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Social Rank and Schizophrenia: The evolutionary roots of paranoid delusions and co-morbid depression

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Social Rank and Schizophrenia: The evolutionary roots of paranoid delusions and co-morbid depression

Abstract

Schizophrenia is one of the most complex and severe psychiatric disorders, with an onset that usually occurs in late adolescence or early adulthood, and it is often responsible for severe decrements on individual's functioning. While the bizarre nature of its phenomenology has lead to the labeling of this disorder as something "abnormal", recent evolutionary approaches to psychopathology have shed light on the adaptive value of some of its aspects. In the present work, paranoid delusions and depression are seen in light of their relationship with several social rank variables, such as shame and submission. In the first study, it was tested whether the first episode of schizophrenia might have constituted a shame traumatic memory. Additionally, it was hypothesized that this shame experience might activate previous memories of shaming and negative beliefs about the self and others, which would in turn lead to the emergence and maintenance of paranoid attributions. In the second study, we aimed to explore the relationships

between self-compassion, submissive behavior, external entrapment and depression. Moreover, we tested the hypothesis that lack of self-compassion could hinder the utilization of more appropriate responses by the individual, thus leaving him trapped in a vicious cycle of subordinate behaviors which have a downward impact on mood.

The present work uses a clinical sample of 30 individuals with a diagnosis of paranoid schizophrenia. Self-report measures were administered in order to assess both studies' variables.

While both studies encompass a number of limitations, their findings seem to add to previous research and present important implications for the clinical practice. Effectively, both studies seem to support the use of compassion-focused interventions in individuals with schizophrenia, namely to address external shame, submissive behaviors and feelings of entrapment, which have been shown to have a role in the emergence and maintenance of paranoid delusions and depression in individuals with schizophrenia.

Key Words: First episode of schizophrenia; shame traumatic memories; external shame; paranoia; submissive behaviors; external entrapment; depression; self-compassion; mediation analysis.

Social Rank **e Esquizofrenia: as raízes evolucionárias dos delírios paranoides e da depressão co mórbida**

Resumo

A esquizofrenia é uma das perturbações psiquiátricas mais complexas e severas, iniciando-se normalmente durante o final da adolescência ou no início da idade adulta, e é muitas vezes responsável por decréscimos severos no funcionamento do individuo. Embora a natureza bizarra da sua

fenomenologia tenha levado a que esta perturbação tenha sido rotulada de "anormal", perspetivas evolucionárias recentes sobre a psicopatologia têm esclarecido o valor adaptativo de alguns dos seus aspetos. No presente trabalho, os delírios paranoides e a depressão são perspetivados à luz da sua relação com diversas variáveis de *ranking* social, como a vergonha e a submissão. No primeiro estudo, testou-se se o primeiro episódio de esquizofrenia poderia ter constituído uma memória traumática de vergonha. Adicionalmente, colocou-se a hipótese de que esta experiência poderia ativar memórias prévias de vergonha e crenças negativas acerca do eu e dos outros, que por sua vez levariam à emergência e manutenção de atribuições paranoides. No segundo estudo, procuramos explorar as relações entre auto-compaixão, comportamento submisso, *entrapment* externo e depressão. Além disso, testamos a hipótese de que a falta de auto-compaixão pode impedir a utilização de respostas mais apropriadas pelo individuo, deixando-o consequentemente preso num ciclo vicioso de comportamentos subordinados que têm um impacto negativo no humor.

O presente trabalho utiliza uma amostra clínica de 30 indivíduos com um diagnóstico de esquizofrenia paranoide. Medidas de autorresposta foram administradas de modo a avaliar as varáveis em estudo.

Embora ambos os estudos englobem um conjunto de limitações, os seus resultados parecem acrescentar algo aos estudos anteriores e apresentam implicações importantes para a prática clínica. Efectivamente, ambos os estudos parecem apoioar o uso de intervenções baseadas na compaixão em indivíduos com esquizofrenia, nomeadamente para lidar com vergonha externa, comportamentos submissos e sentimentos de *entrapment*, cujo papel na emergência e manutenção dos delírios paranoides e na depressão tem sido demonstrado em indivíduos com esquizofrenia.

Palavras-chave: primeiro episódio de esquizofrenia; memórias traumáticas de vergonha; vergonha externa; paranoia; comportamentos submissos; *entrapment* externo; depressão; auto-compaixão; análise de mediação.

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Study 1 - A Pathway to Schizophrenia: The role of shame traumatic memories and external shame on the maintenance of paranoid delusions

Abstract

Recent studies have highlighted that early shame traumatic memories can have an impact on latter paranoid ideation, both directly and indirectly through feelings of external shame in adulthood. It has also been suggested that these early shame rearing events might predispose individuals to develop negative schematic models of the self and the world that facilitate the emergence of psychotic symptoms, especially when a latter event recapitulates characteristics of the early events. The present study explores the assumption that the onset of schizophrenia might constitute a shame traumatic experience that activates previous memories of abuse and shaming and certain negative beliefs about the self and others, which lead to the emergence and maintenance of persecutory delusions.

Thirty participants diagnosed with paranoid schizophrenia completed self-report measures of shame traumatic memory, current feelings of external shame and paranoid ideation.

Results showed that shame traumatic memory of the first episode of schizophrenia was positively associated with current feelings of external shame and both frequency and distress of paranoid ideation. External shame was also positively associated with frequency, conviction and distress of paranoid ideations. Furthermore, current feelings of external shame appear to fully mediate the relationship between shame traumatic memory of the

first episode of schizophrenia and both the frequency and distress of paranoid ideation.

These results seem to suggest that shame is a central component of paranoid symptomatology, thus reinforcing the conceptualization of paranoia in light of the social rank theory. Limitations and clinical implications are discussed.

Keywords: first episode of schizophrenia; shame traumatic memories; external shame; paranoid delusions; mediation analysis.

Resumo

Estudos recentes demonstraram que memórias traumáticas precoces de vergonha podem ter um impacto posterior na ideação paranoide, tanto diretamente como indiretamente através de sentimentos de vergonha externa na idade adulta. Tem também sido sugerido que estes eventos precoces de vergonha podem predispor os indivíduos a desenvolver modelos esquemáticos negativos do eu e do mundo que facilitam a emergência de sintomas psicóticos, especialmente quando um evento posterior recapitula algumas caraterísticas dos eventos precoces. O presente estudo explora a suposição que o início da esquizofrenia possa ter constituído em si mesma uma experiência traumática de vergonha que ativa memórias anteriores de abuso e vergonha, assim como crenças negativas acerca do eu e dos outros, que levam à emergência e manutenção de delírios paranoides.

Trinta participantes com um diagnóstico de esquizofrenia paranoide completaram medidas de autorresposta de memórias traumáticas, vergonha externa atual e ideação paranoide.

Os resultados demonstraram que a memória traumática de vergonha do primeiro episódio de esquizofrenia estava positivamente associada com a vergonha externa atual e com a frequência e o transtorno associados à ideação paranoide. Para além disso, a vergonha externa atual parece mediar completamente a relação entre a memória traumática de vergonha do primeiro episódio de esquizofrenia e a frequência e o transtorno associados à ideação paranoide.

Estes resultados parecem sugerir que a vergonha é um componente central na sintomatologia paranoide, reforçando desta forma a conceptualização da paranoia à luz do modelo de *social ranking.* As limitações do estudo e respetivas implicações clínicas são alvo de discussão.

Palavras-chave: primeiro episódio de esquizofrenia; memórias traumáticas de vergonha; vergonha externa; delírios paranoides; análise de mediação.

I – Introduction

Schizophrenia is one of the most severe mental health disorders, carrying a lifetime risk of approximately 1% (Lavretsky, 2008). Its onset usually occurs between the ages of 15 and 30 years, however a later onset (e.g. after 40 years of age) is also possible (Castle & Morgan, 2008). It is characterized by clusters of positive symptoms (e.g. delusions, hallucinations), negative symptoms (e.g. apathy, flat affect, lack of motivation), and disorganized symptoms (e.g. formal though disorder and/or bizarre behaviors). Furthermore, individuals with schizophrenia often experience cognitive deficits (e.g. loss of executive function) and social

dysfunction (Rubin & Tawver, 2010). These symptoms are usually associated with persistent and marked dysfunctions in social and functional domains, which lead to chronic difficulties resulting in considerable social and economical impact in both the patient and his family (Lindenmayer & Khan, 2006).

