaining chronic pain-related distress, since people may feel entrapped on a never-ending present or, on the contrary, may feel motivated to engage in more healthy behaviours (Hellström et al., 2000). Also, dispositional self-compassion is associated with better medical adherence in people with FM (Sirois & Hirsch, 2019).

Compassion-focused interventions have also shown promising results in chronic pain. Improvements were recorded in pain distress and intensity, anxiety, depression and self-efficacy, and patients described feeling different, doing things differently and having a changed attitude following the intervention (Penlington, 2019). Also, adaptive coping styles (i.e., active, positive reframing, and acceptance) used by self-compassionate patients were associated with better coping outcomes in chronic illness (Sirois et al., 2015). In FM, compassion-focused interventions resulted in increased general health after treatment, with positive outcomes in clinical severity, anxiety, depression and quality of life that were maintained in a significant way at 3-month follow-up (Montero-Marín et al., 2018).

Despite the growing interest and study of compassion in chronic pain, research is still scarce in what concerns the role of self-compassion in the relationship between fibromyalgia symptoms, shame, and depressive symptoms. Thus, in the present study we intend to explore the association between these variables and to test the mediator role of external shame and self-compassion on the relationship between FM symptoms and depression. Based on the reviewed evidence, we hypothesize that people with FM are likely to experience external shame as a response to the loss of status in the group due to the nature of FM symptoms, which in turn may increase the risk of developing depressive symptoms. Considering that self-compassion is a well-established antidote for shame and a wide-range of psychopathological symptoms (Gilbert, 2005, 2009a, 2009b, 2014; Kim et al., 2011a; Phillips & Hine, 2021; Ross et al., 2019) we hypothesize that self-compassion will mediate the impact of FM symptoms and external shame on depressive symptoms.

II. Methods

2.1 Participants

A sample of 142 women with fibromyalgia was collected between April and May 2021. Participants were aged between 20 and 65 years old (*M* = 47.9, *SD* = 8.8). Most participants were married/cohabiting (*n* = 103, 72.5%), had completed high school or above (*n* = 112, 79.4%), and were currently employed (*n* = 95; 66.9%). More than a half of the participants lived in the center region of Portugal (*n* = 86; 60.6%).

The majority of participants reported having been formally diagnosed with FM by a rheumatologist (*n* = 106; 74.6%), followed by the family doctor (*n* = 9; 6.3%) and the neurologist (*n* = 3, 2.1%). Most participants noticed their first FM symptoms when they were between 20 and 40 years old (*n* = 97; 68.3%) and were diagnosed when they were between 30 and 45 years old (*n* = 90; 63.4%). The majority of the participants experienced FM symptoms for more than 10 years (*n* = 92, 64.8%), or from 5 to 10 years (*n* = 35, 24.7%). Nearly half of the sample (*n* = 49.6%) reported to have been diagnosed with other comorbid chronic medical disease, whereas 76.6% (*n* = 108) reported to suffer or have suffered from a mental health disorder. Most participants reported receiving or have received treatment for a psychiatric disorder (*n* = 85, 60.3%), of which 20% (*n* = 17) are receiving/received psychiatric treatment, 32.9 % (*n* = 28) are receiving/received psychological treatment and 42.4% (*n* = 36) are receiving/received a combination of both. Approximately 70% of the participants were currently taking some sort of medication.

2.2. Measures

Other As Shamer Scale 2 (OAS2; Matos et al., 2015) is a shorter version of the OAS (Allan et al., 1994; Goss et al., 1994; Portuguese version by Matos et al., 2011) easier and quicker to administer, namely in clinical settings. It reduced the 18 items of the original instrument to eight items. It assesses one's perception of existing negatively in the mind of others, that is external shame, through items, such as "*I feel insecure about others' opinions of me*" and "*People see me as unimportant in relation to others",* which are rated using a 5-point Likert scale (0 = never to 4 = almost always). Higher results indicate high levels of external shame. The scale not only replicates the one-factor structure of the original instrument, but it also presents psychometric properties akin to those found for the longer version, namely a very good internal consistency (α = .82) and a good concurrent and divergent validity. In the present study, a Cronbach's alpha of .94 was found.

Self-Compassion Scale – Short Form (SCS-SF; Castilho is composed of 12 items rated on a 5-point Likert scale (from 1 = never to 5 = always). This instrument is designed to measure the quality of relating kindly and compassionately to oneself, including items such as "*When I really go through a difficult moment in my life, I give myself the tenderness and the affection I need"* and "*When I fail something important to me, I tend to feel alone in my failure*." Several factorial structures (1, 2 and 6 factors) have been used. The unidimensional solution was the one used in this study. Both the original (α = .86) and Portuguese (α = .86) versions showed good psychometric properties. The internal consistency of the scale in this study was also very good (α = .91).

Fibromyalgia Impact Questionnaire-Revised (FIQR; Bennett et al., 2009; Portuguese version by Costa et al., 2016) updates the previous FIQ (Burckhardt et al., 1991) to broaden its scope and to access aspects of functioning that became salient in FM assessment, such as memory difficulties, balance, and environmental sensitivity. The scale encompasses 21 items that are organized into three domains: function, overall impact, and symptoms. Participants are asked to rate each item using an 11-point numeric scale (from 0 to 10, in an increasing degree of severity) and using the past seven days as timeframe. The score for each domain is calculated by summing the scores of the corresponding items and dividing it by 3 (for function), 1 (for overall impact) and 2 (for symptoms). An overall score can be computed by summing the weighted score of the 3 domains. Higher scores are indicative of greater impact of FM. Both the original and the Portuguese version of the scale present sound psychometric properties, with very good to excellent internal consistency values, as well as a good temporal stability, acceptable convergent and divergent validity, and good discriminative ability (Bennett et al., 2009). The psychometric properties of the scale in this study (α = .90 for function; α = .82 for overall impact; α = .88 for symptoms) are at the level of the values reported by the Portuguese version of the scale (α = .92, α = .83 and α = .83, respectively). For the purpose of this study, we will only use the symptoms domain of the FIQR.

Hospital Anxiety Depression Scale (HADS; Zigmond & Snaith, 1983; Portuguese version by Pais-Ribeiro et al., 2007) is a self-report scale designed to assess the presence and severity of depressive and anxiety symptoms in the last seven days. It is composed of 14 items rated on a 4-point Likert scale (from 0 to 3). A cut-off score ≥ 11 has been used to identify probable caseness (i.e., depression/anxiety). The original and Portuguese versions presented good psychometric properties. In the Portuguese version, internal consistency values ranged between .76 for anxiety and .81 for depression. The scale also possesses high temporal stability and good convergent and divergent validity. For the purposes of the present study, only the depression subscale was used. A Cronbach's alpha of .84 was obtained.

2.3. Procedures

The present study, which is part of a larger research project sponsored by FCT (ID: SFRH/BD/145954/2019), was approved by the Ethics Committee of the Faculty of Psychology and Educational Sciences of University of Coimbra, Portugal. Participants were recruited online. For this purpose, two nationwide FM associations and a virtual institute that provides services to patients with FM were contacted via email and invited to collaborate. They agreed on publicizing the study on their social networks. For inclusion in the study, participants had to have an established diagnosis of fibromyalgia, being aged between 20 and 65 years, and being able to read and write Portuguese. Those presenting severe psychiatric disorders (e.g., bipolar disorder, borderline personality disorder), showing evident errors in the filling of the questionnaires or being unable to complete the protocol were excluded from the study. Considering the online nature of this study, inclusion and exclusion criteria were assessed through self-report. Before any procedures, information about the specific objectives of the study, the eligibility criteria, and the voluntary nature of participation was provided to participants. The confidentiality and anonymity of the data was also guaranteed. After being explained the study and procedures, participants were asked to provide their informed consent. Only then could they proceed to complete the assessment protocol, which included a sociodemographic and clinical form followed by a set of self-reported questionnaires. The questionnaires were administered through the online survey tool LimeSurvey® and took approximately 30 minutes to complete.

