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**Building bridges between early memories of warmth and safeness
and psychological well-being**

Carolina Micaela Pereira da Silva

(e-mail: carolina.pereira.silva93@gmail.com)

Dissertação de Mestrado em Psicologia Clínica e de Saúde (Especialização em Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e de Saúde) sob orientação da Professora Doutora Cláudia Ferreira

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Paper II: Ferreira, C., & Silva, C. (2016). *How does warmth, safeness and connectedness-related memories and experiences explain disordered eating?* Manuscript submitted for publication in Eating and Weight Disorders

Paper I

Silva, C., & Ferreira, C. (2016). *How shame and fear of receiving compassion fuel the link between early affiliative memories and women's social safeness?*

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How shame and fear of receiving compassion fuel the link between early affiliative memories and women's social safeness?

Authors

Carolina Silva*

Cláudia Ferreira, M. S., Ph.D¹

Affiliation

¹University of Coimbra, Portugal

* Correspondence concerning this article should be addressed to:

Carolina Silva

CINEIC, Faculdade de Psicologia e Ciências da Educação

Universidade de Coimbra

Rua do Colégio Novo, Apartado 6153

3001-802 Coimbra, Portugal

Email: carolina.pereira.silva93@gmail.com

Telephone: (+351)239851450

Fax: (+351)203851462

How shame and fear of receiving compassion fuel the link between early affiliative memories and women's social safeness?

Abstract

This study explored the mediator role of external shame and fear of compassion from others in the link between early positive memories and current feelings of social safeness, in a sample of 400 women. Path analysis revealed that the ability to evoke early positive experiences is associated to a lower tendency to feel fear of receiving help and compassion from others and decreased feelings of inferiority, which seem to promote feelings of social safeness. These findings highlight the importance of addressing shame and fear of compassion, particularly when working with women who perceive the social world as unsafe and threatening.

Key words

Early affiliative memories, external shame, fear of compassion, social safeness, women

Introduction

Literature has consistently demonstrated that early affiliative experiences play an important role on cognitive, emotional and social development (Gerhardt, 2004; Gilbert and Perris, 2000). Specifically, early experiences of soothing, warmth, safeness and connectedness seem to be linked to positive outcomes (such as self-esteem and happiness) and to several health and well-being indicators later in life (Cheng and Furnham, 2004; DeHart et al., 2006; Mikulincer and Shaver, 2004). In this line, several studies suggested that early positive emotional and relational experiences promote feelings of safeness and soothing, due to the activation of the attachment system (e.g. Cacioppo et al., 2000; Porges, 2003, 2007). In contrast, early relationships characterized by abuse, rejection,

bullying, neglect, criticism or shame are power elicitors of stress responses (Eisenberger, 2011) and may trigger the adoption of maladaptive defensive behaviours (e.g Cunha et al., 2012; Gilbert, 2003). In fact, these adverse rearing experiences have been associated with maladjustment in adulthood and have been pointed out as factor risks for several psychopathological conditions (Gilbert and Perris, 2000; Irons et al., 2006; Rohner, 2004). Besides the importance of early experiences with parents and family figures, it is widely accepted that peer-related positive experiences constitute an essential foundation for a sense of belonging and emotional well-being (Allen and Land, 1999; Deater-Deckard, 2001; Rubin et al., 1998). In fact, there is evidence on the association between peer-related experiences, both negative or positive, and subsequent psychological and cognitive development, and later social adjustment (Criss et al., 2002; Gazelle and Ladd, 2003; Parker, 1983).

Several authors have suggested that these early affiliative experiences can be recorded as conditioned emotional memories, which seem to play a central role on the construction of self-identity, on emotional regulation and on the development of the relational schema (Baldwin and Dandeneau, 2005; Gilbert, 1998, 2002; Mendes et al., 2016; Mikulincer and Shaver, 2005; Pinto-Gouveia and Matos, 2011). Particularly, literature showed that the recall of early experiences of threat, abuse, or neglect may guide emotional and cognitive processing and activate defensive responses, such as shame (Cunha et al., 2012; Dunlop et al., 2001; Matos and Pinto-Gouveia, 2010).

In light of the biopsychosocial model, shame is a universal emotion rooted in the need for attachment to others. This painful experience emerges in the social context when individuals believe that others see or evaluate them as inferior, defective, inadequate or unattractive because of one's own characteristics, attitudes or behaviours (e.g., Gilbert, 2002). According to Gilbert (2000, 2002), shame can be conceptualized as a defensive

response to social threats. In fact, shame acts as a warning sign, showing that certain personal features or behaviours are evaluated by others as unattractive and may put the self at risk of being criticized or rejected (Gilbert, 2000; Tangney and Dearing, 2002). Nevertheless, intense feelings of this painful emotion are strongly related to social difficulties (e.g., alienation or isolation) and several psychopathological conditions (Gilbert, 2000, 2002). Furthermore, the pathogenic qualities of shame seem to be linked to the subsequent engagement in defense strategies (Gilbert, 2002; Gilbert et al., 2011b). In accordance, individuals may try to attenuate social negative consequences (such as social rejection) by striving or working hard in order to appear desirable to others, or in contrast, being submissive, not trusting and keeping distance from others (Gilbert and Procter, 2006).

Even though compassionate relationships may function as an antidote to shame and social threats, some individuals show fear of experiencing affiliative emotions and tend to perceive compassionate behaviours as unpleasant and threatening (Gilbert, 2010; Mikulincer and Shaver, 2007). In particular, individuals from insecure and harsh environments, tend to see others as unavailable and are more susceptible to develop fear of receiving signs of warmth and soothing from others (Gilbert et al., 2011a; Meyer, Olivier and Roth, 2005). According to Gilbert (2010), in those individuals compassionate and affiliative interactions may activate early memories, which link to social experiences with adverse outcomes. Moreover, recent studies suggested that fear of compassion from others is associated to alexithymia, depression, anxiety, self-criticism and difficulties on being self-reassuring (Gilbert et al., 2010; Gilbert et al., 2011a).

In contrast, literature has suggested that individuals who tend to perceive others as sources of soothing, and security are more likely to be open to accept compassion from

others and feel helped by them (Gilbert et al., 2011b), as well as to feel safe in the social world (Gilbert, 2010).

The experience of social safeness has its roots on affiliative experiences with parents, peers and strangers (Depue and Morrone-Strupinsky, 2005). Some evidences have shown that experiences of social safeness are not only related to the absence of threat, but rather with the presence of affiliative signals (e.g., care, affection, reassurance), which seem to promote adaptive emotional states (Baldwin and Dandeneau, 2005; Gilbert et al., 2006; Richter et al., 2009). Moreover, social safeness seems to be positively linked with feelings of relaxation, calmness and contentment, which allow individuals to be protected against behaviours and strategies focused on threat and competition for resources (e.g., Depue and Morrone-Strupinsky, 2005). On the other hand, there is also evidence showing that social safeness is inversely related with negative outcomes, such as self-criticism, shame, anxiety and depression (e.g., Gilbert, 2010; Kelly et al., 2012).

The present study aimed to clarify the impact of recalling early affiliative experiences of warmth and safeness, with family figures and with peers, on the perception of social safeness, and whether external shame and fear of compassion from others act on this association. We expect that the impact of early positive memories with family figures and peers on feelings of safeness in social interactions, is mediated through lower levels of external shame and lower levels of fear of receiving compassion and help from others.

Method

Participants

The sample included 400 women from the general population, aged between 18 and 55 years old, with a mean age of 30.55 ($SD = 11, 02$). Concerning to education, the majority of the participants (76.5%) attended college, while 20% reported only having completed

high school. In regards to marital status, 251 (62.7%) reported to be single, 128 (32%) married or living together, 16 (4%) divorced or separated, and 5 (1.3%) widowed. The majority of respondents lived in an urban area (59.8%) and (40.3 %) in a rural one.

Measures

Early Memories of Warmth and Safeness Scale (EMWSS; Richter et al., 2009; Matos et al., 2012) EMWSS is a self-report questionnaire that evaluates the recall of feelings of warmth, safeness and being cared for in childhood. This scale contains 21 items (e.g., “I felt part of those around me”; “I could easily be soothed by people close to me when I was unhappy”) rated on a 5 point Likert scale (0 = *No, Never* to 4 = *Yes, Most of the time*). Participants are asked to select the option that better describes their positive emotions, feelings and experiences in childhood. In the original and in the current versions of the study, EMWSS presented good psychometric proprieties, with Cronbach’s alphas of .97 and .96, respectively.

Early Memories of Warmth and Safeness Scale – Peers version (EMWSS_peers; Ferreira et al., 2016) is a 12 item self-report questionnaire adapted from the EMWSS (Richter et al., 2009), which aims to specifically assess the recall of early relationships of warmth, safeness and affection with peers (friends and colleagues) during childhood and adolescence. The respondents are asked to state the frequency of these positive emotional memories (e.g., “I felt safe and secure with my peers/friends” or “I felt loved by my peers/friends”), using a 5-point Likert scale (ranging from 0 = “No, Never” to 4 = “Yes, Most of the time”). EMWSS_peers revealed good psychometric properties, presenting Cronbach’s alphas of .97 and .98 in the original and current studies, respectively.

Other As Shamer Scale (OAS; Goss et al., 1994; Matos et al., 2011) is designed to assess external shame (that is, the perception of being negatively seen by others). This scale comprises 18 items (e.g., “Other people see me as small and insignificant”) scored on a 5 point scale (from 0 = “Never” to 4 = “Almost always”), which refers to the frequency of the participants’ perceptions of negative social evaluations. OAS has demonstrated good psychometric characteristics, presenting a Cronbach’s alpha of .92 in the original study and .91 in the Portuguese validation study. In the current study this measure presented an excellent internal consistency, with an alpha of .94.

Fear of Compassion Scale (FCS; Gilbert et al., 2011b; Matos and Pinto Gouveia, 2011) This self-report (FCS) comprises three scales which measure fears of compassion: (1) Fears of feeling or expressing compassion for others, (2) Fears of receiving compassion from others, and (3) Fears of compassion for the self. In the present study, it was only used Fears of receiving compassion from others subscale (FCS_fromOthers), a 13-items scale that evaluates the fear of receiving feelings of warmth, kindness and soothing from others (e.g., “I try to keep my distance from others even if I know they are kind”). Respondents rated on a Likert type scale how much they agree with each statement (0 = “Don’t agree at all” to 4 = “Completely agree”). Higher scores in this scale correspond to greater fear of receiving compassion from others. Previous studies reported that Cronbach’s alphas for the three scales are good, ranging from .78 to .85 (Gilbert et al., 2011b). In the present study, FCS_fromOthers also presented high level of internal consistency ($\alpha = .93$).

Social Safeness and Pleasure Scale (SSPS; Gilbert et al., 2009; Pinto-Gouveia et al., 2008) was developed to evaluate the extent in which people experience feelings of

safeness, belonging, acceptance and a sense of connectedness in their social world. Participants rate their agreement with 11 statements (e.g., “I feel accepted by people”, “I feel connected to others”) using a 5 point- scale from 1 (“almost never”) to 5 (“almost all the time”). Previous research has found that SSPS demonstrates adequate internal consistency, presenting a Cronbach’s alpha of .91 in the original version and .95 in the present study.

Procedure

The present study is part of a wider research which aims to clarify the impact of emotional experiences and emotional regulation processes in the psychological functioning and well-being of women.