Of all the symptoms, paranoid delusions are among the most common in schizophrenia, as well as in other disorders such as delusional disorder, psychotic depression, and organic delusional syndromes. Individuals with persecutory delusions believe they are being conspired or discriminated against, threatened, or intentionally victimized. The perpetuator of such actions can be someone familiar to them (e.g. family members, friends, or medical staff), a stranger (e.g. neighbor, television personality) or even a powerful external organization (e.g. CIA, FBI) or entity (e.g. the devil, extraterrestrial forces) (Lindenmayer & Khan, 2006). Other types of delusions might also possess persecutory content. Individuals with delusions of reference might believe that certain messages conveyed by the media are about them, and that they expose something about them they don't like or feel ashamed of. Individuals might also believe they are being controlled or manipulated by an outside force or agency, and that their thoughts, feelings or actions are not their own.

Social Rank Theory (Gilbert, 1992; Gilbert & Allan, 1998; Price, Sloman, Gardner, Gilbert, & Rhode, 1994) provides a general theory of how humans respond when facing others who are dominant and entrapping (Birchwood, Meaden, Trower & Gilbert, 2002). It states that group belonging is essential for the achievement of several evolutionary goals (e.g.

survival) and that these are mediated by the individual's positioning on the social hierarchy. Each individual competes with others to access higher social positioning and, consequently, to obtain more resources (e.g. sexual partners). This competition is mediated by the evolved mechanism of social comparison, which allows the individual to compare himself with others in terms of his strength, power, social attractiveness, perceived belonging to a social group and decide if he will compete or not with an opponent (Gilbert, Allan & Price, 1995). In these contexts, those who possess more strength/abilities are capable of threatening, attacking or intimidating those who are less able. Individual in subordinate positions defend themselves by escaping, running or submitting to others. These responses are performed due to the operation of evolved mental mechanisms that generate congruent patterns of cognition, affect and behaviors that enables the individual to deal with their social roles. These mechanisms are known as "social mentalities" and have evolved in order to aid the individual address several biosocial goals (e.g. seek support, give support, cooperation, mate selection, mating, and social rank competition) (Gilbert, 2000).

In relation to paranoia, Gilbert et al. (1995) have argued that subordinate animals could be marginalized and pushed to the periphery or even out of the group. If conflicts and losses in social ranking lead to a reduction in survival and reproductive fitness, it is plausible to assume that some social fears could be related to exclusion and rejection (Gilbert, 2002; MacDonald & Leary, 2005). Paranoid fears seem to emerge from intra-group conflicts where ritualized defensive behaviors, such as subordination and submissiveness, may not be enough to dampen aggressive behavior, which

could lead to injury or death of the subordinate. Paranoia can thus be conceptualized as a strategy for the detection of threats to the self from potential hostile and harmful others using a "better safe than sorry" rule (Gilbert et al., 2005; Matos, Pinto-Gouveia & Gilbert, 2013). While it may be adaptive in some contexts, a general proneness to experience paranoia seems to be linked to low, unstable or vulnerable self-esteem and attachment difficulties (Pickering, Simpson & Bentall, 2008). Effectively, a view of the self as inferior, vulnerable, weak, different or subordinate, and of others as dominant, powerful, devious and threatening, is a common aspect in individuals with paranoid symptoms (Garety, Kuipers, Fowler, Freeman & Bebbington, 2001; Gilbert et al., 2005; Morrison, 2001). Furthermore, paranoia seems to be associated with submissive behavior, negative social comparisons and perceptions of inferior social ranking (Freeman et al., 2005).

Shame is related with this perception of being seen negatively in the minds of others. It belongs to a family of "secondary" or "self-conscious" emotions (Tangney & Fisher, 1995), and is an involuntary response to an awareness that one has lost status and is devalued (Gilbert, 1998). Shame has evolved as a type of warning signal that is elicited when we sense that we are failing to elicit positive affect on others and instead are stimulating anger, anxiety or contempt, in other words when we "live in the minds of others" as someone with negative characteristics, or lacks positive ones, and thus more vulnerable to attacks, rejection or even exclusion that could increase the difficulty of establishing advantageous relationships (Gilbert, 1998, 2002; Matos, Pinto-Gouveia & Gilbert, 2013). Social threats that are

perceived by the individual will be processed by an evolved defense system, which in turn will influence attention, arousal, and select emotions and defensive behaviors, such as aggression, appeasing and displaying qualities, in order to reduce negative social consequences (Gilbert, 2002). Shame therefore plays a central role in motivating and regulating people's thoughts (e.g. self and other representations), feelings and behaviors (Tracy & Robins, 2004, 2007). Furthermore, shame can be conceptualized as external when we believe we exist negatively in the minds of others, or internal when one self-evaluates as someone who is bad, undesirable, weak, inadequate or disgusting (Gilbert, 1998, 2002).

While shame has evolved to serve defensive functions, it also seems to be related to a wide range of psychological symptoms and intrapersonal and interpersonal problems (Gilbert & Andrews, 1998; Harder, 1995; Pineles, Street & Koenen, 2006; Tangney, Burggraf & Wagner, 1995; Tangney, Wagner & Gramzow, 1992). More specifically, shame-proneness has been associated with diverse psychological symptoms and disorders (e.g. depression, social anxiety, post-traumatic stress disorder, borderline personality disorder) (Matos & Pinto-Gouveia, 2010). Shame-proneness emerges from internal negative self-representations and seems to have its origins in early negative rearing experiences and previous experiences of being shamed (Lewis, 1992; Nathanson, 1994). Various forms of childhood adversities, maltreatment and trauma, which can include physical, sexual and emotion abuse as well as physical and emotional neglect (Larkin & Read, 2008), are prevalent life events in individuals experiencing psychotic symptoms (Bebbington et al., 2004; Kinderman, Cooke & Bentall, 2000),

and have been associated to later onset of schizophrenia, especially sexual abuse (Bebbington et al., 2011; Read, Van Os, Morrison & Ross, 2005; Shevlin, Dorahy & Adamson, 2008).

Recent findings have demonstrated that such early shame experiences can lay down conditioned emotional memories recorded in autobiographical memory (AM) that become the basis for self-experience and negative self-evaluations (Matos, Pinto-Gouveia & Duarte, 2012). Furthermore, these memories can operate as traumatic memories, involving intrusiveness, hyperarousal and efforts to avoid shame, which can have an impact on feelings of shame in adulthood (Matos & Pinto-Gouveia, 2010). Since AM is also related with the construction of working models of self and others, essential to the development and maintenance of social bonds and intimate relationships, it can be argued that early shame experiences can increase the vulnerability to develop paranoia by leading to the formation of negative mental models of the self (e.g. as vulnerable, inferior, powerless) and others (e.g. as threatening, hostile, abusive) – "self-others schemas", involving social humiliation and subordination, which come to influence how we think and feel about others (e.g. paranoid thoughts, anxiety) and the way one develops and maintains relationships (Conway & Pleydell-Pearce, 2000; Conway, Singer & Tagini, 2004; Kihlstrom, 2009; Matos, Pinto-Gouveia & Gilbert, 2013; Pinto-Gouveia, Matos, Castilho & Xavier, 2012; Wilson & Ross, 2003). Additionally, shame memories can become central to one's identity or a reference point for everyday inferences and for generating expectations central to one's life story (Bernsten & Rubin, 2007; Pinto-Gouveia & Matos, 2011). When a shame memory comes to be integrated as

key to how one understands oneself and the world, it forms a highly accessible and interconnected reference point that, when triggered, can affect body memory and the "felt sense of self" (Brewin, 2006), guide attention, emotion and cognitive processing, as well as determining the activation of defensive behaviors (Gilbert, 2007; Matos & Pinto-Gouveia, 2010; Matos et al., 2011). Regarding paranoia, Matos, Pinto-Gouveia and Gilbert (2013) have suggested that when shame is linked to a central AM, it may lead to attentional and social processing bias towards interpersonal threat and malevolence. Vulnerability to paranoid anxiety increases due to the fact that shame memories have trauma-like characteristics, with intrusion, avoidance, and hyperarousal symptoms, which may create biases towards interpersonal threat. Effectively, it has been shown that early shame memories that become a central component to an individual's identity are associated with increased feelings of internal and external shame in adulthood (Matos & Pinto-Gouveia, 2010; Pinto-Gouveia & Matos, 2011). These individuals tend to believe they exist in the minds of others as undesirable, inferior of defective and to feel and judge themselves as inferior, bad or inadequate (Pinto-Gouveia & Matos, 2011). Moreover, Matos, Pinto-Gouveia and Gilbert (2013) have also found that as shame memory became more central and traumatic to the individual's identity and life story, the higher the association with paranoid anxiety. Additionally, external shame had a higher impact on paranoia, which follows the idea that paranoid anxiety is focused on the malevolent intentions of others towards the self (Gilbert et al., 2005). In another study, centrality of shame memories, in comparison with fear or sadness memories, was the only predictor of paranoia ideation frequency and

distress (Matos, Pinto-Gouveia & Duarte, 2012). Early shame memories seem to predict paranoid ideation both directly and indirectly through greater external shame. External shame partially mediates the effects of emotional memories, alongside submissive behaviors who fully mediated the effect of internal shame on paranoid ideation (Pinto-Gouveia et al., 2012). Furthermore, the impact of emotional memories on paranoid ideation seems to operate through their effect upon external shame and also through their indirect effect upon submission (Pinto-Gouveia et al., 2012).