Participants did not receive any compensation for their participation in the investigation.

2.4. Analytic strategy

The present study followed a cross-sectional design. Statistical procedures were performed with IBM SPSS software Statistics 25.0 (Armonk, NY: IBM Corp) and with PROCESS macro, v3.5 (Hayes, 2017).

Preliminary analyses were conducted to test the adequacy of data. Normality was ascertained by inspection of Skewness and Kurtosis values and through the Kolmogorov-Smirnov test. Descriptive statistics were performed to examine the socio-demographic and clinical characteristics of the sample and to describe the variables under study.

The association between the variables as well as its direction and magnitude were explored through Spearman's rank correlations. Cohen's (1988) criteria were used to interpret the correlation coefficients: values from .10 to .29 were considered weak, from .30 and .49 moderate and above .50 large.

To examine whether the relationship between fibromyalgia symptoms and depression was mediated by shame and self-compassion, we conducted a serial multiple mediation model. The bootstrapping method, with 5000 resamples, was used as a way to assess the direct and indirect effects of the variables. Effects were considered statistically significant (at $p < .05$) when the confidence interval (CI) of the variables did not enclose the value 0 (Hayes, 2017).

III. Results

3.1 Preliminary data analysis

Although the values of skewness and kurtosis did not show severe biases to normality, with values below the cut-points of 3 and 8 respectively (Tabachnick & Fidell, 2014), results of the Kolmogorov-Smirnov test indicated that some of the variables did not follow a normal distribution. An inspection of the graphic representation of the variables showed some outliers, which we decided to maintain in order to preserve the natural variability of the constructs and their representativeness. An examination of tolerance and variance inflation factor values showed that the variables did not show multicollinearity issues (VIF < 5).

3.2. Correlation analyses

Spearman rank correlations were conducted in order to explore the relationship among the variables under study. Descriptive data and Spearman's correlations coefficients are presented in Table 1.

All correlations between variables were statistically significant ($p \leq .05$). Results showed moderate-to-strong positive associations between fibromyalgia symptoms, external shame and depression. On contrast, fibromyalgia symptoms were negatively and moderately associated with self-compassion. External shame was positively and strongly associated with depression, but negatively and strongly related to self-compassion. Self-compassion, in turn, was negatively and strongly correlated with depression.

Table 1.

Descriptive statistics and Spearman Correlation coefficients for the variables under study (N=142)

Variable	*M*	*SD*	**1**	**2**	**3**	**4**
1. FM Symptoms (FIQR)	33.3	8.4	1	-	-	-
2. External shame (OAS2)	11.4	7.5	.38***	1	-	-
3. Self-compassion (SCS-sf)	2.9	0.8	-.42***	-.69***	1	-
4. Depression (HADS)	8.6	4.2	.59***	.50***	-.57***	1

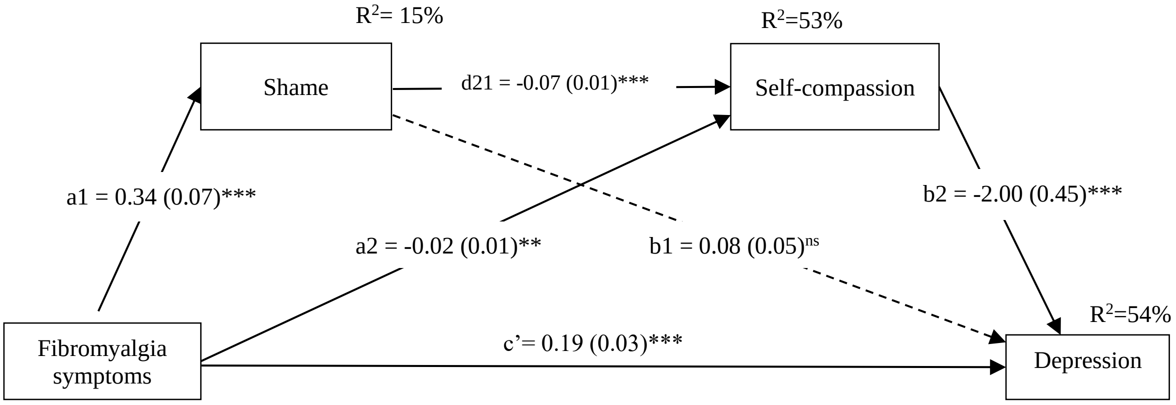
FIQR = Fibromyalgia Impact Questionnaire-Revised; OAS2 = Other as Shamer Scale 2; SCS-sf= Self-compassion Scale-Short Form; HADS = Hospital Anxiety and Depressive Scales.
*** ≤ .001.

3.3. Serial mediation model

To further understand the potential mediator role that shame (M1) and self-compassion(M2) have on the link between FM symptoms and depressive symptoms, a serial multiple mediation analysis was conducted using PROCESS (Hayes, 2017). Figure 1 depicts the statistical diagram that represents the tested model.

Figure 1

Statistical diagram of the path model estimating the indirect effects of fibromyalgia symptoms on depressive symptoms, through shame and self-compassion.



Note. Path values represent unstandardized coefficients. Numbers in parentheses represent standard errors. Dashed lines indicate non-significant direct effects. $^{**}p \leq .010$, $^{***}p \leq .001$.

3.4. Total, direct, and indirect effects

The estimated model was significant [*F* (3,138) = 54.54, *p* < .001] accounting for 54% of the variance of depression.

The total effect of shame and self-compassion on the relation between fibromyalgia's symptoms and depression was statistically significant (Effect = 0.30, SE = 0.03, *p* < .001, 95% CI = [0.23, 0.37]). The direct effect of fibromyalgia's symptoms upon depression was also statistically significant (Effect = 0.19, SE = 0.03, *p* < .001, 95% CI = [0.13, 0.26]). Likewise, the total indirect effect was significant (Effect = 0.11, SE = 0.02, *p* < .001, 95% CI = [0.07, 0.16]).

The specific indirect effect of fibromyalgia's symptoms upon depression via shame was non-significant (Effect = 0.03, SE = 0.02, 95% CI = [−0.00, 0.07]). On the contrary, the indirect effect through self-compassion was significant(Effect = 0.04, SE = 0.02, *p* < .001, 95% CI = [0.01, 0.07]). The indirect effect between fibromyalgia's symptoms and depression through shame and self-compassion was statistically significant (Effect = 0.05, SE = 0.02, *p* < .001, 95% CI = [0.02, 0.08]), indicating that shame and self-compassion mediated the link between fibromyalgia's symptoms and depression.

Discussion and Conclusions

Currently, a view of fibromyalgia as a condition involving a dynamic interdependence of several factors of different order (e.g., neurobiological, genetic, psychological, social) is widely shared (Häuser et al., 2015; Sluka & Clauw, 2016). However, despite the efforts and advances in scientific research, further studies are needed to reveal how different processes operate. Among the underlying psychological and psychosocial mechanisms, those related with depressive symptoms are of utmost importance due to the bidirectional relationship between fibromyalgia and depressive symptoms (Chang et al., 2015). Given that not all fibromyalgia patients become depressed (Gracely et al., 2012; Okifuji et al., 2000), understanding what favors, or in turn buffers against depression, would contribute to the knowledge and treatment of fibromyalgia (Houdenhove & Luyten, 2006; Lange & Petermann, 2010).