Participants were recruited through online messages via Facebook or e-mail where the goals of the present study were described. Interested individuals were directed to a website where they completed a short screening questionnaire and a set of self-report measures (which took approximately 15-20 minutes to be completed). Before completing the measures, the participants were informed about the voluntary and confidential character of their participation and gave their informed consent.

Analysis

In order to analyse the characteristics of the sample, descriptive statistics were explored (means and standard deviations). Product-moment Pearson correlation analyses were performed in order to examine the relationships between the different study variables. The magnitudes of relationships were discussed taking into account Cohen’s guidelines, therefore correlations ranging between .1 and .3 were considered of a weak magnitude, above .3 moderate, and equal or superior to .5 to be strong (Cohen et al., 2003).

Path analysis (MacKinnon, 2008), a structural equation modelling (SEM), was performed to estimate the relations between study variables in the theoretical model (Figure 1). This statistical methodology enables the simultaneous examination of structural relationships as well as direct and indirect effects among multiple variables (endogenous and exogenous), and also controls for errors (Byrne, 2010; Kline, 2005). The path analysis model proposed in this study intended to examine whether early memories of warmth and safeness with attachment figures (EMWSS) and with peers (EMWSS_peers) would predict higher levels of warmth, acceptance and connectedness with the social world (SSPS), and whether these relationships are mediated by the indirect effects of external shame (OAS) and fears of receiving compassion from others (FCS_fromOthers). Thus, early experiences of warmth and safeness with attachment figures and with peers were considered as exogenous variables; external shame (OAS) and fear of others' compassion (FCS_fromOthers) were hypothesized as endogenous mediator variables, and the social safeness and pleasure scale (SSPS) as an endogenous variable.

The Maximum Likelihood method was used for the estimation of the regression coefficients and fit statistics. Additionally, a set of goodness-of-fit indices were used to examine the adequacy of the model to the empirical data (Chi-Square (χ^2), Comparative Fit Index (CFI), Tucker Lewis Index (TLI) and the Root-Mean Square Error of Approximation (RMSEA) with 95% confidence interval.

To test mediation effects, the bootstrap procedure (with 5000 samples) was used to create 95% bias-corrected confidence intervals around the standardized estimates of total, direct and indirect effects. The effect is considered statistically significant ($p < .05$) if on the interval between the lower and the upper bound of the 95% bias-corrected confidence interval, is not included the value of zero (Kline, 2005).

Data analyses were performed using the software IBM SPSS Statistics 22.0 (SPSS IBM; Chicago, IL) and the path analysis was performed with the AMOS software (Arbuckle, 2006).

Results

Preliminary data analysis

The analysis of Skewness and Kurtosis values seemed to confirm the assumption of the normality of the distribution of the variables in study (Kline, 2005). The suitability of the data was indicated by preliminary analyses, pointing out the linearity, independence of errors, normality, homocedasticity, as well as the singularity and absence of multicollinearity among the variables (Field, 2004).

Descriptive statistics and correlation

The means (M), standard deviations (SD) and intercorrelation scores for the study variables are presented for the total sample ($N = 400$) in Table 1.

Results showed that early memories of warmth and safeness with family figures (EMWSS) and early memories of warmth and safeness with peers (EMWSS_peers) presented both significant and negative associations with external shame (OAS) and fear of compassion (FCS_fromOthers). On the other hand, these positive memories measures presented positive and strong association with each other and with social safeness (SSPS).

Regarding external shame and fears from other's compassion, these variables showed positive strong associations between each other and demonstrated negative and strong correlations with social safeness.

Table 1 goes here

Path Analysis

The main goal of the path analysis was to test whether external shame and fear of compassion from others mediate the effect of the recall of early memories of warmth and safeness (with family figures and with peers) on social safeness within the social world, while controlling for the effect of age.

Initially, the model was tested through a fully saturated model (i.e.; zero degrees of freedom), comprising 27 parameters. Results demonstrated that one path was not significant: the direct effect of fear of compassion from others on social safeness ($b_{\text{FCS_others}} = -.055$; $SE_b = .035$; $Z = -1.544$; $p = .122$). This non-significant path was removed and the model recalculated.

The final model (Figure 1) showed an excellent model fit with a non-significant chi-square [$\chi^2_{(2)} = 3.997$; $p = .136$], which is also supported by a series of well-known and recommended goodness-of-fit indices (CMIN/DF = 1.999; CFI = .997; TLI = .980; RMSEA = .050, IC = .000 - .122; $p = .394$; Kline, 2005). All path coefficients were statistically significant ($p < .05$) and in the expected directions. The model explained 52% of social safeness and accounted for 20% of external shame and 14% of fear of compassion from others.

Early memories of warmth and safeness with family figures predicted external shame, fear of compassion from others, and social safeness, with a direct effect of $-.24$ ($b_{\text{EMWSS}} = -.169$; $SE_b = .039$; $Z = -4.358$; $p < .001$), of $-.27$ ($b_{\text{EMWSS}} = -.169$; $SE_b = .036$; $Z = -4.670$; $p < .001$) and of $.37$ ($b_{\text{EMWSS}} = .186$; $SE_b = .022$; $Z = 8.477$; $p < .001$), respectively. Simultaneously, early memories of warmth and safeness with peers had a direct effect of $-.24$ on external shame ($b_{\text{EMWSS_peers}} = -.3000$; $SE_b = .069$; $Z = -4.328$; $p < .001$), $-.13$ on fear of compassion from others ($b_{\text{EMWSS_peers}} = -.146$; $SE_b = .065$; $Z = -2.249$; $p = .024$) and $.13$ on social safeness ($b_{\text{EMWSS_peers}} = .118$; $SE_b = .040$; $Z = 2.995$; $p < .003$). In turn, external

shame presented a direct effect on social safeness of $-.40$ ($b_{OAS} = -.291$; $SE_b = .028$; $Z = -10.564$; $p < .001$).

The analysis of indirect effects showed that both early memories of warmth and safeness with family figures and with peers presented indirect effects on social safeness, respectively of $.10$ (95% CI = $.05 - .16$) and $.10$ (95% CI = $.04 - .16$), through the mechanisms of external shame.

Overall, the model accounted for 52 % of social safeness and revealed that the impact of the recall of early memories of warmth and safeness with family figures and with peers on social safeness were partially mediated by lower levels of external shame.

Figure 1 goes here

Discussion

Literature has pointed out that feelings of social safeness and connectedness with others have its roots on positive early experiences or interactions with significant figures (parents and peers) and also with strangers (e.g., Depue and Morrone-Strupinsky, 2005). However the link between the recall of early warmth and safeness memories and current experiences of safeness in social contexts is not clearly understood. The present study aimed, therefore, to clarify the role of some mechanisms involved in this association. In particular, this study presents an integrative model that explores the impact of the recall of early affiliative memories of warmth and safeness (with family figures and peers) on social safeness and, additionally, the mediator role of external shame and fear of compassion from others in aforementioned association.

Results corroborated previous research showing that early positive memories, either with family and peers, are inversely associated with emotional defensive responses such

as external shame (Cunha et al., 2012; Mendes et al., 2016) and fear of receiving compassion and help from others (Gilbert, 2010; Gilbert et al., 2011a). Moreover, findings indicated that these positive affiliative memories are associated with higher levels of social safeness, as measured by the Social Safeness and Pleasure Scale (SSPS). Also, findings demonstrated that perceptions of being negatively seen by others (e.g., as inferior, unattractive or inadequate) are strongly related to fears of receiving signals of affection, soothing and compassion from others (Gilbert, 2010; Gilbert et al., 2011a; Kelly et al., 2012).

Results from path analysis revealed that the model examined, to clarify the link between early positive memories and current feelings of safeness and connectedness in social world, was plausible and explained a total of 52% of social safeness' variance. It was also demonstrated that 20% of external shame and 14% of fears of receiving compassion were explained by early memories of warmth and safeness with family figures and with peers.

Furthermore, this results were in accordance with prior literature (Deater-Deckard, 2001; Gazelle and Ladd, 2003; Gilbert, 1998; Matos and Pinto-Gouveia, 2010) and allowed to confirm our hypothesis, by highlighting a significant and positive relationship of memories of warmth with social safeness. However, the current study extend the existent literature by revealing the mediator effect of external shame in the association between the ability to evoke early positive memories within family figures and peers and current feelings of safeness in the social context.

Although the direct effect of fears of compassion from others on social safeness did not emerge as significant, fears of receiving help and compassion from others appeared to be highly associated with external shame, and thus, its effect may be influence the impact of external shame on social safeness. In fact, according to the evolutionary model,

the perception that one holds certain personal features, attributes or behaviours that are judged by others as undesirable, devalued and unattractive may promote the perception that others compassionate behaviours and signals are not deserved and constitute another source of weakness, which may lead to social difficulties.

These findings cannot be interpreted without taking into account important limitations. Firstly, this was a cross-sectional survey, impairing therefore, conclusions regarding causality and the directionality of the tested associations. Future research should test the relationship between the study's variables in longitudinal or experimental designs. Secondly, the use of a sample exclusively composed of female participants represents an important limitation. In fact, this study is part of a wider research about the impact of different factors and emotion regulation processes on mental health and well-being in the female Portuguese population. However, this study's sample does not allow the generalization of the obtained results, and future research should test whether the mechanisms of shame and fear of compassion from others remain salient in the link between early positive memories and feelings of safeness in one's social world in different samples (e.g., male or clinical samples).

Also, the link between early emotional experiences and current feelings of connectedness with others is complex and the model examined in this study was intentionally limited. Thus, future studies should also investigate whether others variables influence this association. For instance, future research should focus on the role that adaptive processes (such as self-compassion or psychological flexibility) and other maladaptive mechanisms (e.g., social comparison and striving) play in the studied association. Finally another limitation lies on the use of self-report measures that may be susceptible to biases and may not be the most reliable method to assess affiliative memories, given that the current emotional state may influence emotional recalls.

However, Brewin et al., (1993) demonstrated that retrospective data recall is normally stable over time, regardless of depressive mood.

Nonetheless, the present study offers a significant contribution to the development of future research and interventions. The model we proposed suggests that the evocation of early positive memories, both with family figures and peers, is associated to higher ability to be open to accept compassion from others and feel helped by them and to lower feelings of inadequacy or inferiority, which seem to be important mechanism to explain feelings of safeness and connectedness in the social world. In contrast, the absence of warmth and safeness memories may trigger feelings of unattractiveness and inferiority and promote the perception that others are unavailable, unsafe or unreliable, which may the perception social world as unsafe. This study seems to open new avenues for research in the field of early affiliative memories. Also, the obtained results carry pertinent implications for the development of mental health community intervention programs, by revealing the importance of targeting shame and compassion-related fears in the promotion of feelings of safeness and connectedness with others.