While the above cited findings were obtained with non-clinical populations, they seem to be, nevertheless, of paramount importance to the understanding of the conditions that lead to the onset of paranoid schizophrenia. Garety et al (2001) suggests that early events might predispose individuals to develop negative schematic models of the self and the world that facilitate the emergence of psychotic symptoms, especially if some later event recapitulates aspects of the early events (Bebbington et al., 2004). Indeed, the experience of psychosis and its symptoms can be seen as a challenging or even traumatic experience in itself which requires adaptation by the individual and his family (Birchwood, 2003). The individual might appraise his psychotic experience as if it was a shattering life event, leading to loss of social goals, roles and status and generating feelings of hopelessness, fear, guilt and shame (Birchwood, 2003; Miller & Mason, 2005). Several accounts depict the traumatic impact of the psychotic episode, as well as other phenomena such as latter reexperiencing of the traumatic event, as well as widespread avoidance of internal and external stimuli related to the event and hyperarousal (Shaner & Eth, 1989). The

onset of psychosis, as well as other events such as compulsory hospitalization, loss of roles and goals and the stigma of schizophrenia, can lead to actual and/or perceived low social ranking, particularly to loss of social attractiveness and talent, of belonging to a social group, resulting in social marginalization and loss of sense of self which may leave individual feeling more vulnerable to other's harmful intentions (Birchwood et al., 2002; Rooke & Birchwood, 1998).

II – Aims

Following these findings, the present study aims to explore the nature of the first episode of schizophrenia and its relation with external shame in adulthood and paranoid delusions. We hypothesize that the onset of schizophrenia might constitute a traumatic shame event, which would activate early memories of abuse and shaming and certain assumptions about the self and the world that would promote in the individual a negative sense of self as existing negatively for others, thus associating the onset of the symptoms with feelings of shame in adulthood which could increase one's vulnerability to paranoid attributions that others are harsh and powerful and may want to harm the self.

As previously mentioned, most of the studies concerning the relationship between external shame and paranoia were conducted in non-clinical population. We thus seek to address this limitation by analyzing this relationship in a clinical sample of individuals with paranoid schizophrenia. Specifically, we investigate whether the traumatic impact of the first episode has a specific contribution to paranoid delusions or if this relationship is

mediated by external shame. We thus hypothesize that external shame might mediate the effects of the trauma shame memory of the onset of the paranoid symptoms (frequency of paranoid beliefs, conviction and distress).

III - Method

Participants

The sample for this study consisted of 30 participants (25 men and 5 women) who were outpatients or inpatients at the Psychiatric Services of the "Centro Hospitalar e Universitário de Coimbra". All of the participants carried a diagnosis of paranoid schizophrenia, which was given by experienced psychiatrists who worked in those services. Participants' mean age was 38 (SD =10.10), ranging from 18 to 58. The majority of the participants were single (70%, *n* = 21) and lived with their parents (63.3%, *n* = 19). In terms of academic education, participants tended to range between intermediate school (7 years of study) and university degrees (more than 12 years of study) (cumulative percentage of 86.7%, *n* = 27*)*, and were mostly employed (56.7%, *n* = 17). Most of the participants (36.7%, *n* = 11) asserted that they were never referred to inpatient care and all of them were taking anti-psychotic medication. No gender differences were verified concerning these variables.

Procedures

All procedures were approved by the clinical director of the psychiatric services before beginning the study. Participants were recruited with the help of a psychiatrist that was familiar with the clinical case. Each

participant was given a brief description of the nature of the study and of the protocol. Upon their agreement to participate, they would be asked to sign the consent form before completing the self-report questionnaires. Confidentiality and anonymity were assured. Participants were given a battery of self-report questionnaires, administered in the same order, which were filled in the presence of the researcher in a medical office of the psychiatric services. The completion of the battery took approximately 45 to 60 minutes. In some cases, participants requested assistance to read out the questions and answers. The researcher tried to answer such questions while at the same time trying to avoid influencing the participant's responses.

Measures

Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997; translation and adaptation to Portuguese by Matos, Pinto-Gouveia & Martins, 2011) was devised as a self-report measure to assess current subjective distress and traumatic symptomatology that follows a specific traumatic event. The IES-R has 22 items, rated on a five-point Likert scale (0-4), and is constituted by three subscales that measure three main characteristics of traumatic memories: avoidance (8 items), intrusion (8 items) and hyperarousal (6 items). Individuals with higher total scores endorse in more traumatic symptomatology when compared to individuals with lower scores. The Portuguese version of this measure entails some modifications in its instructions. In accordance with Matos and Pinto-Gouveia's (2010) study purposes, the instructions were modified in order to prime participants with a shame memory of a significant shame experience

that they could recall from their childhood or adolescence, and participants were specifically instructed to answer the measure based on the impact that these experiences had throughout their lives. After a brief introduction about the concept of shame it was instructed:

"Now, please try to recall a (significant) situation or experience in which you think you felt shame during your childhood and/or adolescence. Below is a list of comments made by people after stressful life events. Using the following scale, please indicate the degree of distress that each difficulty has caused you throughout your life. That is, concerning the shame experience you recalled, how much were you distressed by these difficulties?"

Matos and Pinto-Gouveia (2010) consider that this adjustment does not affect the validation of this measure.

In this study, the instructions were also modified in order to prime participants with a shame memory associated with their first episode of schizophrenia. In other words, participants were asked to consider if their first episode could have constitute a shameful experience to them, and were instructed to answer the questionnaire based on the impact, 6 months after the event, that this experience had. After the same brief introduction about the concept of shame it was instructed:

"In this study we are interested in understanding whether your crisis (the time when you became ill) may not have constituted to you an experience where you felt ashamed. Now, please try to recall that situation or significant event you went through that you think you've felt ashamed, since you became ill."

For the purpose of the present study, only the total score of the IES-R will be used, which in this study was calculated by the summing the scores of the 22 items that compose the measure. Total score can range from 0 to 88. In the original study, Cronbach α values of the subscales ranged from .87 to .92 for the intrusion subscale, .84 to .85 for the avoidance subscale and .79 to .90 for the hyperarousal subscale (Weiss & Marmar, 1997). The Portuguese version obtained a Cronbach α value of .96 for the total of the measure (Matos, Pinto-Gouveia & Martins, 2011). In the present study, the Cronbach α value for the total of the IES-R was .87.

Other As Shamer Scale (OAS; Allan, Gilbert, & Goss, 1994; Goss, Gilbert & Allan, 1994; translated and adapted to Portuguese by Matos, Pinto-Gouveia & Duarte, 2011) is a self-report measure composed of 18 items, rated on a five-point Likert scale (0-4), which assess external shame. Respondents are asked to indicate the frequency of feelings and thoughts associated with their beliefs about what they think others think about the self (Allan, Gilbert, & Goss, 1994). The total score of this scale ranges from 0 to 72, where higher scores reveal higher external shame. In the original study, Cronbach's α of the scale was .92 (Goss et al., 1994). The Portuguese version obtained a Cronbach α value of .91 (Matos, Pinto-Gouveia & Duarte, 2011). In this study, the Cronbach's α was .91.