Cognitive processes have long been seen to be deeply connected with depression symptoms in fibromyalgia (Aguilera et al., 2019). Research points to the salience of patient's negative appraisals of symptoms' interference in daily life, like pain catastrophizing (Hassett et al., 2000; Rodero et al., 2010), perceived loss of control (Ellingson et al., 2018) and perfectionism (Molnar et al., 2012). Furthermore, recent findings suggest that uncertainty, feelings of threat, perceived low control over illness and, overall stress assessment, had considerable mediating effects over social comparison processes in women with chronic illnesses, including fibromyalgia (Terol Cantero et al., 2021). Additionally, people with fibromyalgia are highly susceptible to criticism and invalidation from others (Carvalho et al., 2021; Ghavidel-Parsa et al., 2015), and tend to present a ruminative thinking style (Toussaint et al., 2019).

So, this study aimed to understand whether the impact of fibromyalgia symptoms upon depression would indirectly operate through variables related to a competitive mentality and a caregiving mentality (e.g., shame and self-compassion).

Correlation analyses showed that there is a positive association between fibromyalgia symptoms and depression, indicating that higher scores of fibromyalgia symptoms are associated with more severe depressive symptoms. These results are in line with the existing literature showing a high degree of comorbidity between fibromyalgia and depressive symptoms (Aguglia et al., 2011; Alciati et al., 2012; Marangell et al., 2011; Nordahl & Stiles, 2007).

Results also showed a positive association between fibromyalgia symptoms and external shame, showing that those with severe symptomatology show a stronger tendency to experience living negatively in the mind if others, thus supporting the hypothesis of fibromyalgia symptoms being related to and acting as a potential source of shame. In fact, feeling accepted and supported by others is fundamental to promote a sense of belongingness and security. People assess their self-worth through comparison with others in relation to valued domains and adapt behavior accordingly in order to obtain favorable social attention. Shame is a way to mediate approval, signaling the possible/real loss of power to obtain social attention. When focused on the body, shame derives from internalized beliefs and self-evaluations of the distance between the real body and the body considered ideal or acceptable (Gilbert & Thompson, 2002). Hence, body shame reinforces feelings of being inappropriate, unwanted, different and disabled.

Further, external shame was positively and strongly associated with depression, showing that higher levels of shame are associated with more severe depressive symptoms. These results are consistent with previous findings about shame being a marker for depression (Gilbert, 2006, 2007; Gilbert & Bailey, 2014; Matos et al., 2013; Matos & Pinto-Gouveia, 2009; Tracy et al., 2007). According to the social rank theory (Gilbert, 1989, 2000, 2005; Gilbert & Allan, 1998), evolutionary mechanisms such as, social competition and defeat-related defense, may account for depressive disorders in modern societies. Depression may result from a primary losing or dc-escalating strategy that enables the individual to accept defeat in face of a dominant other and to accommodate to the situation (the involuntary subordinate strategy; Price et al., 1994).

Negative correlation coefficients were found between self-compassion and both fibromyalgia and depressive symptoms, indicating that higher scores of self-compassion were associated with lower levels of fibromyalgia and depressive symptoms. This may indicate that patients with greater ability for self-soothing, self-support, self-kindness, willingness towards suffering and acceptance of pain, move differently when faced with the challenge of an unpleasant, aversive or painful experience. When things go wrong or fail, patients who present a self-compassionate style, focused on positive memories and self-attributes, seem to be more protected from developing depressive symptoms and to experience fewer FM symptoms. Our data on depressive symptoms are in line with the literature and support the theoretical model proposed by Gilbert (2005, 2009), which postulates that shame, self-criticism and, by contrast, self-compassion, are associated with different affect regulation systems (Depue & Morrone-Strupinsky, 2005; Gilbert, 2005). Self-compassion and self-soothing have a regulatory impact upon the threat and drive systems, to which external shame and self-criticism are associated. Indeed, self-compassion was found to be a reliable predictor of outcomes in most health domains, such as physical health, functional immunity, health behavior, sleep, and danger avoidance (Phillips & Hine, 2021).

In addition, external shame was negatively related to self-compassion, meaning that higher levels of external shame are associated with lower levels of self-compassion. Previous findings indicate that shame is strongly associated with self-criticism and depression, and that self-compassion was found to buffer the effect of self-criticism on depression (Hermanto et al., 2016; Joeng & Turner, 2015).

To further understand the potential mediator role that external shame and self-compassion have on the link between symptoms of fibromyalgia and depressive symptoms, a serial multiple mediation analysis was conducted. Results supported the hypothesized model and explained 54% of depressive symptoms. Overall, external shame and self-compassion were found to mediate the link between fibromyalgia and depression.

The path analysis showed that symptoms of fibromyalgia may give rise to external shame. This goes in line with our hypothesis that fibromyalgia symptoms may be seen as a threat and/or a defeat by patients in whom a social rank mentality is dominant.

These patients are likely to be more focused on social comparison, more engaged in negative self-judgments and, therefore, more susceptible to experience external shame (Gilbert, 2000; Gilbert & Allan, 1998; Gilbert & Miles, 2000).

The role of external shame in the relation between fibromyalgia and depression has been an important gap in the existing literature. However, in a study conducted by Cabrera-Perona and colleagues (2017), 35% of variance in fibromyalgia impact was explained by less upward identification, more upward comparison and more catastrophizing. Furthermore, 42% of the variance in psychological distress was explained by a direct effect of greater levels of upward comparison together with higher fibromyalgia illness impact, suggesting that the way fibromyalgia people evaluate themselves in comparison with others is a relevant factor in fibromyalgia. Other studies showed that shame–proneness was related to both psychological and somatic symptoms (Pineles et al., 2006), and found shame to be strongly associated with depressive symptoms (Kim et al., 2011).

Previous studies found that social rank and shame are strongly correlated and significantly associated with rumination (Cheung et al., 2004). Furthermore, ruminating about causes and consequences of symptoms, was found to interfere with adaptive problem-solving and to foster negative affect (Davis & Nolen-Hoeksema, 2000). In addition, self-focused attention and repetitive thoughts of worry with future threats or about past losses, amplify or maintain distress (Segerstrom et al., 2000).

Data from the current study indicate that the effect of shame on depression is totally mediated by self-compassion.

Self-compassion is a relatively new construct in FM research, but studies conducted until the moment on other chronic conditions point to the role of self-compassion as an antidote, both for shame and for depression (Falconer et al., 2014; MacBeth & Gumley, 2012; Purdie & Morley, 2016; Ross et al., 2019; Sirois & Hirsch, 2019). Self-compassion was found to be an important coping strategy in face of stressful situations (Allen & Leary, 2010), to buffer against anxiety (Neff et al., 2007), to decrease self-criticism and feelings of insecurity (Falconer et al., 2014)and to be associated with health-promoting behaviors (Terry & Leary, 2011). The current study also supports previous evidence on the role of self-compassion in coping with symptoms of fibromyalgia (Montero-Marín et al., 2018; Sirois & Hirsch, 2019), with persistent musculoskeletal pain (Wren et al., 2012) and with chronic illness (Sirois et al., 2015). A recent longitudinal study with chronic pain patients demonstrated that self-compassion was not only a significant predictor of depression one year later but that it also seemed to buffer the impact of functional impairment imposed by chronic pain on the development of depressive symptoms (Carvalho et al., 2020).