References

- Allen JP and Land D (1999) Attachment in adolescence. In Cassidy J & Shaver PR (eds) *Handbook of attachment theory and research*. New York: Guilford.
- Arbuckle JL (2006) Amos (Version 7.0) [Computer Program]. Chicago: SPSS.
- Baldwin MW and Dandeneau SD (2005) Understanding and modifying the relational schemas underlying insecurity. In: Baldwin MW (ed) *Interpersonal cognition*. New York: Guilford Press, pp. 33-61.
- Brewin C, Andrews B and Gotlib I (1993) Psychopathology and early experience: A reappraisal of retrospective reports. *Psychological Bulletin* 113(1): 82-98. doi: 10.1037/0033-2909.113.1.82
- Byrne BM. (2010) *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York: Routledge, Taylor & Francis.
- Cacioppo JT, Berston GG, Sheridan JF, et al. (2000) Multilevel integrative analysis of human behavior: Social neuroscience and the complementing nature of social and biological approaches. *Psychological Bulletin* 126(6): 829-843. doi: 10.1037/0033-2909.126.6.829
- Cheng H and Furnham A (2004) Perceived parental rearing style, self-esteem and self criticism as predictors of happiness. *Journal of Happiness Studies* 5(1): 1-21.
- Cohen J, Cohen P, West S, et al. (2003) *Applied multiple regression/correlation analysis for the behavioural sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Criss, MM, Pettit GS, Bates JE, et al. (2002) Family Adversity, Positive Peer Relationships, and Children's Externalizing Behavior: A Longitudinal Perspective on Risk and Resilience. *Child Development* 73(4): 1220–1237. doi: 10.1111/1467-8624.00468

- Cunha M, Matos M, Faria D, et al. (2012) Shame memories and psychopathology in adolescence: the mediator effect of shame. *International Journal of Psychology and Psychological Therapy* 12(2): 203-218.
- Deater-Deckard K (2001) Annotation: Recent Research Examining the Role of Peer Relationships in the Development of Psychopathology. *Journal of Child Psychology and Psychiatry* 42: 565-579. doi:10.1017/S0021963001007272.
- DeHart T, Peham BW and Tennen H (2006) What lies beneath: Parenting style and implicit self-esteem. *Journal of Experimental Social Psychology* 42(1): 1-17. doi: 10.1016/j.jesp.2004.12.005
- Depue RA and Morrone-Strupinsky JV (2005) A neurobehavioral model of affiliative bonding: implications for conceptualizing a human trait of affiliation. *Behavioral Brain Science* 28(3): 313–350. doi: 10.1017/S0140525X05000063
- Dunlop R, Burns A and Bermingham S (2001) Parent-child relations and adolescent self image following divorce: A 10 year study. *Journal of Youth and Adolescence* 30(2): 117-134. doi: 10.1023/A:1010389923248
- Eisenberger NI (2011) Why rejection hurts: What social neuroscience has revealed about the brain's response to social rejection. In: Decety J and Cacioppo J (eds) *The Handbook of Social Neuroscience*. New York, NY: Oxford University Press, pp. 586-598.
- Ferreira C, Cunha M, Marta-Simões J, et al. (2016) *Development of a measure for the assessment of peer-related positive emotional memories*. Manuscript submitted for publication.
- Field A (2004) *Discovering statistics using SPSS* (3th ed.). London: Sage Publications

- Gazelle H and Ladd GW (2003) Anxious Solitude and Peer Exclusion: A Diathesis-Stress Model of Internalizing Trajectories in Childhood. *Child Development* 74(1): 257–278. doi: 10.1111/1467-8624.00534
- Gerhardt S (2004) *Why Love Matters. How Affection Shapes a Baby's Brain*. London: Bruner-Routledge.
- Gilbert P (1998) What is shame? Some core issues and controversies. In: Gilbert P and Andrews B (eds) *Shame: Interpersonal behavior, psychopathology and culture*. New York: Oxford University Press, pp. 3–38.
- Gilbert P (2000) The relationship of shame, social anxiety and depression. The role of the evaluation of social rank. *Clinical Psychology and Psychotherapy* 7(3): 174-189. doi: 10.1002/1099-0879(200007)7:3<174::AID-CPP236>3.0.CO;2-U
- Gilbert P (2002) Body shame: A biopsychosocial conceptualization and overview, with treatment implications. In: Gilbert P and Miles J (eds) *Body shame: Conceptualisation, research and treatment*. New York: Bruner-Routledge, pp. 3-54.
- Gilbert P (2003) Evolution, Social Roles and the Differences in Shame and Guilt. *Social Research*, 70(4): 1205-1230.
- Gilbert P (2010) *Compassion focused therapy: Distinctive features*. London: Routledge.
- Gilbert P, Baldwin WM, Irons C, et al. (2006) Self-Criticism and Self-Warmth: An Imagery Study Exploring Their Relation to Depression. *Journal of Cognitive Psychotherapy. An International Quarterly* 20(2): 183-200. doi: 10.1891/jcop.20.2.183
- Gilbert P, McEwan K, Gibbons L, et al., (2011a) Fears of compassion and happiness in relation to alexithymia, mindfulness, and self-criticism. *Psychology and*

Psychotherapy: Theory, Research and Practice 85: 374-390. doi: 10.1111/j.2044-8341.2011.02046.x

Gilbert P, McEwan K, Irons C, et al. (2010) Self-harm in a mixed clinical population: The roles of self-criticism, shame, and social rank. *British Journal of Clinical Psychology* 49(4): 563-576. doi:10.1348/014466509X479771

Gilbert P, McEwan K, Matos M, et al. (2011b) Fear of compassion: a study of psychological processes that block compassion. *Psychology and Psychotherapy: Theory, Research and Practice* 84: 239-255. doi: 10.1348/ 147608310X526511.

Gilbert P, McEwan K, Mitra R, et al. (2009) An exploration of different types of positive affect in students and in patients with bipolar disorders. *Clinical Neuropsychiatry* 6: 135-143.

Gilbert P and Perris C (2000) Early experiences and subsequent psychosocial adaptation. An introduction. *Clinical Psychology and Psychotherapy* 7(4): 243-245. doi: 10.1002/1099-0879(200010)7:4<243::AID-CPP254>3.0.CO;2-H

Gilbert P and Procter S (2006) Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology and Psychotherapy* 13(6): 353-379. doi: 10.1002/cpp.507

Goss K, Gilbert P and Allan S (1994) An exploration of shame measures: I: The 'other as shamer'scale. *Personality and Individual Differences* 17(5): 713-717. doi: 10.1016/0191-8869(94)90149-X

Irons C, Gilbert P, Baldwin MW, et al. (2006) Parental recall attachment relating and self-attacking/ self-reassurance: Their relationship with depression. *British Journal of Clinical Psychology* 45: 297-308. doi: 10.1348014466505X68230.

Kelly AC, Zuroff DC, Leybman MJ et al., (2012) Social Safeness, Received Social Support, and Maladjustment: Testing a Tripartite Model of Affect Regulation.

Cognitive Therapy and Research 36(6): 815-826. doi 10.1007/s10608-011-9432-

5

Kline R (2005) *Principles and Practice of Structural Equation Modeling*. New York:

Guilford.

MacKinnon DP (2008) *Introduction to Statistical Mediation Analysis*. Mahwah, NJ:

Erlbaum

Matos M and Pinto-Gouveia J (2010) Shame as a traumatic memory. *Clinical Psychology and Psychotherapy* 17(4): 299-312. doi: 10.1002/cpp.659

Matos M, Pinto-Gouveia J and Duarte C (2012) *The Portuguese version of the early memories of warmth and safeness scale*. Unpublished manuscript. University of Coimbra.

Mendes L, Marta-Simões J and Ferreira C (2016) How can the recall of early affiliative memories with peers influence on disordered eating behaviours? *Eat Weight Disord*. doi: 10.1007/s40519-016-0267-7

Meyer B, Olivier L and Roth DA (2005) Please don't leave me! BIS/BAS, attachment styles, and responses to a relationship threat. *Personality and Individual Differences* 38: 151–162. doi:10.1016/j.paid.2004.03.016

Mikulincer M and Shaver PR (2004) Security-based self-representations in adulthood: Contents and processes. In: Rholes NS and Simpson JA (eds) *Adult attachment: Theory, research, and clinical implications*. New York: Guilford, pp. 159-195.

Mikulincer M and Shaver PR (2005) Mental representation and attachment security. In: Baldwin MW (ed) *Interpersonal cognition*. New York: Guilford press, pp. 233-266.

Mikulincer M and Shaver PR (2007) *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford

- Parker G (1983) Parental affectionless control as an antecedent to adult depression. *Archives of General Psychiatry* 40: 956-960.
- Pinto-Gouveia J and Matos M (2011) Can shame memories become a key to identity? The centrality of shame memories predicts psychopathology. *Applied Cognitive Psychology* 25: 281-290. doi: 10.1002/acp1689.
- Pinto-Gouveia J, Matos M and Dinis A (2008) *Portuguese version of the Social Safeness and Pleasure Scale*. Unpublished manuscript. University of Coimbra.
- Porges S (2003) The polyvagal theory: phylogenetic contributions to social behavior. *Physiology & Behavior* 79(3): 503-513. doi:10.1016/S0031-9384(03)00156-2
- Porges S (2007) The polyvagal perspective. *Biological Psychology* 74(2): 116-143. doi:10.1016/j.biopsycho.2006.06.009.
- Richter A, Gilbert P and McEwan K (2009) Development of an early memories of warmth and safeness scale and its relationship to psychopathology. *Psychology and Psychotherapy Theory, Research and Practice* 82: 171-184. doi: 10.1348/147608308X395213
- Rohner RP (2004) The parental "acceptance-rejection syndrome": Universal correlates of perceived rejection. *American Psychologist* 59: 830-840. doi: 10.1037/0003-066X.59.8.830
- Rubin KH, Bukowski WM and Parker JG (1998) Peer interactions, relationships, and groups. In: Damon W and Eisenberg N (eds) *Handbook of child psychology, Vol. 3: Social, emotional, and personality development*. New York: Wiley, pp. 619-700.
- Tangney JP and Dearing RL (2002) *Shame and Guilt*. New York: Guilford Press.

Table 1.

Means (M), Standard Deviations (SD) and Intercorrelation scores on self-report measures

(N = 400)

Measures	M	SD	1	2	3	4
1. EMWSS	65,28	16,81	-	-	-	-
2. EMWSS_peers	35,82	9,34	0.59***	-	-	-
3. OAS	20,09	11,70	-0.37***	-0.38***	-	-
4. FCS_fromOthers	12,35	10,62	-0.33***	-0.28***	0.62***	-
5. SSPS	43.84	8,46	0.60***	0.50***	-0.59***	-0.45***

Note: EMWSS = Early Memories of Warmth and Safeness Scale; EMWSS_peers = Early Memories of Warmth and Safeness Scale - Peer version; OAS = Other As Shamer; FCS_fromOthers = Fear of receiving Compassion from others; SSPS = Social Safeness and Pleasure Scale. *** p< .001