Paranoia Checklist (PC; Freeman et al., 2005; translated and adapted to Portuguese by Lopes & Pinto-Gouveia, 2005) was devised to provide a multi-dimensional assessment of paranoid ideation. This checklist has 18

items, each rated on a five-point Liker scale (1-5), that represent thoughts and ideas of persecution and reference (e.g., *"I need to be on my guard against others"*, *"There is a possibility of a conspiracy against me"*). Respondents are asked to rate this thoughts according to their frequency, as well as the degree of conviction and distress they entail. In the original study, the Cronbach's α value for each of the three dimensions of the PC was .90 or more. The Portuguese version displayed similar levels of internal consistency, with Cronbach's α values above .90 for the three dimensions (Carvalho, 2009). In this study, the Cronbach's α was .90 for frequency; .83 for conviction; and .95 for distress.

Data Analyses

Data analyses were conducted using SPSS (Statistical Package for the Social Sciences), version 20 (IBM Corp, Armonk, NY, USA).

Descriptive statistics were conducted to explore the sample characteristics in regard to the study's variables. Gender differences were tested for using independent samples *t*-tests, and Spearman's rank correlation coefficients (Spearman's ρ) were performed to explore the relationship between the variables in study.

Mediator analyses were conducted using linear regression models to test if external shame (OAS) mediated the effect of shame traumatic memory of the first episode of schizophrenia (IES-R) on paranoid delusions (PC). The mediation analyses followed the four-step analysis procedure recommended by Baron and Kenny (1986). According to these authors, a variable functions as a mediator when it meets the following conditions: (1)

variations in levels of the independent variable significantly account for variations in the dependent variable, (2) variations in levels of the independent variable significantly account for variations in the mediator, (3) variations in both the independent variable and in the mediator significantly account for variations in the dependent variable. The final step seeks to demonstrate a significant reduction of the effect of the independent variable on the dependent variable (outcome). The indirect effects are thus defined as a reduction of the effect of the predictor variable on the result, when a mediator variable is included in the model. The significance of the indirect effects was analyzed with Sobel test. This analysis clarifies Baron and Kenny's (1986) mediation procedure since it directly tests whether or not the total effect of the independent variable on the dependent variable is significantly reduced upon the addition of a mediator to the model (Preacher & Hayes, 2004). The Sobel test's accuracy is dependent on the normality of the sampling distribution, and it was designed to assess the indirect effect of the predictor variable (independent variable) on the outcome (dependent variable). When the β value of the relationship between the independent variable and dependent variable diminishes with the introduction of the mediator in the model, but remains significant and the Sobel test's value is $p < .05$, it is considered a partial mediation. When the β value of the relationship between the independent variable and dependent variable diminishes with the introduction of the mediator in the model, is no longer significant and the Sobel test's value is $p < .05$, it is considered a full mediation.

IV - Results

Preliminay Analyses

The assumption that the variables are normally distributed was assessed with the Kolmogorov-Smirnov test as well as through the analysis of *Skewness* and *Kurtosis* coefficient values. The results of these analyses indicate that the variables were not normally distributed (*Skewness* values ranged from -.505 to .509 and *Kurtosis* values ranged from -1.032 to -.252). Outliers were assessed through the analysis of *box plots*.

Analysis of the residual scatter plots were performed since it serves as a test of assumptions of normality, linearity and homoscedasticity (Tabachnick & Fidell, 2007). The residuals were normally distributed and had linearity and homoscedasticity. Additionally, the independence of errors was analyzed through the value of Durbin-Watson (values ranges from 1.785 to 2.522). Finally, multicollinearity or singularity was analyzed through Variance Inflation Factor (VIF) values. No evidence of β estimation problems was detected (VIF < 5). In sum, the results indicate that these data are adequate for regression analyses.

Descriptive Analysis

The means and standard deviations for the total sample and *t*-test[1] differences between males and females are presented on Table 1. No gender differences were obtained in the analysis.

[1] Gender differences were initially analyzed with Mann-Whitney U test, due to the small sample size and the violation of the assumption of normality of distributions. However, since both Student's *t*-test and Mann-Whitney U test obtained similar results, we opted to present the results from the Student's *t*-test analysis.

Tabel 1. Means and standard deviations for the total sample (N=30) and *t*-test differences between males (N=25) and females (N=5)

	Total (N=30)		Males (N=25)		Females (N=5)			
Variables	Mean	SD	Mean	SD	Mean	SD	*t*	*p*
IES-R	48.90	14.21	49.76	14.59	44.60	12.60	.735	.468
OAS	31.63	12.26	33.16	12.49	24.00	8.12	1.563	.129
PC frequency	43.83	14.85	44.04	15.40	42.80	13.22	.168	.868
PC conviction	47.23	11.10	48.60	11.06	40.40	9.45	1.543	.134
PC distress	34.73	18.56	36.52	17.77	25.80	21.99	1.187	.245

IES-R, Impact of Event Scale – Revised (shame traumatic memory); OAS, Other As Shamer (external shame); PC, Paranoia Checklist (paranoid ideation).

Correlation Analyses

In order to explore the relationship between variables, Spearman's rank correlations were conducted (Table 2). Shame traumatic memory was strongly and positively correlated with current external shame (ρ = .53; p < *.01*), and moderately and positively correlated with both measures of frequency (ρ = .49; p < *.01*) and distress (ρ = .38; p < *.05*) of paranoid ideation.

Concerning the relationship between external shame and paranoia, results revealed that external shame was found to be strongly and positively correlated with the measures of frequency (ρ = .65; p < *.01*), conviction (ρ = .50; p < *.01*) and distress of paranoid ideation (ρ = .54; p < *.01*).

Tabel 2. Intercorrelations (two-tailed Spearman's *ρ)* between shame traumatic memory, external shame and paranoid frequency, conviction and distress (N=30)

Variables	IES-R	OAS	PC frequency	PC conviction	PC distress
IES-R	1				
OAS	.53**	1			
PC frequency	.49**	.65**	1		
PC conviction	.27	.50**	.59**	1	
PC distress	.38*	.54**	.67**	.54**	1

***p < 0.010*, **p < 0.050*

Mediation Analyses

In order to further understand the contribution that the shame traumatic memory of the first episode of schizophrenia (IES-R) and current external shame (OAS) have on different measures of paranoid ideation (PC), mediation analyses were conducted using linear regression models. The mediation analyses for both frequency and distress of paranoid ideation will be presented in the next sections. Regarding conviction of paranoid ideation, we have conducted a regression analysis with shame traumatic memory as independent variable and conviction of paranoid ideation as dependent variable. This model was not significant ($F_{(1,28)} = 3.21$; $p = .084$) with $\beta = .32$ ($p = .084$). According to Baron and Kenny (1986), if the independent variable does not affect the dependent variable then the mediation cannot be established. Following the hypothesis that current external shame might predict conviction of paranoid ideation, a regression analysis was conducted. External shame was shown to be a significant predictor ($F_{(1,28)} = 11.43$; $p = .002$) accounting for 26.5% of conviction of paranoid ideation, with $\beta = .54$ ($p = .002$).

External shame as a mediator of the relationship between shame traumatic memory of the first episode of schizophrenia and frequency of paranoid ideation

The first regression analysis was performed with shame traumatic memory entered as independent variable and frequency of paranoid ideation as dependent variable. The model was significant ($F_{(1,28)} = 5.94$; $p = .021$), accounting for 14.6% of frequency of paranoid ideation, with $\beta = .42$ ($p = .021$). Another regression analysis was conducted in order to examine whether shame traumatic memory predicted current external shame. The model was also significant ($F_{(1,28)} = 6.59$; $p = .016$), accounting for 16.2% of current external shame, with $\beta = .44$ ($p = .016$). A third regression analysis was performed to examine if current external shame predicted frequency of paranoid ideation. This third model was also significant ($F_{(1,28)} = 15.38$; $p = .001$), accounting for 33.1% of frequency of paranoid ideation, with $\beta = .60$ ($p = .001$). Finally, a regression analysis was performed in order to test the mediation hypothesis. Both shame traumatic memory and current external shame were entered as independent variables and frequency of paranoid ideation as dependent variable. This model was significant ($F_{(2,27)} = 8.47$; $p = .001$), accounting for 34% of frequency of paranoid ideation. Results indicate that when the mediator (OAS) is added, the predictor (IES-R) β is reduced to .20 ($p = .253$) and is no longer significant. Sobel test was conducted and revealed a significant indirect effect between the predictor variable (shame traumatic memory) and the outcome variable (frequency of paranoid ideation), thus indicating the occurrence of a full mediation ($z = 2.151$, $p = 0.031$) (see Figure 1).