Some limitations should be taking into consideration when interpreting these findings. Participants were recruited online, and therefore the sample was not entirely representative of the fibromyalgia female population, which tend to be older and less educated than those who are familiar with the use of digital platforms. Also, the sample is composed of only women, which limits the generalization of the results to males. Unfortunately, this is a common limitation of most studies in the field. Efforts to include men should thus be taken in future research. This would also allow addressing an often-overlooked topic in the field, namely gender differences in the psychosocial make-up of patients and its association with different disease profiles, symptom-related trajectories, and outcomes.

The cross-sectional design of the study is another limitation since it precludes drawing conclusions about causal relations between the variables. Longitudinal studies are needed to fully understand the interplay between these constructs over time. The incremental value of other constructs that may account for the development of depression in people with FM should also be addressed by future studies (e.g., body image concerns, self-criticism, fears of compassion, embarrassment, guilt and humiliation, amongst others).

The current study is one of the few, to our knowledge, to investigate whether shame is associated with symptoms of fibromyalgia. Findings from the current study add to the current evidence by showing that shame and self-compassion may constitute relevant players in fibromyalgia and associated emotional distress and that these constructs should be more widely and routinely investigated to understand the cognitive-affective underpinnings of both in fibromyalgia.

It is possible to protect patients from becoming depressed by working to demystify fibromyalgia and to de-stigmatize those who suffer from it. It seems crucial to provide patients with feelings of safeness, of being understood and accepted by their families, friends, coworkers and employers, so that people with fibromyalgia may experience less invalidation from others and remain able to perform their social roles. Furthermore, in FM, as in other chronic diseases, the ability to have compassionate, accepting and caring attitudes towards oneself seems to play a key role in mitigating the effect of shame on depressive symptoms (Steindl et al., 2021; Trindade et al., 2018).

Compassion Focused Therapy (Gilbert, 2009b, 2010, 2014) is a therapeutic approach aimed specifically at individuals high in self-criticism and shame, for whom it is difficult to access the positive affect regulation system. Central to this therapeutic approach is the development of the soothing and bonding system through the stimulation of positive affect outputs. This system is particularly sensitive to interpersonal signals of safety, acceptance and being cared for, loved and valued. Furthermore, this system is central to emotion regulation, as it disables the search/drive system and the threat-defense system.FM patients need to experience safety and warmth in their interactions (with others and with the self), to tolerate negative emotional states and the experience of pain in its multidimensionality In other words, FM patients would learn a set of skills and attributes aiming at developing a compassionate internal relationship (instead of a critical relationship of condemnation and guilt). In general terms, patients would learn that thoughts and images operate as external stimuli that activate different parts of the brain. The key message of this approach is that it is possible to train the brain to think and feel differently by stimulating physiological systems related to positive affect.

In sum, our findings suggest the importance of addressing external shame in patients with fibromyalgia and the potential benefits of including self-compassion in the existing psychological interventions for the management of FM.

References

Aguglia, A., Salvi, V., Maina, G., Rossetto, I., & Aguglia, E. (2011). Fibromyalgia syndrome and depressive symptoms: Comorbidity and clinical correlates. *Journal of Affective Disorders*, *128*(3), 262–266. https://doi.org/10.1016/j.jad.2010.07.004.

Aguilera, M., Paz, C., Compañ, V., Medina, J. C., & Feixas, G. (2019). Cognitive rigidity in patients with depression and fibromyalgia. *International Journal of Clinical and Health Psychology*, *19*(2), 160–164. https://doi.org/10.1016/j.ijchp.2019.02.002.

Alciati, A., Sgiarovello, P., Atzeni, F., & Sarzi-Puttini, P. (2012). Psychiatric problems in fibromyalgia: clinical and neurobiological links between mood disorders and fibromyalgia. *Reumatismo,* *64*(4), 268–274. https://doi.org/10.4081/reumatismo.2012.268.

Allan, S., Gilbert, P., & Goss, K. (1994). An exploration of shame measures—II: psychopathology. *Personality and Individual Differences*, *17*(5), 719–722. https://doi.org/10.1016/0191-8869(94)90150-3.

Allen, A. B., & Leary, M. R. (2010). Self-Compassion, Stress, and Coping. *Social and Personality Psychology Compass*, *4*(2), 107–118. https://doi.org/10.1111/j.1751-9004.2009.00246.x.

Arnold, L. M., Bennett, R. B., Crofford, L. J., Dean, L. E., Clauw, D. J., Goldenberg, D. L., Fitzcharles, M-A., Paiva, E. S., Staud, R., Sarzi-Puttini, P., Buskila, D. & Macfarlane, G. J. (2018). AAPT Diagnostic Criteria for Fibromyalgia. *The Journal of Pain,* 1-18. https://doi.org/10.1016/j.jpain.2018.10.008.

Bennett, R. M., Friend, R., Jones, K. D., Ward, R., Han, B. K., & Ross, R. L. (2009). The Revised Fibromyalgia Impact Questionnaire (FIQR):validation and psychometric properties. *Arthritis Research & Therapy*, *11*(4), Article R120. https://doi.org/10.1186/ar2783.

Beshai, S., Mishra, S., Mishra, S., & Carleton, R. N. (2017). Personal relative deprivation associated with functional disorders via stress: An examination of fibromyalgia and gastrointestinal symptoms. *PLOS ONE*, *12*(12), Article e0189666. https://doi.org/10.1371/journal.pone.0189666.

Borchers, A. T., & Gershwin, M. E. (2015). Fibromyalgia: A Critical and Comprehensive Review. *Clinical Reviews in Allergy & Immunology*, *49*(2), 100–151. https://doi.org/10.1007/s12016-015-8509-4.

Bowers, H., Wroe, A. L., & Pincus, T. (2017). 'Isn't it ironic?' Beliefs about the unacceptability of emotions and emotional suppression relate to worse outcomes in fibromyalgia. *Clinical Rheumatology*, *36*(5), 1121–1128. https://doi.org/10.1007/s10067-017-3590-0.

Branco, J. C., Bannwarth, B., Failde, I., Abello Carbonell, J., Blotman, F., Spaeth, M., Saraiva, F., Nacci, F., Thomas, E., Caubère, J.-P., Le Lay, K., Taieb, C., & Matucci-Cerinic, M. (2010). Prevalence of Fibromyalgia: A Survey in Five European Countries. *Seminars in Arthritis and Rheumatism*, *39*(6), 448–453. https://doi.org/10.1016/j.semarthrit.2008.12.003.

Buckelew, S. P., Huyser, B., Hewett, J. E., Conway, R., & Kay, D. R. (1996). Self-Efficacy Predicting Outcome Among Fibromyalgia Subjects. *Arthritis Care and Research*, *9*(2), 8.

Burckhardt, C. S., Clark, S. R., & Bennett, R. M. (1991). The fibromyalgia impact questionnaire: development and validation. *The Journal of Rheumatology*, *18*(5), 728–733.

Cabrera-Perona, V., Buunk, A. P., Terol-Cantero, M. C., Quiles-Marcos, Y., & Martín-Aragón, M. (2017). Social comparison processes and catastrophising in fibromyalgia: A path analysis. *Psychology & Health*, *32*(6), 745–764. https://doi.org/10.1080/08870446.2017.1307370.

Carvalho, S. A., Pinto-Gouveia, J., Gillanders, D., Lapa, T., Valentim, A., Santos, E., Paciência, J., & Castilho, P. (2020a). Above and beyond emotional suffering: The unique contribution of compassionate and uncompassionate self-responding in chronic pain. *Scandinavian Journal of Pain*, *20*(4), 853–857. https://doi.org/10.1515/sjpain-2020-0082.