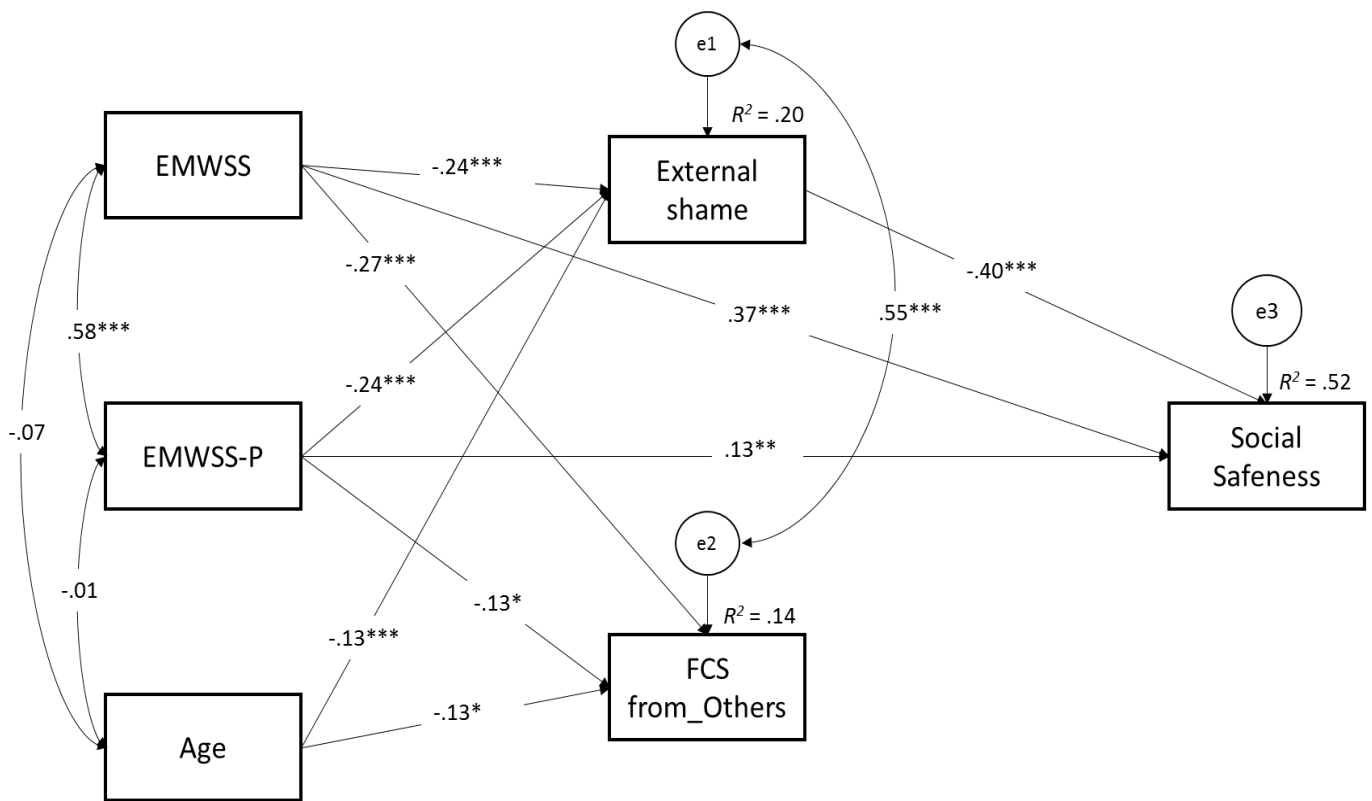


Figure 1. Final path model.

Note: Standardized path coefficients among variables are presented. All path coefficients are significant at the .05 level. * $p < .050$; ** $p < .010$; *** $p < .001$. ; EMWSS = Early Memories of Warmth and Safeness Scale; EMWSS_peers = Early Memories of Warmth and Safeness Scale_peers; FCSfrom_Others = Fear of receiving compassion from others subscale.

Paper II

Ferreira, C., & Silva, C. (2016). *How does warmth, safeness and connectedness-related memories and experiences explain disordered eating?* Manuscript submitted for publication in *Eating and Weight Disorders*

**How does warmth, safeness and connectedness-related memories and experiences
explain disordered eating?**

Authors

Cláudia Ferreira, M. S., Ph.D¹

Carolina Silva*

Affiliation

¹University of Coimbra, Portugal

* Correspondence concerning this article should be addressed to:

Carolina Silva

CINEIC, Faculdade de Psicologia e Ciências da Educação

Universidade de Coimbra

Rua do Colégio Novo, Apartado 6153

3001-802 Coimbra, Portugal

Email: carolina.pereira.silva93@gmail.com

Telephone: (+351)239851450

Fax: (+351)203851462

How does warmth, safeness and connectedness-related memories and experiences explain disordered eating?

Abstract

Literature suggested that the recall of early positive experiences have a major impact on the promotion of feelings of connectedness and social safeness, and seems to protect individuals against psychopathology. In contrast, several authors have demonstrated that the absence of these positive rearing memories play a key role on disordered eating-related behaviours. However, the impact of early affiliative memories on disordered eating does not seem to be direct, and the mechanisms underlying this relationship are scarcely investigated.

The present study aimed to test how memories of warmth and safeness explain the adoption of disordered eating attitudes. Additionally, the current study intended to clarify the mediator role of social safeness, external shame and appearance-focused social comparison on aforementioned relationship, in a sample of 277 women.

The tested model explained 36% of eating psychopathology's variance and presented an excellent fit. Path analysis results indicate that the impact of rearing memories on eating psychopathology was fully mediated through the mechanisms of social safeness, external shame and appearance-focused social comparison. Specifically, these findings suggested that the extent to which positive rearing memories are associated with lower levels of disordered eating attitudes is influenced by the current feelings of belonging and social safeness, which in turn are totally carried by decreased feelings of external shame and by lower endorsement on unfavourable comparison based on physical appearance with proximal targets (peers).

These results seem to offer important insights for research and clinical work on body image and eating-related difficulties, suggesting the relevance of promoting warm and safe interactions with others.

Key words

Early affiliative memories. Social safeness. Appearance-focused social comparison. External shame. Disordered eating;

Introduction

It is well established that the quality of care received in childhood impacts on genes expression, brain maturation, and on the development of a whole range of cognitive and emotional regulation competencies [e.g., 1-4]. Recent literature, based on neuroscience research, proposed three interacting affect regulation systems: threat-protection, resource-seeking and contentment-soothing system. Although these systems are interconnected, they are linked to specific neurohormones and play distinctive evolved functions [5-9]. Specifically, the threat system allows individuals to detect and respond to possible dangers or threats, triggering automatic emotional responses and protective behaviours (such as, submission, fight or freeze). Operating through specific brain structures (e.g., the amygdala), this protection system is linked to serotonin genetic and synaptic regulation, and can be activated by threat signals (e.g., social cues or emotional memories) [e.g., 7, 8, 10]. On contrast, the resource-seeking system operate through dopaminergic brain pathways and stimulates positive feelings of activation, pleasure and excitement [5, 6]. According to Gilbert [6-8] this system evolved to guarantee and motivate individuals to seek out and acquire resources that are necessary for survival (e.g., food, sexual opportunities, friendships and alliances). However, when individual efforts fail or

blocked, this system could activate negative and threat-related emotions (e.g., shame). On the other hand, the contentment-soothing system constitute an different positive emotion regulation system, which activation gives rise to feelings of content, peaceful and a positive sense of calm [5]. This system is linked to endorphins/opiates and oxytocin and developed in parallel with the evolution of the attachment system, being stimulated by signals of care and affection [7, 8]. In this line, early warmth, safeness and soothing experiences can activate this system and promote feelings of affiliation, trust, safeness and connectedness [11]. Moreover, these rearing positive experiences can be recorded as conditioned emotional memories, which seems to play a key role on the development of positive relational schema for the self and others, and enable feelings of connectedness and social safeness [2, 12-14].

Growing evidences showed that feelings of social safeness (that is a sense of belonging, being accepted, valued and loved) promote adaptive emotional states and resources to deal with the adversity, which seems to protect individuals against psychopathology [e.g., 1,6,8]. In fact, be accepted, chosen, and valued by others is an essential need to human survival [e.g., 15]. In accordance to evolutionary perspective, this fundamental need is linked to the process of social comparison [16]. Indeed, this process can be conceptualized as a defensive mechanism that allows individuals to estimate self-rank within their social group and to adapt his/her behaviours in accordance to what is social valued [12, 16, 17]. Moreover, in order to increase the probability of being accepted by others and to compete for a secure social rank position, individuals need to be aware about the qualities appreciated by the social group (e.g., forms of beauty) [18, 19]. Thus, through the social comparison with peers, individuals can perceive which domains are valued and by which one's should invest in, to raise his/her own status [12].

Clinical and empirical data show that unfavourable social comparisons play a key role on the development and maintenance of different psychopathological conditions, namely eating psychopathology [20, 21]. More specifically, it has been demonstrated that negative social comparisons based on physical appearance are strongly associated to body image dissatisfaction and can lead to higher tendency to seek thinness and engage in disordered eating [22]. Actually, for women body image is a central self-evaluative dimension. Therefore, unfavourable social comparison based on physical appearance are often associated with feelings of inferiority and inadequacy, which are part of the shame phenomenon [17].

The experience of shame emerge as a response to social threat, that occur when individuals believe that other's perceive him or her negatively (e.g., inferior, defective, inadequate or unattractive) because of one's own characteristics [e.g., 12]. This painful emotion have an important defensive function, warning individuals that certain features, behaviours or attributes are not able to create positive image in others, putting the self at risk of rejection or exclusion [12, 23]. Nevertheless, intense feelings of shame are strongly associated to social difficulties and several psychopathological conditions, namely eating disorders [e.g., 22, 24, 25]. In fact, it has been suggested that maladaptive eating behaviours (such as dieting) may act as strategies to cope with a sense of defective and inferiority [22].

Literature demonstrated that eating psychopathology is a complex process that involved different risk factors and mechanisms (such as, external shame and social comparison). Moreover, recent research suggested that early affiliative memories play a key role on disordered eating-related attitudes and behaviours. However, the mechanisms underlying this relationship are scarcely investigated. Thus, the present study intended to clarify the impact of the recall of early affiliative memories in the engagement in

disordered eating-related attitudes and behaviours, and whether social safeness, external shame and appearance-focused social comparison act on this association. In this line, it was hypothesized that the recall of early positive memories may be associated with lower levels of eating psychopathology, through higher levels of social safeness and lower levels of external shame and unfavourable social comparison based on physical appearance with peers.

Materials and Methods

Participants

The sample of this study comprised 277 women from general population, with ages ranging from 18 to 35 ($M = 23.94$; $SD = 4.11$). Concerning to marital status, 85.2% of the participants were single, 14.1% were married or living together and 0.7% were divorced or separated. The majority of the participants (75.5%) attended college, while 22% reported only having completed high school. Participant's Body Mass Index (BMI) ranged from 15.21 to 38.06, with a mean of 22.36 ($SD = 3.46$), corresponding to normal weight values (WHO, 1995) [26]. Furthermore, the sample's BMI distribution revealed to be equivalent to the female Portuguese population's BMI distribution [27].

Measures

Body Mass Index (BMI)

BMI was calculated from the Quetelet Index based on self-reported participants height and weight (Kg/m^2).

Early Memories of Warmth and Safeness Scale (EMWSS)

The EMWSS [14; Matos, Pinto-Gouveia, and Duarte, 2015] is a self-report questionnaire, designed to specifically assess early emotional memories of safeness, warmth, soothing

and positive affection. It consists of 21 items, such as “I could easily be soothed by people close to me when I was unhappy”. Respondents rated on a 5 point Likert scale, ranging from 0 (“No, never”) to 4 (“Yes, most of the time”), the frequency of their positive feelings, emotions and experiences in childhood. This measure revealed a good psychometric properties, with a high level of internal consistency ($\alpha = 0.97$), both for the original and the Portuguese versions. In the current study, this questionnaire presented a Cronbach’s alpha of 0.98.

Social Safeness and Pleasure Scale (SSPS)

SSPS [28; Pinto-Gouveia, Matos and Dinis, 2008] is a self-report instrument, with 11 items, that assesses current feelings of safeness, belonging, acceptance and a sense of connectedness in their social world (e.g., “I feel connected to others” or “I feel easily soothed by those around me”). Participants are asked to rate their agreement with the items on a five-point Likert-type scale, with higher scores indicating higher social safeness. This scale showed a good internal consistency in the original version ($\alpha = 0.91$) and, also, in the present study ($\alpha = 0.95$).