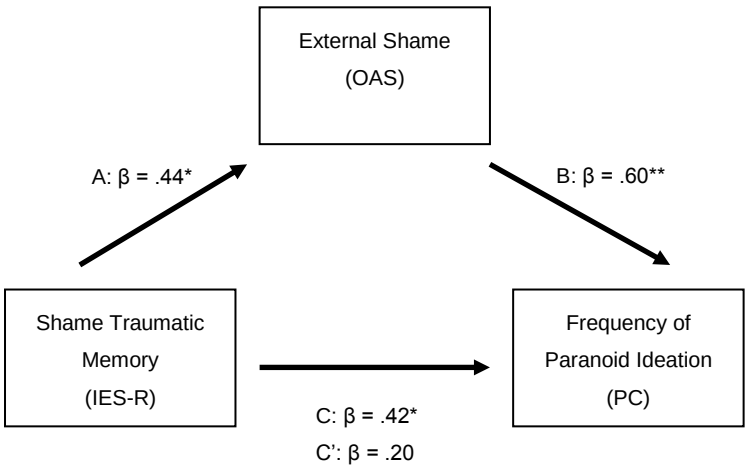

Figure 1. Standardized regression coefficients for the relationship between shame traumatic memory and the frequency of paranoid ideation as mediated by external shame. The standardized regression coefficient between shame traumatic memory and frequency of paranoid ideation controlling for external shame is represented by C'.
**p < 0.010. *p < 0.050

External shame as a mediator of the relationship between shame traumatic memory of the first episode of schizophrenia and distress associated with paranoid ideation

With the purpose to explore the hypothesis that current external shame might also mediate the relationship between shame traumatic memory of the first episode of schizophrenia and the distress associated with paranoid ideation, the same procedure was repeated. The first regression analysis was conducted with shame traumatic memory entered as independent variable and distress associated with paranoid ideation as dependent variable. This model was significant ($F_{(1,28)}$ = 4.75; p = .038), accounting for 11.4% of distress associated with paranoid ideation, with β = .38 (p = .038). The relationship between shame traumatic memory and external shame was obtained in the previous mediation analysis. Another regression analysis was performed to examine if current external shame predicted distress of paranoid ideation. This model was also significant ($F_{(1,28)}$ = 9.70; p = .004),

accounting for 23.1% of distress of paranoid ideation, with β = .51 (p = .004). Lastly, a regression analysis with both shame traumatic memory and external shame as independent variables and distress associated with paranoid ideation as a dependent variable was conducted. This model was significant ($F_{(2,27)}$ = 5.48; p = .010), accounting for 23,6% of distress of paranoid ideation. Results indicate that when the mediator (OAS) is added, the predictor (IES-R) β is reduced to .20 (p = .285) and is no longer significant. Sobel test was conducted and revealed a significant indirect effect between the predictor variable (shame traumatic memory) and the outcome variable (distress of paranoid ideation), thus indicating the occurrence of a full mediation (z = 1.984, p = 0.042) (see Figure 2).

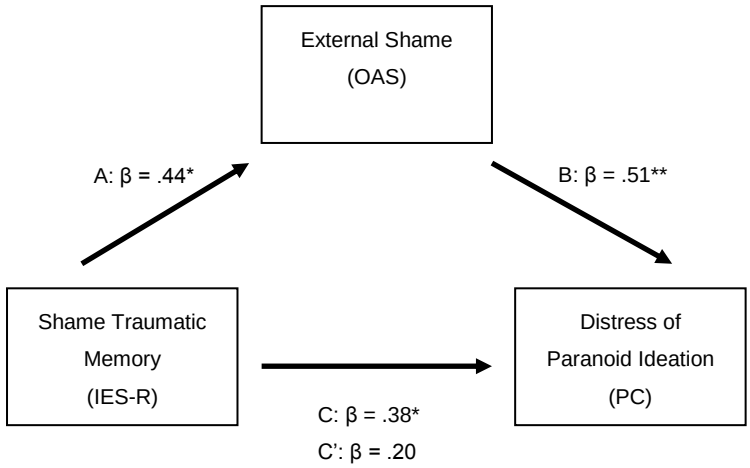

Figure 2. Standardized regression coefficients for the relationship between shame traumatic memory and distress associated with paranoid ideation as mediated by external shame. The standardized regression coefficient between shame traumatic memory and distress of paranoid ideation controlling for external shame is represented by C'. **p < 0.010. *p < 0.050

V - Discussion

Shame has been linked to various forms of intrapersonal and interpersonal problems as well as with several psychological symptoms (Gilbert & Andrews, 1998; Harder, 1995; Pineles, Street & Koenen, 2006; Tangney, Burggraf & Wagner, 1995; Tangney, Wagner & Gramzow, 1992). Early accounts seem to recognize shame as having a vital role in terms paranoid symptom formation (Colby, 1977; Morrison, 1985). Colby, Faught and Parkison's (1979) computer simulation model of paranoid condition specifically highlighted how inadequacy beliefs about the self (e.g. as someone who is inadequate, defective, worthless and insufficient), formed during the child's socialization process and molded by significant others, might be activated by relevant evidence which can be either external world input or internal processes. The activation of such beliefs would lead an increment in the shame affect and leave the individual in a state of distress. Paranoid beliefs would emerge has a mechanism to reduce this distress by allocating its source to an external locus, this way beliefs about the self's inadequacy were countered by beliefs about other's inadequacy. While intuitive, models that linked shame to paranoia lacked empirical validation. Recent findings with the general population have rekindled this link by showing that early shame memories seem to predict latter paranoid ideation (Matos, Pinto-Gouveia & Gilbert, 2013), as well as feelings of shame in adulthood of which external shame seems to be specifically related to paranoia (Gilbert et al., 2005, Matos, Pinto-Gouveia & Gilbert, 2013, Pinto-Gouveia, Matos, Castilho & Xavier, 2012). The present study aimed to understand the nature of the first episode of schizophrenia as a shame

traumatic event and its relation with current feelings of external shame and with different dimensions of paranoid ideation.

The first hypothesis of this study was that the first episode of schizophrenia could constitute a traumatic shame event. Effectively, the recalled experiences of the first episode of schizophrenia revealed to possess traumatic memory characteristics, such as symptoms of intrusion, avoidance and hyperarousal, and were positively and strongly associated with external shame. Such findings seem to indicate that individuals, whose onset is perceived as a traumatic experience in itself, tend to believe others judge them as inferior or inadequate. These findings seem to be in accordance with accounts of the first episode of schizophrenia as a "shattering life event" which could lead to loss of social goals, roles and actual or perceived low social ranking (Birchwood, 2003, Birchwood et al., 2002; Miller & Mason, 2005; Rooke & Birchwood, 1998).The perceived threat of devaluation and possible social rejection due to the anomalous phenomena the individual is experiencing seems to lead to the an involuntary affective-defensive response of shame (Gilbert, 1998, 2002). These results seem to corroborate the hypothesis that the first episode of schizophrenia could be seem as a shameful experience, which is encoded in memory with trauma-like characteristics and is related to current feelings of shame in a similar fashion has early shame memories. This is also in accordance with previous studies that propose that social stress (e.g. ostracism, public discredit, discrimination, experience of migration and social defeat) might trigger psychotic episodes and, specifically, paranoid ideation (Janssen et al., 2003; Kesting, Bredenpohl, Klenke, Westermann & Lincoln, 2012; Preti & Cella,

2010; Selton & Cantor-Graae, 2005; Selton & Cantor-Graae, 2007, Veling et al., 2007). Furthermore, the obtained results seem also to be in line with studies that attempted to understand the inherent properties that certain events possess which seem to strengthen the link between these events and the the onset and recurrence of schizophrenia symptoms. More specifically, "threatening and intrusive events", where there is an interference or apparent close control of the individual by people who are, relatively speaking, strangers, usually resulting in harmful consequences, and often committed by a figure of authority, seemed to be associated with the triggering of many cases of first episode psychosis and also seem to be specifically related to the development of persecutory ideation (Bebbington & Kuipers, 2008; Raune, Kuipers & Bebbington, 2009; Raune, Bebbington, Dunn & Kuipers, 2006). This data seems to suggest that these events might actually have specific triggering effects that might have a more direct impact on paranoid symptoms, in this case that of being shamed and believing that others see the self as inferior, defective or inadequate.