Carvalho, S. A., Trindade, I. A., Gillanders, D., Pinto-Gouveia, J., & Castilho, P. (2020b). Self-Compassion and Depressive Symptoms in Chronic Pain (CP): A 1-Year Longitudinal Study. *Mindfulness*, *11*(3), 709–719. https://doi.org/10.1007/s12671-019-01292-7

Carvalho, S., Pinto-Gouveia, J., Gillanders, D., & Castilho, P. (2021). Perceived validation and criticism in pain: Development of a new measure in chronic pain. *European Journal of Pain*, *25*(1), 136–148. https://doi.org/10.1002/ejp.1655.

Castilho, P., Pinto-Gouveia, J., & Duarte, J. (2015). Evaluating the Multifactor Structure of the Long and Short Versions of the Self-Compassion Scale in a Clinical Sample: Factor analysis of the Long and Short Self-Compassion Scale. *Journal of Clinical Psychology*, *71*(9), 856–870. https://doi.org/10.1002/jclp.22187.

Castilho, P., Pinto-Gouveia, J., & Duarte, J. (2017). Two forms of self-criticism mediate differently the shame-psychopathological symptoms link. *Psychology and Psychotherapy: Theory, Research and Practice*, *90*(1), 44–54. https://doi.org/10.1111/papt.12094.

Chang, E. C., Lucas, A. G., Chang, O. D., Angoff, H. D., Li, M., Duong, A. H., Huang, J., Perera, M. J., Sirois, F. M., & Hirsch, J. K. (2019). Relationship between Future Orientation and Pain Severity in Fibromyalgia Patients: Self-compassion as a Coping Mechanism. *Social Work*, *64*(3), 253–258. https://doi.org/10.1093/sw/swz013.

Chang, M.-H., Hsu, J.-W., Huang, K.-L., Su, T.-P., Bai, Y.-M., Li, C.-T., Yang, A. C., Chang, W.-H., Chen, T.-J., Tsai, S.-J., & Chen, M.-H. (2015). Bidirectional Association Between Depression and Fibromyalgia Syndrome: A Nationwide Longitudinal Study. *The Journal of Pain*, *16*(9), 895–902. https://doi.org/10.1016/j.jpain.2015.06.004.

Cheung, M. S.-P., Gilbert, P., & Irons, C. (2004). An exploration of shame, social rank and rumination in relation to depression. *Personality and Individual Differences*, *36*(5), 1143–1153. https://doi.org/10.1016/S0191-8869(03)00206-X.

Costa, J., & Pinto-Gouveia, J. (2013). Experiential avoidance and self-compassion in chronic pain: Experiential avoidance. *Journal of Applied Social Psychology*, *43*(8), 1578–1591. https://doi.org/10.1111/jasp.12107.

Cunha, M., Matos, M., Faria, D., & Zagalo, S. (2012). Shame Memories and Psychopathology in Adolescence: The Mediator Effect of Shame. *International Journal of Psychology*, *12*(2), 203-218.

Cunningham, M. M., & Jillings, C. (2006). Individuals' Descriptions of Living With Fibromyalgia. *Clinical Nursing Research*, *15*(4), 258–273. https://doi.org/10.1177/1054773806291853.

Dalai Lama. (2001). Ethics for the New Millennium. (2nd ed.). Editorial Presença.

Davis, M., Zautra, A., & Reich, J. (2001). Vulnerability to stress among women in chronic pain from fibromyalgia and osteoarthritis. *Annals of behavioral medicine : a publication of the Society of Behavioral Medicine*, *23*, 215–226.

Davis, R. N., & Nolen-Hoeksema, S. (2000). Cognitive inflexibility among ruminators and nonruminators. *Cognitive Therapy and Research*, *24*(6), 699-711.

Depue, R. A., & Morrone-Strupinsky, J. V. (2005). A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation. *Behavioral and Brain Sciences*, *28*(03). https://doi.org/10.1017/S0140525X05000063.

Ellingson, L. D., Stegner, A. J., Schwabacher, I. J., Lindheimer, J. B., & Cook, D. B. (2018). Catastrophizing Interferes with Cognitive Modulation of Pain in Women with Fibromyalgia. *Pain Medicine*, *19*(12), 2408–2422. https://doi.org/10.1093/pm/pny008.

Falconer, C. J., Slater, M., Rovira, A., King, J. A., Gilbert, P., Antley, A., & Brewin, C. R. (2014). Embodying Compassion: A Virtual Reality Paradigm for Overcoming Excessive Self-Criticism. *PLOS ONE*, *9*(11), e111933. https://doi.org/10.1371/journal.pone.0111933.

Fietta, P., Fietta, P., & Manganelli, P. (2007). Fibromyalgia and psychiatric disorders. *Acta Biomedica*, *78*, 88-95.

Galvez-Sánchez, C. M., Reyes del Paso, G. A., & Duschek, S. (2018). Cognitive Impairments in Fibromyalgia Syndrome: Associations with Positive and Negative Affect, Alexithymia, Pain Catastrophizing and Self-Esteem. *Frontiers in Psychology*, *9*, 377. https://doi.org/10.3389/fpsyg.2018.00377.

Gaston-Johansson, F., Gustafsson, M., Felldin, R., & Sanne, H. (1990). Comparative study of feelings, attitudes and behaviors of patients with fibromyalgia and rheumatoid arthritis. *Social Science and Medicine*, *31*(8), 941-947.

Geenen, R., van Ooijen-van der Linden, L., Lumley, M. A., Bijlsma, J. W. J., & van Middendorp, H. (2012). The match–mismatch model of emotion processing styles and emotion regulation strategies in fibromyalgia. *Journal of Psychosomatic Research*, *72*(1), 45–50. https://doi.org/10.1016/j.jpsychores.2011.09.004.

Ghavidel-Parsa, B., Amir Maafi, A., Aarabi, Y., Haghdoost, A., Khojamli, M., Montazeri, A., Sanaei, O., & Bidari, A. (2015). Correlation of invalidation with symptom severity and health status in fibromyalgia. *Rheumatology*, *54*(3), 482–486. https://doi.org/10.1093/rheumatology/keu355.

Ghavidel-Parsa, B., & Bidari, A. (2021). Two sides on the fibromyalgia coin: Physical pain and social pain (invalidation). *Clinical Rheumatology*, *40*(3), 841–848. https://doi.org/10.1007/s10067-020-05304-z.

Gilbert, P. (1998). What is shame? Some core issues and controversies. In *Shame: Interpersonal behavior, psychopathology, and culture* (pp. 3–38). Oxford University Press.

Gilbert, P. (2000). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology & Psychotherapy* *7*(3), 174-189.https://doi.org/10.1002/1099-0879(200007)7:3<174::AID-CPP236>3.0.CO;2-U.

Gilbert, P. (2005). Social Mentalities: A Biopsychosocial and Evolutionary Approach to Social Relationships. In M. W. Baldwin (Ed.), *Interpersonal cognition* (pp. 299–333). Guilford Press.

Gilbert, P. (2006). Evolution and depression: Issues and implications. *Psychological Medicine*, *36*(3), 287–297. https://doi.org/10.1017/S0033291705006112.

Gilbert, P. (2007). The evolution of shame as a marker for relationship security: A biopsychosocial approach. In J. L. Tracy, R. W. Robins, & J. P. Tangney (Eds.), *The self-conscious emotions: Theory and research* (pp. 283–309). Guilford Press.

Gilbert, P. (2009a). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment*, *15*(3), 199–208. https://doi.org/10.1192/apt.bp.107.005264.

Gilbert, P. (2009b). *The Compassionate mind*. New Harbinger Publications.

Gilbert, P. (2010). *Compassion focused therapy: Distinctive features*. Routledge.

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology*, *53*(1), 6–41. https://doi.org/10.1111/bjc.12043.