Other As Shamer Scale (OAS)

The OAS [29; Matos, Pinto-Gouveia, and Duarte, 2011] is a self-report scale that explore external shame, that is, the perception that others evaluate the self negatively (as inferior, unattractive or inadequate). The scale is composed of 18 items, such as “I think that other people look down on me”, rated in a 5 point Likert-type scale ranging from 0 (“Never”) to 4 (“Almost always”). Higher results in this scale indicate higher levels of external shame. OAS presented good psychometric characteristics, with a high internal

consistency, both in the original study ($\alpha = 0.92$) and in the Portuguese version ($\alpha = 0.91$). Concerning to the present study, the Cronbach's alpha was 0.95.

Social Comparison through Physical Appearance Scale (SCPAS)

SCPAS [17] was developed to assess social comparisons based on the subjective perception of individual's group fit, attractiveness and social ranking according to the way one compares oneself with others, using physical appearance as a reference. Participants are instructed to compare themselves physically to proximal targets (part A: Peers) and distal targets (part B: Models) regarding 11 bipolar constructs (e.g., Inferior/Superior, Left out/ Accepted or Devalued/Valued). Answers are given on a 10 point Likert scale, with higher scores characterizing more favourable social comparisons based on physical appearance. The SCPAS presented high internal reliability in its original study ($\alpha = 0.94$ in Part A: Peers, and $\alpha = 0.96$ in Part B: Models). In this study, only Part A: Peers was used, which revealed a Cronbach alpha of 0.95.

Eating Disorder Examination Questionnaire (EDE-Q)

The EDE-Q [30, 31] is a 36-item self-report questionnaire adapted from the Eating Disorder Examination Interview, to assess eating disorders attitudes and behaviours. It consists of four subscales, namely restraint, eating concern, shape concern and weight concern. The items are rated for frequency and severity of the disordered eating-related attitudes and behaviours, within a 28-day time frame. This scale presented good psychometric properties ($\alpha = 0.94$, for both the original and the Portuguese studies); regarding the current study, the Cronbach's alpha was 0.95.

Procedures

The present study is part of a wider ongoing research regarding the effect of distinct emotional regulation processes on body and eating-related difficulties. The ethical requirements were respected: the ethics committees of all institutions involved in the study provided their approval, participants were fully informed about the study aims, the voluntary nature of their participation and the confidentiality of the collected data.

Participants were recruited through online messages via Facebook or e-mail where the nature of the present study were described. Individuals who are interested to participate, were directed to a website where was given an informed consent before completing the self-report questionnaire, which took approximately 15- 20 minutes. Self-report measure were initially completed by 453 participants of both genders (407 women and 46 man), with ages ranging from 18 to 67 years old. However taking into account the purpose of the current study only 277 women, with ages ranging from 18 to 35 years old were selected. The data cleaning procedure excluded: a) male participants and b) participants who were younger than 18 or older than 35 years.

Data Analysis

Data analyses were performed using the software IBM SPSS Statistics 22.0 (SPSS IBM; Chicago, IL, USA), and Path analysis were conducted using the software AMOS [32].

The descriptive statistics were explored (e.g., means and standard deviations) to analyze the characteristics of the sample. Then, Pearson product-moment correlations were performed to explore the association between: early affiliative memories of warmth and safeness with family figure (EMWSS), social safeness (SSPS), external shame (OAS), *social comparison through physical appearance* with peers (SCPAS_peers) and disordered eating attitudes and behaviours (EDE-Q). In order to estimate the relations

between the different variables under analysis in the theoretical model, a path analysis was conducted. This statistical methodology enables the simultaneous examination of structural relationships and allow the examination of a direct and indirect effects among multiple variables [33]. Specifically in this study, we tested whether the association between early memories of warmth and safeness (exogenous variables) and disordered eating attitudes and behaviours (endogenous variable), would be mediated through the mechanisms of social safeness, external shame and appearance-focused social comparison (endogenous mediator variables), while controlling for BMI. The Maximum Likelihood method was used for the estimation of the regression coefficients and fit statistics. Moreover, set of goodness-of-fit indices were calculated to assess the plausibility of the overall model, such as, Chi-Square (χ^2), Comparative Fit Index (CFI), Tucker Lewis Index (TLI) and the Root-Mean Square Error of Approximation (RMSEA) with 95% confidence interval. Furthermore, the Bootstrap resampling procedure, with 5000 samples, and 95 % bias-corrected confidence intervals (CI) around the standardized estimates of total, direct and indirect effects was conducted to test the significance of the mediational paths. Effects with p values under 0.05 were considered statistically significant.

Results

Preliminary analysis

Univariate and multivariate normality was examined by the values of skewness (Sk) and kurtosis (Ku). The skewness ranged from .98 to 1.58, while the values of kurtosis ranged from .18 to 1.91. These values indicated that there was no severe violation of the normal distribution [33].

Descriptive and correlation analysis

The mean, standard deviations and Pearson product moment correlation coefficients of the studied variables, for the total sample (N = 277), are reported in Table 1

Results demonstrated that BMI presented negative associations, albeit weak, with early memories of warmth and safeness (EMWSS), social safeness (SPSS) and favourable appearance-based social comparison with peers (SCPAS_peers). In turn, BMI revealed positive associations with external shame (OAS) and eating psychopathology's severity (EDE-Q), with weak and moderate magnitudes, respectively.

Concerning the recall of early affiliative memories, positive correlations were found with social safeness and appearance-focused social comparison, with high and weak magnitudes, respectively. In contrast, early memories of warmth and safeness revealed negative associations with external shame and EDE-Q.

Social safeness presented negative associations with external shame and EDE-Q (with high and weak magnitudes, respectively) and a positive significant association with appearance-based social comparison with peers. Furthermore, external shame revealed to be negatively and moderately correlated with appearance-based social comparison with peers and positively associated with EDE-Q. Finally, as expected, a negative association was found between favourable appearance-focused social comparisons with peers and EDE-Q.

Path Analysis

The purpose of this path analysis was to test the impact of the recall of early memories warmth and safeness (EMWSS) on disorder eating (EDE-Q) through the mechanisms of

social safeness (SSPS), external shame (OAS) and appearance-focused social comparison with peers (SCPAS_peers), while controlling for BMI.

The path model was firstly tested through a fully saturated model (i.e., with zero degrees of freedom) consisting of 27 parameters. Analysis indicated the progressive removal of the following nonsignificant path: the direct effect of the recall of early affiliative memories on appearance-focused social comparison with peers ($b_{EMWSS} = 0.041$; $SE_b = 0.092$; $Z = 0.440$; $p = 0.660$), on EDE-Q ($b_{EMWSS} = -0.005$; $SE_b = 0.005$; $Z = -1.010$; $p = 0.312$); and on external shame ($b_{EMWSS} = -0.073$; $SE_b = 0.045$; $Z = -1.620$ $p = 0.105$); and, also, the direct effect of social safeness on EDE-Q ($b_{SSPS} = 0.018$; $SE_b = 0.009$; $Z = 1.905$; $p = 0.057$). According to these results, these paths were eliminated and the model was recalculated.

The model was recalculated and results indicated that all paths were statically significant, explained 41%, 38%, 19% and 36 % of social safeness, external shame, appearance-focused social comparison with peers, and EDE-Q variance, respectively (Fig.1). Additionally, this model showed an excellent model fit [$\chi^2_{(5)} = 7.822$; $p = 0.166$, CMIN/DF = 1.564; CFI= 0.994; TLI= 0.982; RMSEA= 0.045, IC= 0.000 - 0.103; $p = 0.480$] [33].

Specifically, early memories of warmth and safeness had a direct effect of 0.64 ($b_{EMWSS} = 0.332$; $SE_b = 0.024$; $Z = 13.836$; $p < 0.001$) on social safeness. In turn, social safeness presented direct effects on external shame ($\beta = -0.59$; $b_{SSPS} = -0.856$; $SE_b = 0.070$; $Z = -12.275$; $p < 0.001$) and on appearance-focused social comparison with peers ($\beta = .39$; $b_{SSPS} = 0.966$ $SE_b = 0.137$; $Z = 7.053$; $p < 0.001$). Furthermore, external shame showed a direct effect of 0.31 ($b_{OAS} = 0.033$; $SE_b = 0.006$; $Z = 5.704$; $p < 0.001$) on EDE-Q. Finally, appearance-focused social comparison with peers presented, also, a direct effect of - 0.17 on EDE-Q ($b_{SCPAS_peers} = - 0.011$; $SE_b = 0.003$; $Z = -3.102$; $p < 0.010$).

The analysis of indirect effect showed that early memories of warmth and safeness presented indirect effect on EDE-Q, of -0.16 (95% CI = -0.21 to -0.12) through social safeness, external shame and social comparison with peers. In turn the recall of early memories of warmth and safeness had indirect effects of -0.38 (95% CI = -0.47 to -0.28) on external shame and of 0.25 (95% CI = 0.17 to 0.34) on social comparison with peers, which were totally mediated through social safeness. Furthermore, social safeness presented an indirect effect of -0.25 (95% CI = -0.31 to -0.19) on EDE-Q, which was totally carried by the mechanisms of external shame and physical appearance-related social comparison with peers.

Overall, the model accounted for 36% of EDE-Q's variances, revealing that the recall of early memories of warmth and safeness had an indirect influence on eating psychopathological, through social safeness, which in turn was linked to social comparison based on physical appearance with peers and external shame, when controlling BMI.

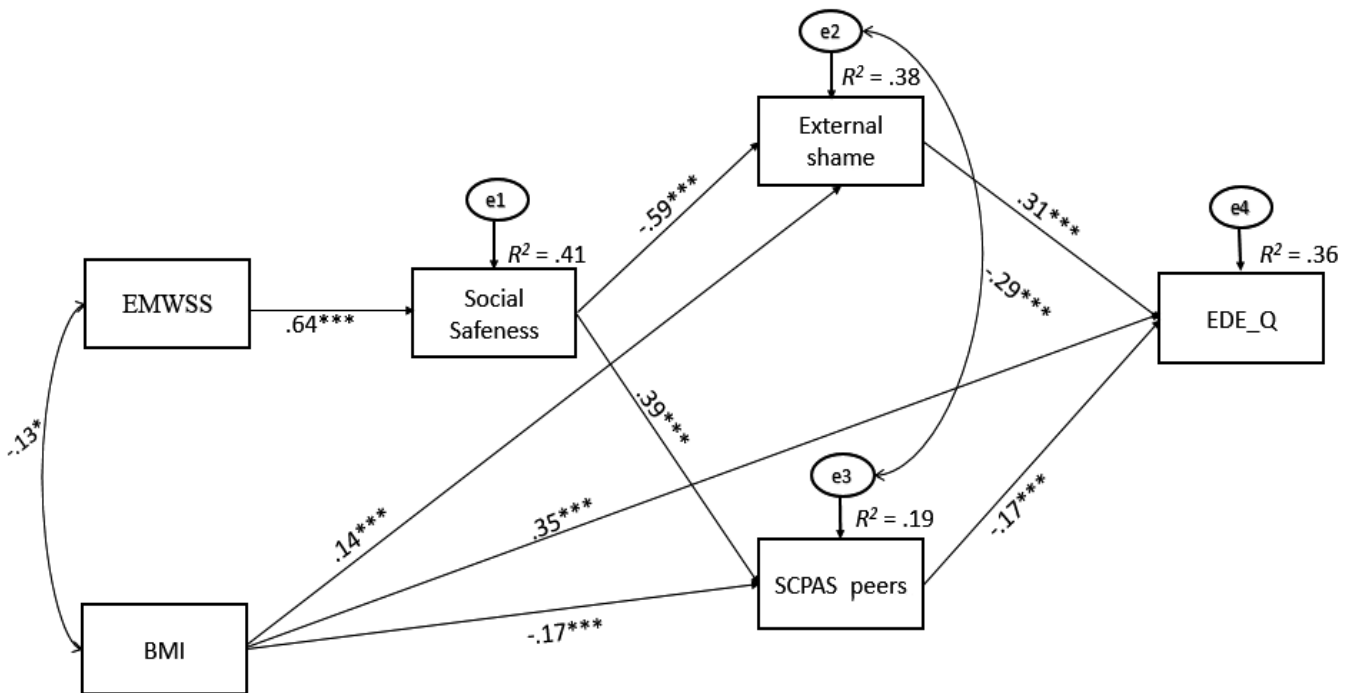
Table 1 Descriptive and Pearson's correlations between study variables (N = 277)