As was expected, external shame was positively and strongly associated with the dimensions of paranoid ideation. Previous studies with non-clinical populations had already demonstrated this association (Matos, Pinto-Gouveia and Gilbert, 2013; Pinto-Gouveia, et al., 2012). Chadwick and Trower (1997) had previously shown that paranoia was closely related to interpersonal threats, specifically with negative self-other evaluations. As it was previously said, the belief of the self as existing negatively in the minds of others is congruent with the idea that paranoia is focused on the malevolent intentions of others towards the self (Gilbert et al., 2005).

In addition, the present study sought to understand how the recalling of the shame traumatic experience of the first episode of schizophrenia could impact on paranoid ideation, by proposing that this relationship could be mediated by current external shame. In accordance with this hypothesis, it was found that external shame fully mediated the relationship between shame traumatic memory of the first episode and both the frequency and distress of paranoid ideation. Interestingly, shame traumatic memory of the first episode didn't predict the degree of conviction of paranoid ideation, but external shame did. These findings suggest that the impact of shame traumatic experience of the first episode of schizophrenia in both the frequency and distress of paranoid ideation is due to the operation of current external shame. Thus, it can be argued that individuals who experience their psychotic experience as a shame traumatic experience and have higher external shame, believing they exist negatively in the minds of others as someone who is bad, undesirable, weak, defective or inadequate, may also have more paranoid ideas and more distress associated with them. These results are congruent with previous studies with non-clinical populations where early emotional memories of shame, threat and submissiveness predicted paranoid ideation both directly and indirectly through external shame (Pinto-Gouveia, et al., 2012). Such results seem to suggest that these stressful events impact on paranoid ideation by promoting a negative sense of self as someone who exists negatively in the minds of others which can lead to the emergence of beliefs that others are dominant and threatening and may have malevolent intentions towards the individual. This seems to be compatible with the theoretical suggestions pertained by cognitive models of

positive symptoms (Garety et al., 2001; Freeman, Garety, Kuipers, Fowler & Bebbington, 2002). Effectively, Freeman et al (2002) asserted that persecutory delusions are a direct reflection of the emotions of the individual and are consistent with existing beliefs about the self, others and the world. Moreover, delusions seem to be associated with a sense of inferiority and self-diminishing. Additional evidence for the indirect effect of social stress on paranoid ideation may come from studies that link self-esteem and paranoia (Kesting et al., 2012). While shame and self-esteem are distinct constructs and the relationship between the two is unclear, some studies have verified that specific events that threaten one's social image and standing elicit feelings of low social worth, namely shame, and decrements in social self-esteem (Gilbert & Andrews, 1998; Gruenewald, Kemeny, Aziz & Fahey, 2004). Recently, Kesting et al. (2012) have found that paranoid thoughts increase as a consequence of the decrease of self-esteem rather than a direct reaction to social stress. These results seem to mirror our own and could suggest the multifaceted impact that social stress has on the individual. It is important to note that the present study considers paranoia to be an evolved defensive strategy, not to defend against the loss of self-esteem as some authors have proposed (Bentall, Kaney & Dewey, 1991; Bentall, Kinderman & Kaney, 1994), but to protect the self against potential hostile others that may hold negative intentions and may even intend to harm the self, both physically (e.g. trying to kill the individual) and socially (e.g. exploiting or derogating the self) (Gilbert et al., 2005). External efforts to damage and derogate the self may result in severe consequences, both in terms of physical injuries as well as loss of social standing and consequent

social exclusion and rejection, which might compromise the pursuit and attainment of several evolutionary goals thus, endangering the individual's survival and reproductive capabilities. Paranoia has evolved has a threat detection mechanism in order to protect the self from social threats and it does seem to be specially attuned to certain waning signals, such as the experience of external shame. Effectively, it has been shown that paranoid ideation seems to form a continuum with normal experience and beliefs; it is exponentially distributed and hierarchically arranged into different levels of frequency and severity along the general population, and it seems that persecutory ideas build on more common cognitions of mistrust and interpersonal sensivity (Bebbington et al., 2013). Our results thus seem to reinforce the conceptualization of paranoia in light of the social rank theory, which highlights shame as a central component of paranoid symptomatology.

In conclusion, while this study has some limitations, it does seem that the present findings may add to previous research on the role of shame memories on paranoid ideation (Matos, Pinto-Gouveia & Gilbert, 2013; Pinto-Gouveia, et al., 2012). Extending Matos, Pinto-Gouveia and Gilbert's (2013) suggestion, about the impact of early shame traumatic memories on the experience of paranoid symptoms, it is proposed that the first episode of schizophrenia is a shame traumatic experience which triggers early shame traumatic memories. This might contribute to the maintenance of a permanent sense of threat to the self, who is left to feel vulnerable, inferior, subordinate, powerless or undesirable, and view others as dominant, hostile and threatening, who may harm, reject or persecute the self. This might

result in (or reinforce) a hyperactivation of the threat system in face of (perceived) dangers to the self as a social agent as well as compromise the access to feelings of safeness and security, thus elevating vulnerability to experience paranoid symptoms. This idea that the activation of the threat-defense (fight-flight) system is intimately connected with paranoia is in line with cognitive models of persecutory delusions (Freeman, 2007; Freeman & Garety, 2006; Freeman et al., 2002). Our findings adds to previous knowledge about the affective processes in work in paranoid thinking which, in conjunction with negative self-other schemas, reasoning problems and cognitive biases (e.g. jumping to conclusions) as well as certain anomalous experiences, lead to the formation and maintenance of paranoid delusions.

VI – Clinical Implcations

This study intends to contribute to a better understanding of the relationship between shame and paranoia. To our knowledge, this is the first study to conceptualize the first episode of schizophrenia as a shameful experience encoded in memory as a traumatic memory which may have a specific impact on paranoid delusions.

Our findings have some implications for therapy. In fact, they point to the need to target shame when intervening with schizophrenic patients, thus supporting recently developed compassion-focused interventions of recovery from psychosis (Braehler, Gumley, Harper, Wallace, Norrie & Gilbert, 2013; Gumley, Braehler, Laithwaite, MacBeth & Gilbert, 2010; Laithwaite et al., 2009). While these interventions have been mainly associated with greater clinical improvements on negative symptoms of schizophrenia and

depression, the present findings suggest that these improvements may extend to positive symptoms, such as paranoid delusions.

Regarding intervention in itself, our findings seem to suggest that the therapist efforts should focus on current feelings of shame, as well as working with emotional memories of shame in childhood which seem to have a direct impact on these feelings. Exploration of the triggering events, namely the onset of schizophrenia, may not be of much use to the improvement of paranoid ideation.

VII - Limitations

Some limitations to this study must be considered before extrapolating the results to practice contexts.

First, the transversal nature of the study's design does not permit us to establish antecedent-consequent relationships which are inferred in the suggestions delineated in the discussion section.

Secondly, while this study used a clinical sample, the sample size was limited. Furthermore, our participants mean age was 38 years. The fact that most of the participants had their first episode over 20 years ago, in conjunction with the utilization of self-report questionnaires in order to recall the onset of their schizophrenia, may raise questions regarding the validity of their reports. Future research might benefit from using other type of measures (e.g. structured interviews), as well as increasing the sample size and seeking to reduce the gap between the actual age of the participants and the age of the onset.

Another possible limitation to the present study may be the fact that

we used Impact of Event Scale – Revised (Weiss & Marmar, 1997) to assess the traumatic impact of the first episode of schizophrenia, while at the same time priming the shame memory by asking the participants if that event could have been a event where they felt ashamed and diminished. The shame that the individual felt in the particular moment of the first episode was never directly assessed, being inferred by the participants' answers and by the relations established by the data. Future studies aiming to replicate these findings must be aware of this and make efforts to directly measure shame in that event, relating it with the traumatic impact of this experience, with current feelings of shame and the different dimensions of paranoid ideation.

While this study provides novel information regarding the relationship between shame and paranoid delusions, it is imperative that these limitations are tackled in future studies aiming to replicate these findings.

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Study 2 - Understanding the role of self-compassion on the emergence of depression in individuals with paranoid schizophrenia

Abstract

Previous studies have already shown how the experience of schizophrenia might be appraised as leading to greater personal loss, humiliation and entrapment, which seems related with the emergence of co-morbid depression. It has been also argued that depression might occur due to a compassionate deficit towards the self. The present study aimed to explore the relationship between self-compassion, submissive behaviors, external entrapment and depression in individuals with schizophrenia. Additionally, we sought to explore the assumption that reduced self-compassion might impede the regulation of submissive defensive behaviors and lead to feelings of defeat and entrapment that are associated with depression.