Gilbert, P. (Ed.). (2005). Compassion: Conceptualisations, research and use in psychotherapy. Routledge.

Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: an exploration of an evolutionary view. *Psychological Medicine*, *28*(3), 585–598. https://doi.org/10.1017/S0033291798006710.

Gilbert, P., & Bailey, K. (2014). *Genes on the couch: Explorations in evolutionary psychotherapy* (1st ed.). Routledge. https://doi.org/10.4324/9781315783314.

Gilbert, P., & Irons, C. (2008). Shame, self-criticism, and self-compassion in adolescence. Em N. B. Allen & L. B. Sheeber (Eds.), *Adolescent Emotional Development and the Emergence of Depressive Disorders* (pp. 195–214). Cambridge University Press. https://doi.org/10.1017/CBO9780511551963.011.

Gilbert, P., & Miles, J. N. V. (2000). Sensitivity to social put-down: It’s relationship to perceptions of social rank, shame, social anxiety, depression, anger and self-other blame. *Personality and Individual Differences*, *29*(4), 757–774. https://doi.org/10.1016/S0191-8869(99)00230-5.

Goss, K., Allan, S., & Gilbert, P. (1994). An exploration of shame measure I: The Other As Shamer scale. *Personal Individual Differences,17*(5), 713-717.

Gracely, R. H., Ceko, M., & Bushnell, M. C. (2012). Fibromyalgia and Depression. *Pain Research and Treatment*, *2012*, 1–9. https://doi.org/10.1155/2012/486590.

Hassett, A. L., Cone, J. D., Patella, S. J., & Sigal, L. H. (2000). The role of catastrophizing in the pain and depression of women with fibromyalgia syndrome. *Arthritis & Rheumatism, 43*(11), 2493–2500. https://doi.org/10.1002/1529-0131(200011)43:11<2493:AID-ANR17>3.0.CO;2-W.

Häuser, W., Ablin, J., Fitzcharles, M.-A., Littlejohn, G., Luciano, J. V., Usui, C., & Walitt, B. (2015). Fibromyalgia. *Nature Reviews Disease Primers*, *1*(1), 15022. https://doi.org/10.1038/nrdp.2015.22.

Häuser, W., Perrot, S., Clauw, D. J., & Fitzcharles, M. A. (2018). Unravelling fibromyalgia—steps toward individualized management. *The Journal of Pain*, *19*(2), 125-134.

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. (2nd ed.). Guilford Publications.

Hellström, C., Jansson, B., & Carlsson, S. G. (2000). Perceived future in chronic pain: The relationship between outlook on future and empirically derived psychological patient profiles. *European Journal of Pain*, *4*(3), 283–290. https://doi.org/10.1053/eujp.2000.0184.

Hermanto, N., Zuroff, D. C., Kopala-Sibley, D. C., Kelly, A. C., Matos, M., Gilbert, P., & Koestner, R. (2016). Ability to receive compassion from others buffers the depressogenic effect of self-criticism: A cross-cultural multi-study analysis. *Personality and Individual Differences*, *98,* 324–332. https://doi.org/10.1016/j.paid.2016.04.055.

Houdenhove, B. V., & Luyten, P. (2006). Stress, depression and fibromyalgia. *Acta Neurologica Belgica, 106,* 149-156.

Joeng, J. R., & Turner, S. L. (2015). Mediators between self-criticism and depression: Fear of compassion, self-compassion, and importance to others. *Journal of Counseling Psychology, 62*(3), 453–463. https://doi.org/10.1037/cou0000071.

Kelly, A. C., Zuroff, D. C., Leybman, M. J., & Gilbert, P. (2012). Social Safeness, Received Social Support, and Maladjustment: Testing a Tripartite Model of Affect Regulation. *Cognitive Therapy and Research*, *36*(6), 815–826. https://doi.org/10.1007/s10608-011-9432-5.

Kim, S., Thibodeau, R., & Jorgensen, R. S. (2011a). Shame, Guilt, and Depressive symptoms: A Meta-Analytical Review. *Psychological Bulletin*, *137*(1), 68–96. https://doi.org/10.1037/a0021466.

Kim, S., Thibodeau, R., & Jorgensen, R. S. (2011b). Shame, guilt, and depressive symptoms: A meta-analytic review. *Psychological Bulletin*, *137*(1), 68–96. https://doi.org/10.1037/a0021466.

Kool, M. B., van Middendorp, H., Boeije, H. R., & Geenen, R. (2009). Understanding the Lack of Understanding: Invalidation From the Perspective of the Patient with Fibromyalgia. *Arthritis & Rheumatism*, *61*(12), 1650–1656. https://doi.org/10.1002/art.24922.

Lange, M., & Petermann, F. (2010). Influence of depression on fibromyalgia: A systematic review. *Der Schmerz, 24*(4), 326–333. https://doi.org/10.1007/s00482-010-0937-8.

Leadley, R. M., Armstrong, N., Lee, Y. C., Allen, A., & Kleijnen, J. (2012). Chronic Diseases in the European Union: The Prevalence and Health Cost Implications of Chronic Pain. *Journal of Pain & Palliative Care Pharmacotherapy*, *26*(4), 310–325. https://doi.org/10.3109/15360288.2012.736933.

Løge-Hagen, J. S., Sæle, A., Juhl, C., Bech, P., Stenager, E., & Mellentin, A. (2019). Prevalence of depressive disorder among patients with fibromyalgia: Systematic review and meta-analysis. *Journal of Affective Disorders*, *245*, 1098–1105. https://doi.org/10.1016/j.jad.2018.12.001.

MacBeth, A., & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review*, *32*(6), 545–552. https://doi.org/10.1016/j.cpr.2012.06.003.

Marangell, L. B., Clauw, D. J., Choy, E., Wang, F., Shoemaker, S., Bradley, L., Mease, P., & Wohlreich, M. M. (2011). Comparative pain and mood effects in patients with comorbid fibromyalgia and major depressive disorder: Secondary analyses of four pooled randomized controlled trials of duloxetine. *Pain, 152*(1), 31–37. https://doi.org/10.1016/j.pain.2010.05.029.

Matos, M., & Pinto-Gouveia, J. (2009). Shame as a Traumatic Memory. *Clinical Psychology& Psychotherapy*. https://doi.org/10.1002/cpp.659.

Matos, M., Pinto-Gouveia, J., & Costa, V. (2013). Understanding the Importance of Attachment in Shame Traumatic Memory Relation to Depression: The Impact of Emotion Regulation Processes. *Clinical Psychology & Psychotherapy*, *20*(2), 149–165. https://doi.org/10.1002/cpp.786.

Matos, M., Pinto-Gouveia, J., Gilbert, P., Duarte, C., & Figueiredo, C. (2015). The Other As Shamer Scale – 2: Development and validation of a short version of a measure of external shame. *Personality and Individual Differences*, *74,* 6–11. https://doi.org/10.1016/j.paid.2014.09.037.

Mengshoel, A. M., Sim, J., Ahlsen, B., & Madden, S. (2018). Diagnostic experience of patients with fibromyalgia–A meta-ethnography. *Chronic Illness*, *14*(3), 194–211. https://doi.org/10.1177/1742395317718035.

Molar, D. S., Flett, G. L., Sadava, S. W., & Colautti, J. (2012). Perfectionism and health functioning in women with fibromyalgia. *Journal of Psychosomatic Research*, *73*(4), 295–300. https://doi.org/10.1016/j.jpsychores.2012.08.001.