Measures	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. BMI	22.36	3.46	1				
2. EMWSS	66.30	16.06	-0.13*	1			
3. SSPS	44.11	8.34	-0.11	0.64***	1		
4. OAS	20.45	12.21	0.21***	-0.45***	-0.60***	1	
5. SCPAS_peers	66.79	20.96	-0.21***	0.29***	0.40***	-0.47***	1
6. EDE-Q	1.47	1.31	0.45***	-0.23***	-0.22***	0.46***	-0.39***

Note: *EMWSS* = Early Memories of Warmth and Safeness Scale; *SSPS*= Social Safeness and Pleasure Scale; *OAS* = Other As Shamer; *SCPAS_peers* = Social Comparison Through Physical Appearance Scale – Peers; *EDE_Q* = Eating Disorder Examination Questionnaire; * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$

Figure 1. Final path model

Standardized path coefficients among variables are presented. All path coefficients are significant at the 0.05 level; * $p < 0.050$; ** $p < 0.010$; *** $p < 0.001$. *EMWSS* = Early Memories of Warmth and Safeness Scale, *EDE_Q* = Eating Disorder Examination Questionnaire



Discussion

An emerging body of empirical research suggested that the recall of affiliative positive experiences can activate the soothing system and promote feelings of social safeness, which enhance the adoption of adaptive emotional states and protected individuals against stressful events [e.g., 2, 14]. In contrast, literature demonstrated that when individuals felt

unsafe or insecure in their rearing social context they may develop relational schemas of other's as untrusty or unavailable, which operate as a threat memories that are associated with defensive responses (such as shame) and psychopathological symptoms [12, 13].

Although recent research has shed light the key role of early memories on disordered eating-related attitudes and behaviours [e.g., 34] the mechanisms underlying this relationship are scarcely investigated. Therefore, this study built on previous research aimed to clarify how memories of warmth, safeness and connectedness explain disordered eating. More specifically, the current study presents a model that tested the mediator role of social safeness, external shame and appearance-focused social comparison on aforementioned relationship, in a sample of 277 women from the community.

Results demonstrated that the recall of early positive memories are associated to higher levels of social safeness, and with lower levels of external shame, unfavourable appearance-focused social comparisons with peers and disordered eating attitudes and behaviours. These results are in line with previous research that suggested that positive rearing memories are positively associated with the development and engagement in emotional and social adaptive responses [e.g., 14]. Findings also demonstrated that the capability of accessing warm and supportive other-to-self childhood' memories are inversely associated with emotional defensive responses (such as external shame) [35] and with eating psychopathological symptoms [36]. Moreover, results corroborate that external shame and unfavourable appearance-focused social comparisons are important correlates of disordered eating attitudes and behaviours [36, 37].

The present study aimed therefore at further exploring whether current feelings of social safeness, external shame and appearance-based social comparisons with peers mediate the impact of early positive memories on disordered eating severity. The tested model showed an excellent fit to the empirical data, explaining 36% of eating

psychopathology's variance. Additionally, path results clarified the significant mediator effects of aforementioned mechanisms. Indeed, results indicated that the absence of affiliative positive memories did not predict directly the engagement on disordered eating, but explain lower current feelings of social safeness. Moreover, results suggested that lower levels of feelings of belonging, acceptance and safeness are associated to higher levels of shame and more unfavourable appearance social comparisons with peers. In turn, shame and unfavourable social comparisons through physical appearance directly impact on disordered eating. Indeed, results showed that the link between the recall of rearing positive memories on disordered eating attitudes and behaviours is fully carried by the mechanisms of social safeness, external shame and appearance-focused social comparisons with friends and colleagues.

However, this results should be interpreted considering some methodological limitations. Firstly, the cross-sectional nature of this investigation does not allow the inference of causal relationships between the variables. Another possible limitation is the use of a sample only comprised of women from general population. Although disordered eating behaviours are more prevalent in women, this sample restrains the generalization of the results to others population (e.g., males). So, future research should replicate this research using a longitudinal design and more representative and heterogeneous samples, in order to confirm these study's findings. In addition, eating psychopathology is a multi-determined and complex process, therefore future studies should incorporate other constructs or emotional processes (e.g., submission, social sensitivities), which were not explored in this model, but that could increase its predictive capacity. Finally, other possible limitation is the use of self-report measures that may be susceptible to biases and consequently, compromise the generalization of the data.

Nonetheless, this study offers important insights for research on body image and eating-related difficulties. In fact, this is the first study that examines the associations between early memories, current feelings of safe and cared for, shame, appearance-focused social comparison and disordered eating. Specifically, the current study examined an integrative model that tested the relationship between early warmth and safeness memories and eating psychopathology, and also explores the mediator role of social-related mechanisms on this association. The findings highlight that the extent to which positive rearing memories are associated with lower levels of disordered eating attitudes is influenced by the current feelings of belonging and social safeness, which in turn are totally carried by decreased feelings of external shame and by lower endorsement on unfavourable comparison based on physical appearance with proximal targets (peers).

These results may have important implications for prevention and therapeutic interventions, suggesting that body image and eating-related difficulties intervention programs should targeting shame and promote the development of warm, supportive and safe interactions with others.

References

1. Cacioppo JT, Berston GG, Sheridan JF, McClintock MK (2000) Multilevel integrative analysis of human behavior: Social neuroscience and the complementing nature of social and biological approaches. *Psychological Bulletin* 126: 829-843. doi:10.1037/0033-2909.126.6.829
2. Mikulincer M, Shaver PR (2007) *Attachment in Adulthood: Structure, dynamics, and change*. Guilford, New York
3. Panksepp J (1998) *Affective Neuroscience*. Oxford University Press, New York
4. Schore AN (2001) The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal* 22: 201-269. doi: 10.1002/1097-0355(200101/04)22:13.0.CO;2-9
5. Depue R, Morrone-Strupinsky J (2005) A neurobehavioral model of affiliative bonding. *Behavioral and Brain Sciences* 28: 313-395. doi:10.1017/s0140525x05000063
6. Gilbert P (2005) Compassion and cruelty: a biopsychosocial approach. In: Gilbert P (ed) *Compassion: conceptualisation, research and use in psychotherapy*. Routledge, London, pp 9–74
7. Gilbert P (2009) *The Compassionate Mind: A New Approach to Life's Challenges*. Constable Robinson, London
8. Gilbert P (2010) *Compassion Focused Therapy: Distinctive Features*. Routledge, London
9. Wang S (2005) A conceptual framework for integrating research related to the physiology of compassion and the wisdom of Buddhist teachings. In: Gilbert P (ed) *Compassion: conceptualisations, research and use in psychotherapy*. Routledge, London, pp 75-120

10. Gilbert P (1989) *Human nature and suffering*. Hove: Lawrence Erlbaum Associates
11. Gilbert P, McEwan K, Mitra R, Franks L, Richter A, Rockliff H (2008) Feeling safe and content: A specific affect regulation system? Relationship to depression, anxiety, stress, and self-criticism. *The Journal of Positive Psychology* 3: 182–191
12. Gilbert P (2002) Body shame: a biopsychosocial conceptualization and overview, with treatment implications. In: Gilbert P, Miles J (eds) *Body shame: conceptualisation, research and treatment*. Routledge, London, pp 3-54
13. Pinto Gouveia J, Matos M (2011) Can shame memories become a key to identity? The centrality of shame memories predicts psychopathology. *Applied Cognitive Psychology* 25: 281-290. doi: 10.1002/acp1689
14. Richter A, Gilbert P, McEwan K (2009) Development of an early memories of warmth and safeness scale and its relationship to psychopathology. *Psychol Psychother* 82:171–184. doi:10.1348/ 147608308X395213
15. Baumeister RF, Leary MR (1995) The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychol Bull* 117(3):497–529. doi:10.1037/0033-2909.117.3.497
16. Gilbert P, Price J, Allan S (1995) Social comparison, social attractiveness and evolution: How might they be related? *New Ideas in Psychology* 13:149–165. doi:10.1016/0732-118X(95)00002-X
17. Ferreira C, Pinto Gouveia J, Duarte C (2013) Physical appearance as a measure of social ranking: The role of a new scale to understand the relationship between weight and dieting. *Clinical Psychology & Psychotherapy* 20: 55–66. doi:10.1002/cpp.769
18. Barkow J (1980) Prestige and self-esteem: A biosocial interpretation. In: Omark DR, Strayer FF, Freedman DG (eds) *Dominance relations: An ethological view of human conflict and social interaction*. Garland STPM Press, New York, pp 319–332

19. Gilbert P (1992) *Depression: The evolution of powerlessness*. Hove: Guilford/Lawrence Erlbaum Associates
20. Allan S, Gilbert P (1995) A social comparison scale: Psychometric properties and relationship to psychopathology. *Personality and Individual Differences* 19(3): 293–299. doi: 10.1016/0191-8869(95)00086-L
21. Troop NA, Allan S, Treasure JL, Katzman M (2003) Social comparison and submissive behaviour in eating disorders. *Psychology and Psychotherapy: Theory, Research and Practice* 76: 237–249. doi: 10.1348/147608303322362479
22. Pinto Gouveia J, Ferreira C, Duarte C (2014) Thinness in the pursuit for social safeness: An integrative model of social rank mentality to explain eating psychopathology. *Clinical Psychology & Psychotherapy* 21: 154–165
23. Tangney JP, Dearing RL (2002) *Shame and Guilt*. Guilford Press, New York
24. Gee A, Troop NN (2003) Shame, depressive symptoms and eating weight and shape concerns in a nonclinical sample. *Eat Weight Disord* 8(1):72–75. doi:10.1007/BF03324992
25. Kelly AC, Carter JC (2013) Why self-critical patients present with more severe eating disorder pathology: The mediating role of shame. *British Journal of Clinical Psychology* 52(2): 148-161
26. WHO (1995) *Physical status: the use and interpretation of anthropometry*. Reports of a WHO Expert Committee. WHO technical report series 854. World Health Organization, Geneva
27. Poínhos R, Franchini B, Afonso C, Correia F, Teixeira VH, Moreira P, Durão C, Pinho O, Silva D, Lima Reis JP, Veríssimo T, de Almeida MDV (2009) *Alimentação e estilos de vida da população Portuguesa: metodologia e resultados preliminares*