Thirty participants diagnosed with paranoid schizophrenia completed self-report measures of self-compassion, submissive behaviors, feelings of external entrapment and depression.

Results showed that both submissive behaviors and external entrapment were positively associated with depression. Self-compassion was negatively associated with submissive behaviors, external entrapment and depression. Moreover, submissive behaviors positively predicted depression, while self-compassion negatively predicted depression. Lastly, reduced self-compassion seems to fully mediate the relationship between external

entrapment and depression.

These findings seem to suggest that self-compassion might be an important target for interventions aiming to address depression during the course of schizophrenia. Limitations are discussed.

Keywords: paranoid schizophrenia; depression; submissive behaviors; external entrapment; self-compassion.

Resumo

Estudos prévios já haviam demonstrado como a experiência da esquizofrenia pode ser vista como algo do qual resulta elevada perda pessoal, humilhação e *entrapment*, que parecem estar relacionadas com a emergência de depressão co mórbida. Tem também sido afirmado que a depressão pode ocorrer devido a um défice na capacidade de ser compassivo em relação ao eu. O presente estudo procurou explorar a relação entre a auto-compaixão, comportamentos submissos, *entrapment* externo e depressão em indivíduos com esquizofrenia. Adicionalmente, procuramos explorar a hipótese que menor auto-compaixão pode impedir a regulação de comportamentos defensivos submissos e levar a sentimentos de derrota e *entrapment* que estão associados à depressão.

Trinta participantes com um diagnóstico de esquizofrenia paranoides completaram medidas de autorresposta de auto-compaixão, comportamentos submissos, sentimentos de *entrapment* externo e depressão.

Os resultados demonstraram que tanto os comportamentos submissos como o *entrapment* externo estavam positivamente associados com a depressão. A auto-compaixão estava negativamente associada com os

comportamentos submissos, *entrapment* externo e com a depressão. Adicionalmente, comportamentos submissos parecem ser predizer positivamente a depressão, enquanto a auto-compaixão parece predizer negativamente a depressão. Por último, menor auto-compaixão parece mediar completamente a relação entre o *entrapment* externo e a depressão.

Estes resultados parecem sugerir que a auto-compaixão pode ser um alvo importante para intervenções que procurem lidar com a depressão no decorrer do curso da esquizofrenia. As limitações do presente estudo são alvo de discussão

Palavras-chave: esquizofrenia paranoide; depressão; comportamentos submissos; *entrapment* externo; auto-compaixão.

I – Introduction

The experience of psychosis and its symptoms can be seen as a challenging or even traumatic experience in itself which requires adaptation by the individual and his family (Birchwood, 2003). Effectively, the onset of schizophrenia tends to occur in late adolescence or early adulthood, a critical period where the individual is consolidating its identity as well as pursuing certain developmental tasks and important social and occupational goals which are associated with successful adaptation to adulthood (Roisman, Masten, Coatsworth & Tellegen, 2004). The onset of schizophrenia as well as the gradual emergence of its symptoms and associated cognitive impairments might lead to severe decrements in social and vocational function (Perkins, Lieberman & Lewis, 2006), which can thus have a strong negative impact on these developmental processes and consequently affect

the person's sense of self, experience of life, the world and of his relationships (Riedesser, 2004).

Experiencing psychotic symptoms may be a distressing experience in itself, leaving the individual to feel betrayed by its own body and mind, shattering his view of self, others and the world (Bayley, 1986; Davidson & Strauss, 1992; Miller & Mason, 2005). Furthermore, the presence of residual symptoms (e.g. hostile voices) and experience of psychotic relapse might lead to feelings of defeat and entrapment (Birchwood, Mason, Macmillan & Healy, 1993; Birchwood & Chadwick, 1997). Aside from symptoms, other factors can contribute to the individual's appraisal of the psychotic experience as a shattering life event. Changes in body image due to weight gain or loss of sexual proficiency due to medication might also lead to feelings of shame (Miller & Mason, 2005). Furthermore, hostile and critical relationships maintained with family members and the stigma of being "schizophrenic", associated with stereotypes of being someone "out of control", "retarded" and "dangerous, results in feelings of humiliation, worthlessness, being ridiculed and having their vulnerabilities exposed to others (Birchwood et al., 1993; Miller & Mason, 2002, 2005). In sum, the individual might appraise his psychotic experience as if it was a shattering life event, leading to loss of social goals, roles and status and generating feelings of hopelessness, fear, guilt and shame (Birchwood, 2003). The onset of psychosis, as well as other events such as compulsory hospitalization, loss of roles and goals and the stigma of schizophrenia, can lead to actual and/or perceived low social ranking, particularly to loss of social attractiveness and talent, of belonging to a social group, resulting in social marginalization and

loss of sense of self (Birchwood, Meaden, Trower & Gilbert, 2002; Rooke & Birchwood, 1998).

Previous studies have highlighted how such life events, which are appraised as leading to loss, humiliation, defeat and entrapment, are likely to be depressogenic (Brown, Harris & Hepworth, 1995; Gilbert, 1992; Kendler, Hettema, Butera, Gardner & Prescott, 2003). Effectively, some findings suggest that feelings of humiliation, defeat and entrapment are more determinant to the emergence of depression, than the perception of loss alone (Brown et al., 1995; Carvalho et al., 2013; Gilbert & Allan, 1998). Regarding schizophrenia, previous studies have verified that depression in schizophrenia could be viewed in part as a psychological response to a perceived uncontrollable life-event, such as schizophrenia and its associated disabilities, which encompass appraisals of loss, humiliation and entrapment (Birchwood et al., 1993; Rooke & Birchwood, 1998).

Depression is a common clinical problem associated with schizophrenia and is considered to be a distinct dimension of psychotic phenomenology (Murray et al., 2005). It can occur at various phases of the illness, such as the prodome (Owens & Jonhstone, 2006), the acute and post psychotic phases (Birchwood, Iqbal & Upthegrove, 2005; Birchwood, Iqbal, Chadwick & Trower, 2000). Birchwood et al. (2000) study of depression during an acute episode indicated that up to 50% of the individuals experience depressive symptoms, while the prevalence of post psychotic depression (PPD) was of 36%. Promodal depression and depression in the acute phase seem to predict depression in the follow-up period (PPD) (Upthegrove et al., 2010). Furthermore, common psychological processes

seem to underlie both depression in the acute phase and PPD. Preliminary findings seem to suggest that depression during the acute episode might be triggered by the individual's perception of the degree of threat attributed to persecutors and an inability to defend against those threats; it also seems that appraising their psychosis as leading to greater loss, shame and entrapment is associated with higher risk of depression (Birchwood et al., 2005). Previous studies have already illustrated how PPD, which occurs independently of the symptoms of schizophrenia and may actually occur several months after recovery from an acute episode, was prevalent in individuals who had previously appraised their psychosis as leading to greater loss, humiliation and entrapment (Birchwood et al., 2005; Iqbal, Birchwood, Chadwick & Trower, 2000). Additionally, during PPD, individuals reported greater insight, lower self-esteem and more negative appraisals of loss, humiliation and entrapment (Birchwood et al., 2005). These studies seem to highlight the importance of social rank variables in the emergence and maintenance of depression in schizophrenia. Depression during the course schizophrenia might have a negative impact on the course of the illness (Conley, Ascher-Svanum, Zhu, Faries & Kinon, 2007; Siris, 1991, 2000), and serves as an indicator for poor prognosis of recovery (Resnick, Rosenheck & Lehman, 2004). It is associated with increased risk of relapse of psychosis and psychiatric hospitalization (Mandel, Severe, Schooler, Gelenberg & Mieske, 1982; Tollefson, Andersen & Tran, 1999), as well as lower subjective quality of life (Reine, Lançon, Di Tucci, Sapin & Auguier, 2003) and increased risk of suicide (Caldwell & Gottesman, 1990). However, while the importance of depression for the recovery of

schizophrenia is recognized, psychological interventions aiming for this problem continue to be underdeveloped (Birchwood & Trower, 2006; Iqbal et al., 2000; Mulholland & Cooper, 2000).