Montero-Marín, J., Navarro-Gil, M., Puebla-Guedea, M., Luciano, J. V., Van Gordon, W., Shonin, E., & García-Campayo, J. (2018). Efficacy of "Attachment-Based Compassion Therapy" in the Treatment of Fibromyalgia: A Randomized Controlled Trial. *Frontiers in Psychiatry*, *8*. https://doi.org/10.3389/fpsyt.2017.00307.

Neff, K. D. (2003). Self-compassion: An Alternative Conceptualization of a Healthy Attitude Toward Oneself. *Self and Identity*, *2*(2), 85–101. https://doi.org/10.1080/15298860309032.

Neff, K. D., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41*(1), 139–154. https://doi.org/10.1016/j.jrp.2006.03.004.

Nordahl, H. M., & Stiles, T. C. (2007). Personality styles in patients with fibromyalgia, major depression and healthy controls. *Annals of General Psychiatry, 6*(9). https://doi.org/10.1186/1744-859X-6-9.

Okifuji, A., Turk, D. C., & Sherman, J. J. (2000). Evaluation of the relationship between depression and fibromyalgia syndrome: why aren't all patients depressed? *The Journal of Rheumatology, 27*(1), 212–219.

Pais-Ribeiro, J., Silva, I., Ferreira, T., Martins, A., Meneses, R., & Baltar, M. (2007). Validation study of a Portuguese version of the Hospital Anxiety and Depression Scale. *Psychology, Health & Medicine, 12*(2), 225–237. https://doi.org/10.1080/13548500500524088.

Penlington, C. (2019). Exploring a compassion-focused intervention for persistent pain in a group setting. *British Journal of Pain*, *13*(1), 59–66. https://doi.org/10.1177/2049463718772148.

Phillips, W. J., & Hine, D. W. (2021). Self-Compassion, Physical Health, and Health Behaviour: A Meta-Analysis. *Health Psychology Review*, *15*(1), 113–139. https://doi.org/10.1080/17437199.2019.1705872.

Pineles, S. L., Street, A. E., & Koenen, K. C. (2006). The Differential Relationships of Shame–Proneness And Guilt–Proneness to Psychological And Somatization Symptoms. *Journal of Social and Clinical Psychology*, *25*(6), 688–704. https://doi.org/10.1521/jscp.2006.25.6.688.

Pinto, A. M., Costa, C., Pereira, A. T., Marques, M., Silva, J. A. P. da, & Macedo, A. (2016). Exploring the factorial structure of the Revised Fibromyalgia Impact Questionnaire (FIQR) in a Portuguese sample of fibromyalgia patients. *European Psychiatry*, *33*(S1), S206–S207. https://doi.org/10.1016/j.eurpsy.2016.01.495.

Pinto, A.M., Geenen, R., Castilho, P., & da Silva, J.A.P. (2020). Progress towards improved non-pharmacological management of fibromyalgia [Editorial]. *Joint Bone Spine*, *87*(5), 377-379.

Pinto-Gouveia, J., Costa, J., & Marôco, J. (2015). The first 2 years of rheumatoid arthritis: The influence of acceptance on pain, physical limitation and depression. *Journal of Health Psychology*, *20*(1), 102–112. https://doi.org/10.1177/1359105313499807.

Pinto-Gouveia, J., Duarte, C., Matos, M., & Fráguas, S. (2014). The Protective Role of Self-compassion in Relation to Psychopathology Symptoms and Quality of Life in Chronic and in Cancer Patients: The Protective Role of Self-compassion in Chronic and Cancer Patients. *Clinical Psychology & Psychotherapy*, *21*(4), 311–323. https://doi.org/10.1002/cpp.1838.

Price, J. S., & Sloman, L. (1987). Depression as yielding behavior: An animal model based on Schjelderup-Ebbe's pecking order. *Ethology and Sociobiology*, *8*, 85–98. https://doi.org/10.1016/0162-3095(87)90021-5.

Price, J., Sloman, L., Gardner, R., Gilbert, P., & Rohde, P. (1994). The social competition hypothesis of depression. *British Journal of Psychiatry*, *164*(3), 309–315. https://doi.org/10.1192/bjp.164.3.309.

Purdie, F., & Morley, S. (2016). Compassion and chronic pain. *Pain*, *157*(12), 2625–2627. https://doi.org/10.1097/j.pain.0000000000000638.

Quintner, J. (2020). Why Are Women with Fibromyalgia so Stigmatized? *Pain Medicine*, *21*(5), 882–888. https://doi.org/10.1093/pm/pnz350.

Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and Factorial Validation of a Short Form of the Self-Compassion Scale. *Clinical Psychology & Psychotherapy*, *18*(3), 250–255. https://doi.org/10.1002/cpp.702.

Robinson, R. L., Kroenke, K., Mease, P., Williams, D. A., Chen, Y., D'Souza, D., Wohlreich, M., & McCarberg, B. (2012). Burden of Illness and Treatment Patterns for Patients with Fibromyalgia. *Pain Medicine*, *13*(10), 1366–1376. https://doi.org/10.1111/j.1526-4637.2012.01475.x.

Rodero, B., Casanueva, B., García-Campayo, J., Roca, M., Magallón, R., & López del Hoyo, Y. (2010). Stages of chronicity in fibromyalgia and pain catastrophising: a cross-sectional study. *BMC Musculoskeletal Disorders*, *11*(1), 251. https://doi.org/10.1186/1471-2474-11-251.

Ross, N. D., Kaminski, P. L., & Herrington, R. (2019). From childhood emotional maltreatment to depressive symptoms in adulthood: The roles of self-compassion and shame. *Child Abuse & Neglect*, *92*, 32–42. https://doi.org/10.1016/j.chiabu.2019.03.016.

Santiago, M. G., Marques, A., Kool, M., Geenen, R., & da Silva, J. A. P. (2017). Invalidation in Patients with Rheumatic Diseases: Clinical and Psychological Framework. *The Journal of Rheumatology*, *44*(4), 512–518. https://doi.org/10.3899/jrheum.160559.

Schaefer, C., Mann, R., Masters, E. T., Cappelleri, J. C., Daniel, S. R., Zlateva, G., McElroy, H. J., Chandran, A. B., Adams, E. H., Assaf, A. R., McNett, M., Mease, P., Silverman, S., & Staud, R. (2016). The Comparative Burden of Chronic Widespread Pain and Fibromyalgia in the United States. *Pain Practice*, *16*(5), 565–579. https://doi.org/10.1111/papr.12302.

Segerstrom, S. C., Tsao, J. C. I., Alden, L. E., & Craske, M. G. (2000). Worry and rumination: Repetitive thought as a concomitant and predictor of negative mood. *Cognitive Therapy and Research, 24*(6), 671–688.https://doi.org/10.1023/A:1005587311498.

Sirois, F. M., & Hirsch, J. K. (2019). Self-Compassion and Adherence in Five Medical Samples: The Role of Stress. *Mindfulness, 10*(1), 46–54. https://doi.org/10.1007/s12671-018-0945-9.

Sirois, F. M., Molnar, D. S., & Hirsch, J. K. (2015). Self-Compassion, Stress, and Coping in the Context of Chronic Illness. *Self and Identity*, *14*(3), 334–347. https://doi.org/10.1080/15298868.2014.996249.

Sluka, K. A., & Clauw, D. J. (2016). Neurobiology of fibromyalgia and chronic widespread pain. *Neuroscience*, *338*, 114–129. https://doi.org/10.1016/j.neuroscience.2016.06.006.

Steindl, S. R., Matos, M., & Creed, A. K. (2021). Early shame and safeness memories, and later depressive symptoms and safe affect: The mediating role of self-compassion. *Current Psychology*, *40*(2), 761–771. https://doi.org/10.1007/s12144-018-9990-8.