- [Alimentation and life styles of the Portuguese population: methodology and preliminary results]. *Alimentação Humana* 15(3):43–60
28. Gilbert P, McEwan K, Mitra R, Richter A, Franks L, Mills A, Bellew R, Gale C (2009) An exploration of different types of positive affect in students and in patients with bipolar disorders. *Clinical Neuropsychiatry* 6: 135-143
 29. Goss K, Gilbert P, Allan S (1994) An exploration of shame measures—I: the ‘other as shamer’ scale. *Personal Individ Differ* 17(5):713–717. doi:10.1016/0191-8869(94)90149-X
 30. Fairburn CG, Beglin SJ (1994) Assessment of eating disorders: interview of self-report questionnaire? *Int J Eat Disord* 16(4):363–370. doi:10.1002/1098-108X(199412)
 31. Machado PP, Martins C, Vaz AR, Conceição E, Bastos AP, Gonçalves S (2014) Eating Disorder Examination Questionnaire: psychometric properties and norms for the Portuguese population. *Euro Eat Disord Rev* 22(6):448–453. doi:10.1002/erv.2318
 32. Arbuckle JL (2006) Amos (version 7.0) (Computer Program). SPSS, Chicago
 33. Kline RB (2005) Principles and practice of structural equation modeling, 2nd edn. The Guilford Press, New York
 34. Mendes L, Marta-Simões J, Ferreira C (2016) How can the recall of early affiliative memories with peers influence on disordered eating behaviours? *Eat Weight Disord*. doi: 10.1007/s40519-016-0267-7
 35. Cunha M, Matos M, Faria D, Zagalo S (2012) Shame memories and psychopathology in adolescence: the mediator effect of shame. *International Journal of Psychology and Psychological Therapy* 12(2):203-218

36. Mendes AL, Ferreira C, Marta-Simões (2016) Experiential avoidance versus decentering abilities: the role of different emotional processes on disordered eating. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity* 1-8. doi: 10.1007/s40519-016-0291-7.
37. Ferreira C, Pinto Gouveia J, Duarte C (2013) Drive for thinness as a women's strategy to avoid inferiority. *International Journal of Psychology and Psychological Therapy* 13(1): 15- 29

Appendices

Appendix A

Submission information of Paper I

Instructions for authors of Journal of Health Psychology

Instruction for Authors



Article types

The Editorial Board of the **Journal of Health Psychology** considers for publication:

- (a) Reports of empirical studies likely to further our understanding of health psychology
- (b) Critical reviews of the literature
- (c) Theoretical contributions and commentaries
- (d) Intervention studies
- (e) Brief reports
- (e) Signed editorials (about 1000 words) on significant issues.

Intervention studies

Publication guidelines for intervention studies are published in volume 15, number 1, pages 5-7. The journal normally publishes papers reporting intervention studies of up to 8,000 words allowing 500 words per table and figure.

The Journal of Health Psychology welcomes research reports regardless of the direction or strength of the results. However the JHP will only consider reports of clinical trials that have been pre-registered at <http://www.clinicaltrials.gov/> or <http://www.controlled-trials.com/>

Please consult the Editorial concerning “Publication Guidelines for Intervention Studies in the Journal of Health Psychology” by David F. Marks J Health Psychol January 2010 vol. 15 no. 1 5-7: <http://hpq.sagepub.com/content/15/1/5.full.pdf+html> The criteria for publication include the application of the CONSORT, TREND and PRISMA statements.

Brief reports

The Journal also publishes Brief Reports of up to 3,000 words. Brief Reports should include an abstract of 100 words, and may include a table or figure in lieu of 500 words of the 3,000-word maximum.

Article length and house style

Articles should be as short as is consistent with clear presentation of subject matter. There is no absolute limit on length but 6,000 words, including footnotes and reference list, is a useful maximum. Longer articles will be considered at the discretion of the Editor. Tables and figures count as 500 words each which should be attached as separate pages at the end. “INSERT HERE” signs should be noted within the text. The title should indicate exactly, but as briefly as possible, the subject of the article. It is essential that your literature review is completely up to date. Please check recent issues of the **Journal of Health Psychology** and other key journals to ensure that any relevant papers are cited. Papers that fail to do this will be rejected. An Abstract should be at the start of the manuscript and not exceed **100 words**(in spite of what is stated on the ScholarOne website) accompanied by **five** keywords should be selected from the list provided on the JHP ScholarOne website. References are not numbered but appear in alphabetical order by first author surname.

To enable blind, impartial review, all documentation must be anonymized. A common error is to include the author’s name in the Word document title, as in:

Smith (blind copy).doc

Such manuscripts will be rejected for re-submission in fully blinded fashion.

6.1 SAGE Harvard

1. General

1. Initials should be used without spaces or full points.
2. Up to three authors may be listed. If more are provided, then list the first three authors and represent the rest by et al. Fewer authors followed by et al. is also acceptable.

2. Text citations

1. All references in the text and notes must be specified by the authors' last names and date of publication together with page numbers if given.
2. Do not use *ibid.*, *op. cit.*, *infra.*, *supra.* Instead, show the subsequent citation of the same source in the same way as the first.
3. Where et al. is used in textual citations, this should always be upright, not italic.

Note the following for the style of text citations:

1. If the author's name is in the text, follow with year in parentheses:

... Author Last Name (year) has argued ...

2. If author's name is not in the text, insert last name, comma and year:

... several works (Author Last Name, year) have described ...

3. Where appropriate, the page number follows the year, separated by a colon:

... it has been noted (Author Last Name, year: page nos) that ...

4. Where there are two authors, give both names, joined by 'and'; if three or more authors, use et al.:

... it has been stated (Author Last Name and Author Last Name, year) ...

... some investigators (Author Last Name et al., year) ...

5. If there is more than one reference to the same author and year, insert a, b, etc. in both the text and the list:

... it was described (Author Last Name, yeara, yearb) ...

6. Enclose within a single pair of parentheses a series of references, separated by semicolons:

... and it has been noted (Author Last Name and Author Last Name, year; Author Last Name and Author Last Name, year; Author Last Name, year) ...

Please order alphabetically by author names.

7. If two or more references by the same author are cited together, separate the dates with a comma:

... the author has stated this in several studies (Author Last Name, year, year, year, year) ...

Please start with the oldest publication.

8. Enclose within the parentheses any brief phrase associated with the reference:

... several investigators have claimed this (but see Author Last Name, year: page nos–page nos)

9. For an institutional authorship, supply the minimum citation from the beginning of the complete reference:

... a recent statement (Name of Institution, year: page nos) ...

... occupational data (Name of Bureau or Institution, year: page nos) reveal ...

10. For authorless articles or studies, use the name of the magazine, journal, newspaper or sponsoring organization, and not the title of the article:

... it was stated (*Name of Journal*, year) that ...

11. Citations from personal communications are not included in the reference list:

... has been hypothesized (Name of Person Cited, year, personal communication).

3. Reference list

1. Check that the list is in alphabetical order (treat Mc as Mac).
2. Names should be in upper and lower case.
3. Where several references have the same author(s), do not use ditto marks or em dashes; the name must be repeated each time.
4. Last Names containing de, van, von, De, Van, Von, de la, etc. should be listed under D and V respectively. List them as: De Roux DP and not Roux DP, de. When cited in the main text without the first name, use capitals for De, Van, Von, De la, etc. (Van Dijk, year)
5. Names containing Jr or II should be listed as follows:
 - Author Last Name Initial Jr (year)
 - Author Last Name Initial II (year)
6. References where the first-named author is the same should be listed as follows:
 - Single-author references in date order;
 - Two-author references in alphabetical order according to the second author's name;
 - Et al. references in alphabetical order; in the event of more than one entry having the same date, they should be placed in alphabetical order of second (or third) author, and a, b, etc. must be inserted.
Brown J (2003)
Brown TR and Yates P (2003)
Brown W (2002)
Brown W (2003a)
Brown W (2003b)
Brown W and Jones M (2003)
Brown W and Peters P (2003)
Brown W, Hughes J and Kent T (2003a)
Brown W, Kent T and Lewis S (2003b)
7. Check that all periodical data are included – volume, issue and page numbers, publisher, place of publication, etc.
8. Journal titles should not be abbreviated in SAGE Harvard journal references
9. Where et al. is used in reference lists, it should always be upright, not italic.

4. Reference styles

Book

Clark JM and Hockey L (1979) *Research for Nursing*. Leeds: Dobson Publishers.

Book chapter

Gumley V (1988) Skin cancers. In: Tschudin V and Brown EB (eds) *Nursing the Patient with Cancer*. London: Hall House, pp.26–52.

Journal article

Huth EJ, King K and Lock S (1988) Uniform requirements for manuscripts submitted to biomedical journals. *British Medical Journal* 296(4): 401–405.

Journal article published ahead of print

Huth EJ, King K and Lock S (1988) Uniform requirements for manuscripts submitted to biomedical journals. *British Medical Journal*. Epub ahead of print 12 June 2011. DOI: 10.1177/09544327167940.

Website

National Center for Professional Certification (2002) Factors affecting organizational climate and retention. Available at: www.cwla.org/programmes/triechmann/2002fbwfiles (accessed 10 July 2010).

Thesis/dissertation

Clark JM (2001) *Referencing style for journals*. PhD Thesis, University of Leicester, UK.

Newspaper/magazine

Clark JM (2006) Referencing style for journals. *The Independent*, 21 May, 10.

Conference article (published or unpublished)

Clark JM and Smith P (2002) Latest research on car exhaust manifolds. In: *17th international conference on strain analysis* (ed L Macadam), London, UK, 23–25 September 2010, pp.12–14. London: Professional Engineering Publishing.

Blog

Clark JM (2006) Article title. In: Blog title. Available at: www.blogit.com/johnmatthewclark (accessed 20 August 2011).

Report

1. MacDonald S (2008) The state of social welfare in the UK. Report, University of Durham, UK, June.
2. Citigroup Ltd. (2011) *How to make your money work for you*. Report for the Department of Finance. Report no. 123345, 13 June. Oxford: OUP.

Package insert (medical etc.)

1. Eisai Inc. (2008) Aloxi (package insert). New York: Eisai Inc.

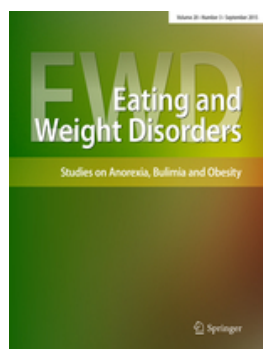
Standard

1. ISO 27799:2008 (2008) Information security management in health.

Appendix B

Submission information of Paper II

Instructions for authors of *Eating and Weight Disorders*



Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity

Editor-in-Chief: Massimo **Cuzzolaro**

Co-Editor: Lorenzo Maria **Donini**

ISSN: 1590-1262 (electronic version)

Journal no. 40519



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[INSTRUCTIONS FOR AUTHORS](#)

Instructions for Authors

TYPES OF PAPERS

⌘ Review Articles

Overview papers on selected topics. Review articles are in general invited by the editors but suggestions by interested individuals may also be considered.

Prospective authors should submit a formal and detailed proposal to the Editor, indicating the title and a brief outline of the content.

Manuscripts should provide an up-to-date and authoritative review and synthesis of existing literature. Review Articles should not exceed 7.500 words including an abstract of no more than 250 words, references, tables and figures. Keywords are requested.

⌘ Original Articles

Accounts of research or clinical practice that should be based on original rather than confirmatory data. Typically, Original Articles will present new data derived from a sizable series of subjects or patients. Original Articles should not exceed 5.000 words including an abstract of no more than 250 words, references, tables and figures. Keywords are requested.

⌘ Brief Reports

Short papers including data from preliminary studies, new approaches to clinical practice, replication studies that are primarily based on negative or confirmatory data. Brief Reports should not exceed 2.000 words, 1-2 illustrations and up to 3 references are permitted. Brief Reports should not have an abstract nor keywords.