Suls, J., Martin, R., & Wheeler, L. (2002). Social comparison: Why, with whom, and with what effect? *Current Directions in Psychological Science*, *11*(5), 159–163. https://doi.org/10.1111/1467-8721.00191.

Tabachnick, B. G., & Fidell, L. S. (2014). *Using Multivariate Statistics* (Pearson new international edition, 6th ed.). Pearson.

Terol Cantero, M. C., Bernabé, M., Martín-Aragón, M., Vázquez, C., & Buunk, A. P. (2021). Social Comparison and Stress Appraisal in Women with Chronic Illness. *International Journal of Environmental Research and Public Health*, *18*(10), 5483. https://doi.org/10.3390/ijerph18105483.

Terry, M. L., & Leary, M. R. (2011). Self-compassion, self-regulation, and health. *Self and Identity*, *10*(3), 352–362. https://doi.org/10.1080/15298868.2011.558404.

Thiagarajah, A. S., Guymer, E. K., Leech, M., & Littlejohn, G. O. (2014). The relationship between fibromyalgia, stress and depression. *International Journal of Clinical Rheumatology*, *9*(4), 371–384. https://doi.org/10.2217/ijr.14.30.

Thompson, A., & Kent, G. (2001). Adjusting to disfigurement: Processes involved in dealing with being visibly different. *Clinical Psychology Review*, *21*(5), 663–682. https://doi.org/10.1016/S0272-7358(00)00056-8.

Toussaint, L., Sirois, F., Hirsch, J., Kohls, N., Weber, A., Schelling, J., Vajda, C., & Offenbäecher, M. (2019). Anger rumination mediates differences between fibromyalgia patients and healthy controls on mental health and quality of life. *Personality and Mental Health*, *13*(3), 119–133. https://doi.org/10.1002/pmh.1445.

Tracy, J. L., Robins, R. W., & Tangney, J. P. (2007). *The self-conscious emotions: Theory and research*. Guilford Press.

Trindade, I. A., Duarte, J., Ferreira, C., Coutinho, M., & Pinto-Gouveia, J. (2018a). The impact of illness-related shame on psychological health and social relationships: Testing a mediational model in students with chronic illness. *Clinical Psychology & Psychotherapy*, *25*(3), 408–414. https://doi.org/10.1002/cpp.2175.

Trindade, I. A., Marta-Simões, J. Ferreira, C. & Pinto-Gouveia, J. (2018b). Chronic illness-related cognitive fusion explains the impact of body dissatisfaction and shame on depression symptoms in breast cancer patients. *Clinical Psychology & Psychotherapy,* doi:10.1002/cpp.2323.

Trucharte, A., Leon, L., Castillo-Parra, G., Magán, I., Freites, D., & Redondo, M. (2020). Emotional regulation processes: Influence on pain and disability in fibromyalgia patients. *Clinical and Experimental Rheumatology*, *38,* S40-S46.

van Middendorp, H., Lumley, M. A., Jacobs, J. W. G., van Doornen, L. J. P., Bijlsma, J. W. J., & Geenen, R. (2008). Emotions and emotional approach and avoidance strategies in fibromyalgia. *Journal of Psychosomatic Research*, *64*(2), 159–167. https://doi.org/10.1016/j.jpsychores.2007.08.009.

Walitt, B., Fitzcharles, M.-A., Hassett, A. L., Katz, R. S., Häuser, W., & Wolfe, F. (2011). The Longitudinal Outcome of Fibromyalgia: A Study of 1555 Patients. *The Journal of Rheumatology*, *38*(10), 2238–2246. https://doi.org/10.3899/jrheum.110026.

Wentz, K., Lindberg, C., & Hallberg, L. (2004). Psychological Functioning In Women With Fibromyalgia: A Grounded Theory Study. *Health Care for Women International*, *25*(8), 702–729. https://doi.org/10.1080/07399330490475575.

White, L. A., Robinson, R. L., Yu, A. P., Kaltenboeck, A., Samuels, S., Mallett, D., & Birnbaum, H. G. (2009). Comparison of Health Care Use and Costs in Newly Diagnosed and Established Patients With Fibromyalgia. *The Journal of Pain*, *10*(9), 976–983. https://doi.org/10.1016/j.jpain.2009.03.012.

Wolf, L. D., Davis, M. C., Yeung, E. W., & Tennen, H. A. (2015). The within-day relation between lonely episodes and subsequent clinical pain in individuals with fibromyalgia: Mediating role of pain cognitions. *Journal of Psychosomatic Research*, *79*(3), 202–206. https://doi.org/10.1016/j.jpsychores.2014.12.018.

Wolfe, F., Clauw, D. J., Fitzcharles, M.-A., Goldenberg, D. L., Häuser, W., Katz, R. L., Mease, P. J., Russell, A. S., Russell, I. J. & Walitt, B. (2016). 2016 Revisions to the 2010/2011 fibromyalgia diagnostic criteria. *Seminars in Arthritis and Rheumatism*, *46*(3), 319–329. https://doi.org/10.1016/j.semarthrit.2016.08.012.

Wolfe, F., Clauw, D. J., Fitzcharles, M.-A., Goldenberg, D. L., Häuser, W., Katz, R. S., Mease, P., Russell, A. S., Russell, I. J., & Winfield, J. B. (2011). Fibromyalgia Criteria and Severity Scales for Clinical and Epidemiological Studies: A Modification of the ACR Preliminary Diagnostic Criteria for Fibromyalgia. *The Journal of Rheumatology*, *38*(6), 1113–1122. https://doi.org/10.3899/jrheum.100594.

Wolfe, F., Walitt, B.T. & Häuser, W. (2014), What Is Fibromyalgia, How Is It Diagnosed, and What Does It Really Mean? *Arthritis Care & Research, 66*, 969-971. https://doi.org/10.1002/acr.22207.

Wolfe, F., Smythe, H. A., Yunus, M. B., Bennett, R. M., Bombardier, C., Goldenberg, D. L., Tugwell, P., Campbell, S. M., Abeles, M., Clark, P., Fam, A. G., Farber, S. J., Fiechtner, J. J., Michael Franklin, C., Gatter, R. A., Hamaty, D., Lessard, J., Lichtbroun, A. S., Masi, A. T., … Sheon, R. P. (1990). The American College of Rheumatology 1990 Criteria For The Classification of Fibromyalgia. *Arthritis & Rheumatism*, *33*(2), 160–172. https://doi.org/10.1002/art.1780330203.

Wolfe, F., Walitt, B., Perrot, S., Rasker, J. J., & Häuser, W. (2018). Fibromyalgia diagnosis and biased assessment: Sex, prevalence and bias. *PLOS ONE*, *13*(9), e0203755. https://doi.org/10.1371/journal.pone.0203755.

Wren, A. A., Somers, T. J., Wright, M. A., Goetz, M. C., Leary, M. R., Fras, A. M., Huh, B. K., Rogers, L. L., & Keefe, F. J. (2012). Self-Compassion in Patients With Persistent Musculoskeletal Pain: Relationship of Self-Compassion to Adjustment to Persistent Pain. *Journal of Pain and Symptom Management*, *43*(4), 759–770. https://doi.org/10.1016/j.jpainsymman.2011.04.014.

Zautra, A. J., Fasman, R., Reich, J. W., Harakas, P., Johnson, L. M., Olmsted, M. E., & Davis, M. C. (2005). Fibromyalgia: Evidence for Deficits in Positive Affect Regulation. *Psychosomatic Medicine*, *67*(1), 147–155. https://doi.org/10.1097/01.psy.0000146328.52009.23.

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*, *67*(6), 361–370. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x.