⌘ Case Reports

Short papers that illustrate either a previously unrecognized disorder or a new aspect of a known condition. Ethical and legal considerations require the protection of a patient's anonymity. Case Reports should not exceed 2.000 words including 3

references, 1-2 tables and figures. Case Reports should not have an abstract nor keywords.

✉ Correspondence

Brief letters (maximum of 500 words including references; no tables or figures, no abstract, no keywords) providing pertinent comments on published articles will be considered and the authors concerned will be given a right to reply. Letters raising problems of general interest will also be considered.

✉ Letter to the Editor

Letters to the editors are published in the Correspondence section. They must not exceed 1000 words, 3 references and 3 authors. They should not have an abstract. They should be addressed to the Editor-in-Chief. Submitted letters will be subject to shortening and editorial revision.

✉ Editorial

The journal publishes also Editorials. Authors who wish to submit an editorial should first consult the journal's Editor-in-Chief.

✉ Clinical Symposia from invited contributors are published occasionally.

MANUSCRIPT SUBMISSION

Manuscript Submission

Submission of a manuscript implies: that the work described has not been published before; that it is not under consideration for publication anywhere else; that its publication has been approved by all co-authors, if any, as well as by the responsible authorities – tacitly or explicitly – at the institute where the work has been carried out. The publisher will not be held legally responsible should there be any claims for compensation.

Permissions

Authors wishing to include figures, tables, or text passages that have already been published elsewhere are required to obtain permission from the copyright owner(s) for both the print and online format and to include evidence that such permission has been granted when submitting their papers. Any material received without such evidence will be assumed to originate from the authors.

Online Submission

Please follow the hyperlink "Submit online" on the right and upload all of your manuscript files following the instructions given on the screen.

LANGUAGE

Manuscripts that are accepted for publication will be checked by our copyeditors for spelling and formal style. This may not be sufficient if English is not your native language and substantial editing would be required. In that case, you may want to ask a native speaker to help you or arrange for your manuscript to be checked by a professional language editor prior to submission. A clear and concise language will help editors and reviewers concentrate on the scientific content of your paper and thus smooth the peer review process.

The following editing service provides language editing for scientific articles in medicine, biomedical and life sciences, chemistry, physics, engineering, business/economics, and humanities

Edanz Editing Global

Please contact the editing service directly to make arrangements for editing and payment.

Use of an editing service is neither a requirement nor a guarantee of acceptance for

publication.

TITLE PAGE

Title Page

The title page should include:

- The name(s) of the author(s)
- A concise and informative title
- The affiliation(s) and address(es) of the author(s)
- The e-mail address, telephone and fax numbers of the corresponding author

Abstract

Please provide a structured abstract of 150 to 250 words which should be divided into the following sections:

- Purpose (stating the main purposes and research question)
- Methods
- Results
- Conclusions

Keywords

Please provide 4 to 6 keywords which can be used for indexing purposes.

TEXT

Text Formatting

Manuscripts should be submitted in Word.

- ⌘ Use a normal, plain font (e.g., 10-point Times Roman) for text.
- ⌘ Use italics for emphasis.
- ⌘ Use the automatic page numbering function to number the pages.
- ⌘ Do not use field functions.
- ⌘ Use tab stops or other commands for indents, not the space bar.
- ⌘ Use the table function, not spreadsheets, to make tables.
- ⌘ Use the equation editor or MathType for equations.
- ⌘ Save your file in docx format (Word 2007 or higher) or doc format (older Word versions).

Manuscripts with mathematical content can also be submitted in LaTeX.

LaTeX macro package (zip, 182 kB)

Headings

Please use no more than three levels of displayed headings.

Abbreviations

Abbreviations should be defined at first mention and used consistently thereafter.

Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by

superscript lower-case letters (or asterisks for significance values and other statistical data).

Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

Acknowledgments

Acknowledgments of people, grants, funds, etc. should be placed in a separate section on the title page. The names of funding organizations should be written in full.

REFERENCES

Citation

Reference citations in the text should be identified by numbers in square brackets. Some examples:

1. Negotiation research spans many disciplines [3].
2. This result was later contradicted by Becker and Seligman [5].
3. This effect has been widely studied [1-3, 7].

Reference list

The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications and unpublished works should only be mentioned in the text. Do not use footnotes or endnotes as a substitute for a reference list.

The entries in the list should be numbered consecutively.

⌘ Journal article

Gamelin FX, Baquet G, Berthoin S, Thevenet D, Nourry C, Nottin S, Bosquet L (2009) Effect of high intensity intermittent training on heart rate variability in prepubescent children. *Eur J Appl Physiol* 105:731-738. doi: 10.1007/s00421-008-0955-8

Ideally, the names of all authors should be provided, but the usage of “et al” in long author lists will also be accepted:

Smith J, Jones M Jr, Houghton L et al (1999) Future of health insurance. *N Engl J Med* 965:325–329

⌘ Article by DOI

Slifka MK, Whitton JL (2000) Clinical implications of dysregulated cytokine production. *J Mol Med*. doi:10.1007/s001090000086

⌘ Book

South J, Blass B (2001) *The future of modern genomics*. Blackwell, London

⌘ Book chapter

Brown B, Aaron M (2001) The politics of nature. In: Smith J (ed) *The rise of modern genomics*, 3rd edn. Wiley, New York, pp 230-257

⌘ Online document

Cartwright J (2007) Big stars have weather too. IOP Publishing PhysicsWeb. <http://physicsweb.org/articles/news/11/6/16/1>. Accessed 26 June 2007

⌘ Dissertation

Trent JW (1975) *Experimental acute renal failure*. Dissertation, University of California

Always use the standard abbreviation of a journal’s name according to the ISSN List of Title Word Abbreviations, see

ISSN.org LTWA

If you are unsure, please use the full journal title.

For authors using EndNote, Springer provides an output style that supports the formatting of in-text citations and reference list.

EndNote style (zip, 2 kB)

Authors preparing their manuscript in LaTeX can use the bibtex file spbasic.bst which is included in Springer's LaTeX macro package.

TABLES

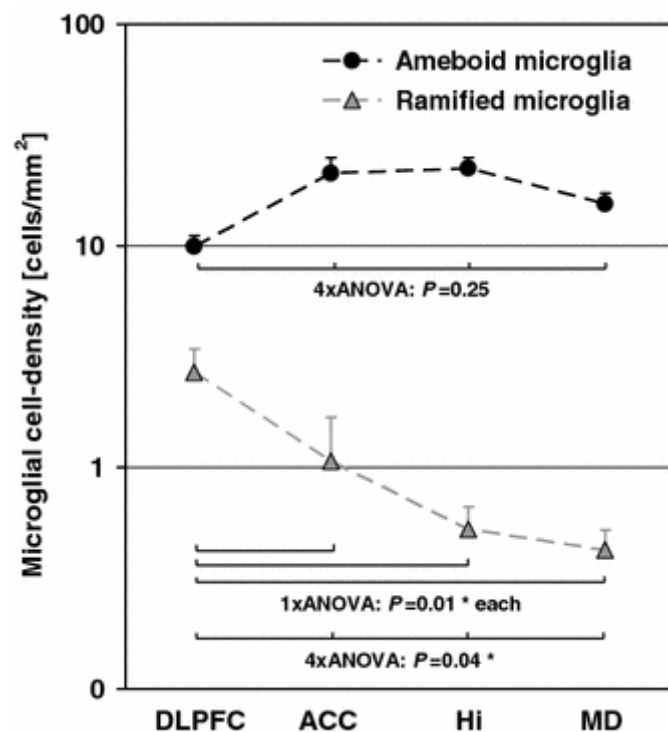
- ⌘ All tables are to be numbered using Arabic numerals.
- ⌘ Tables should always be cited in text in consecutive numerical order.
- ⌘ For each table, please supply a table caption (title) explaining the components of the table.
- ⌘ Identify any previously published material by giving the original source in the form of a reference at the end of the table caption.
- ⌘ Footnotes to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data) and included beneath the table body.

ARTWORK AND ILLUSTRATIONS GUIDELINES

Electronic Figure Submission

- ⌘ Supply all figures electronically.
- ⌘ Indicate what graphics program was used to create the artwork.
- ⌘ For vector graphics, the preferred format is EPS; for halftones, please use TIFF format. MSOffice files are also acceptable.
- ⌘ Vector graphics containing fonts must have the fonts embedded in the files.
- ⌘ Name your figure files with "Fig" and the figure number, e.g., Fig1.eps.

Line Art



- ⌘ Definition: Black and white graphic with no shading.

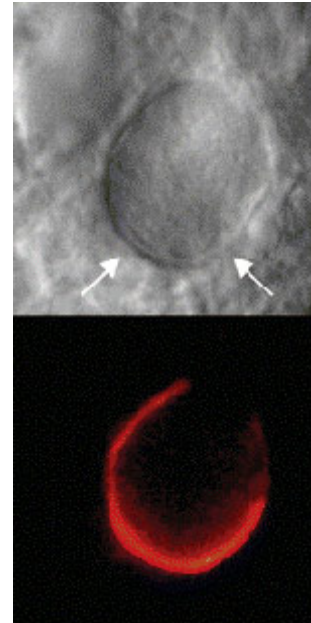
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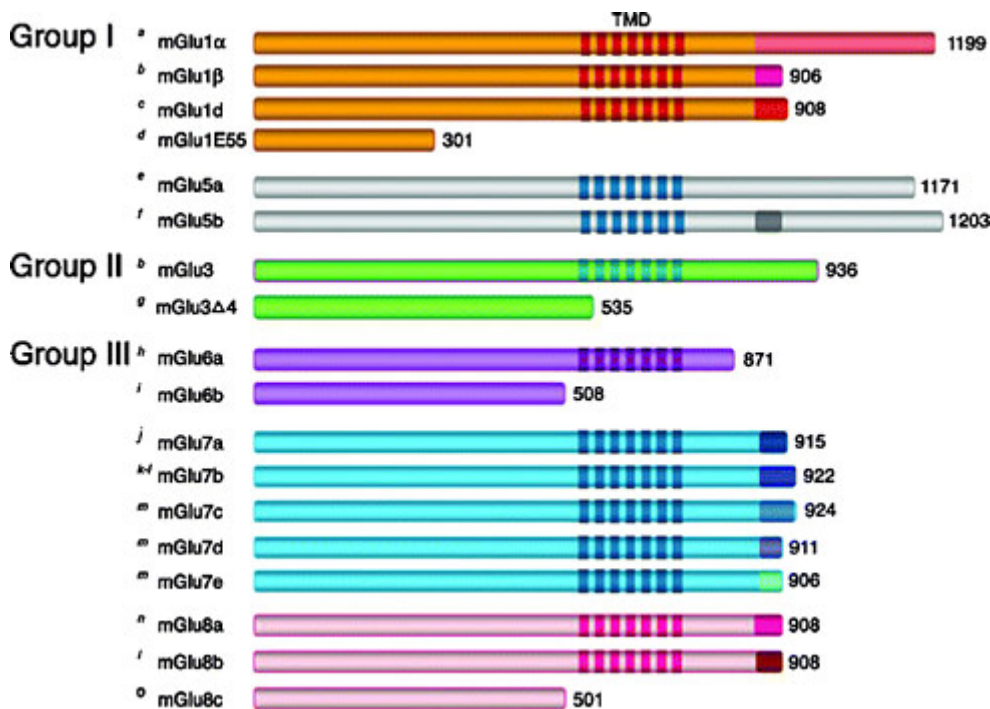
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