Social rank theory (Gilbert, 1992; Price, 1972; Price & Sloman, 1987; Price, Sloman, Gardner, Gilbert & Rhode, 1994) suggests that depression may have its roots on intrasexual competition for evolutionary meaningful resources (e.g. territories, alliances, sexual mates). Depression can be seen as a form yielding mechanism or defeat behavior that produces temporary psychological incapacity, signaling submission to the winner but preserving the loser (Price et al., 1994). In humans, such experience of defeat can arise from non-aggressive competitions for social positioning within specific social networks. Defeat seems to be connected the perception of one's reduction of social attractiveness or the ability to compete for social places and enact specific social roles, which thwart the individual's pursuit of biosocial goals (Gilbert, 1992, 2007). Indeed, feeling inferior to others, less competent and rejected has been associated with depression (Gilbert & Allan, 1998). Such experiences of defeat and down-ranking lead to the activation of an "involuntary subordination strategy" which will motivate the individual to use certain defensive behaviors, such as seeking support, submitting/appeasing, take flight or attack (Price et al., 1994; Gilbert, 1992). Submissive behaviors seem to be particularly aimed at avoiding and de-escalating conflicts by signaling a subordinate status, and are known to be vulnerability factor for depression (Allan & Gilbert, 1997; Alpert et al., 1997; Gilbert & Allan, 1994). Furthermore, while these defensive behaviors are generally adaptive, limiting the risk of costly conflicts for the individual

by motivating it to temporarily accept a subordinate status, it can lead also to pathological outcomes when these defensive behaviors are blocked or are ineffective. This sense of "failed struggle", of being defeated and entrapped in a subordinate relationship leave the individual in a high state of arousal without resolution and has an major downward impact on mood, which will likely lead to depression (Gilbert, 1992; Gilbert & Allan, 1998).

It has become clear that psychosis may lead to the reduction of one's social attractiveness and the ability to compete for social places and enact specific social roles, which thwart the pursuit of biosocial goals. Gilbert (2005, 2007, 2009) have proposed that evolved mechanism, called social mentalities, would be responsible for mobilizing the individual's processes in order for him to act competently in diverse social roles, such as care-giving, care-eliciting, formation of alliances, social ranking, sexual behavior. These mentalities are also intimately related with affect regulation systems, which evaluate each role the individual is pursuing in terms of its inherent threats, rewards or availability of safeness (Gumley, Braehler, Lathwaite, MacBeth & Gilbert, 2010). As it was previously discussed, depression in schizophrenia seems to relate to threats directed at the social ranking mentality. Gumley et al. (2010) assert that threats in schizophrenia come from many sources both internal (e.g. anomalous experiences, appraisals of the experience of psychosis, activation of traumatic memories, self-criticism, dominant voices) and external (e.g. relationships maintained with dominant and hostile others, stigma). In this case, the threat-defense system is activated and leads to safety strategies (e.g. social withdrawal, being overly submissive and self-critical) which might actually lead to outcomes that

reinforce the sense of threat, helplessness and entrapment (Birchwood et al., 2007). In contrast, the safeness-soothing system seems to be underactive and is thus unable to regulate the threat-defense system and dampen the associated negative affect (Gilbert, 2005, 2007, 2009; Gumley et al., 2010). Gilbert & Irons (2005) have asserted that individual's become self-critical and depressed when they do not have access to emotionally textured memories of being affectionally cared for (soothed) and their self-compassion mentality has been under-stimulated. Several studies seem to suggest that early negative interpersonal experiences are a prevalent aspect in the life story of many individuals with schizophrenia (Read, Goodman, Morrison, Ross & Aderhold, 2004) and that these may indeed lead to under-stimulation of positive affect and warmth systems as well as a an overstimulation of a threat focused social rank mentality, where others are not seen as the source of support and soothing but as a source of threat (Gilbert, 2004).

Depression can thus be better conceptualized as a deficit of compassion towards the self (Allen & Knight, 2005). Neff (2003a) conceptualizes self-compassion as a healthy attitude towards oneself, defining it as the ability to be *"touched by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness. Self-compassion also involves offering nonjudgmental understanding to one's pain, inadequacies and failures, so that one's experience is seen as part of the larger human experience"* (pp. 87). Recent studies have shown that self-compassion is negatively associated with depression (Barnard & Curry, 2011; Krieger,

Altenstein, Baettig, Doerig & Holtforth, 2013; MacBeth & Gumley, 2012; Neff, 2003a). Moreover, depressed individuals had lower levels of self-compassion when compared with individuals who had never been depressed (Krieger et al., 2013). Compassionate focused interventions in clinically depressed individuals have reported significant increases in self-compassion and self-reassuring and significant reductions in self-criticism and depressive symptoms (Shahar et al., 2011). Similarly, the positive dimensions of self-compassion (i.e. self-kindness, common humanity and mindfulness) have been shown to negatively predict submissive behaviors (Akin, 2009). Since these dimensions have also been associated with higher feelings of autonomy and competence (Neff, 2003a), Akin (2009) suggest that self-compassionate individuals may perceive themselves as independent individuals who are not in need of using submissive behaviors. This may also avoid the development of feelings of defeat and entrapment in subordinate roles when relating with other individuals. The above cited findings seem to support the assumption that depressed individuals lack self-compassion. Furthermore, these findings also seem to be in line with the evolutionary conceptualization of compassion as an evolved motivational system, rooted in the evolution of attachment behavior, designed to self-sooth and regulate negative affect through attuning to the feelings of self and others, and expressing feelings of warmth and safeness (Depue & Morrone-Strupinsky, 2005; Gilbert, 2009; Spikins, Rutherford & Needham, 2010).

While there are already some studies linking self-compassion and compassion-focused interventions with psychosis and schizophrenia (Eicher, Davis & Lysaker, 2013; Gumley et al., 2010; Johnson et al., 2009), only a

few address depressive symptoms (Laithwaite et al., 2009; Mayhew & Gilbert, 2008), which revealed to be negatively associated with self-compassion.

II - Aims

Despite the fact that research on self-compassion and depressive symptoms in individuals with schizophrenia is still somewhat scarce, it is anticipated that measures of submissive behavior, external entrapment and depression will be negatively associated with measures of self-compassion. Furthermore, we explore the "depression as a compassion deficit" hypothesis. Accordingly, it is expected that lower self-compassion might lead to an unregulated activation of the threat-defense system in face of social threats, which activates submissive defense behaviors that result in lower social ranking and have negative impact on one's mood. Furthermore, previous studies that explored the effectiveness of compassion-focused interventions on self-critical thinking and on malevolent voices revealed significant reductions in these measures (Mayhew & Gilbert, 2008). Both self-criticism and powerful and dominant voices function as internal social threat signals and have been associated with feeling entrapped in a subordinate role, which is associated with emergence of depression. Similarly to internal threat signals, it is expected that lower levels of self-compassion might be unable to counteract external social threat signals arising from abusive or stigmatizing relationships, which is expected to lead to higher feelings of entrapment. In sum, our first objective is to explore the relationship between submissive behavior, external entrapment, self-

compassion and depression. We also hypothesize that lower levels of self-compassion might mediate the effects of both submissive behaviors and external entrapment on depression. To our knowledge, this is the first study to explore the relationship between social ranking variables, depression and self-compassion in a clinical sample of individuals with schizophrenia.

III - Method

Participants

The sample for this study consisted of 30 participants (25 men and 5 women) who were outpatients or inpatients at the Psychiatric Services of the "Centro Hospitalar e Universitário de Coimbra". All of the participants carried a diagnosis of paranoid schizophrenia, which was given by experienced psychiatrists who worked in those services. Participants' mean age was 38 (SD =10.10), ranging from 18 to 58. The majority of the participants were single (70%, *n* = 21) and lived with their parents (63.3%, *n* = 19). In terms of academic education, participants tended to range between intermediate school (7 years of study) and university degrees (more than 12 years of study) (cumulative percentage of 86.7%, *n* = 27*)*, and were mostly employed (56.7%, *n* = 17). Most of the participants (36.7%, *n* = 11) asserted that they were never referred to inpatient care and all of them were taking anti-psychotic medication. No gender differences were verified concerning these variables.

Procedures

All procedures were approved by the clinical director of the

psychiatric services before beginning the study. Participants were recruited with the help of a psychiatrist that was familiar with the clinical case. Each participant was given a brief description of the nature of the study and of the protocol. Upon their agreement to participate, they would be asked to sign the consent form before completing the self-report questionnaires. Confidentiality and anonymity were assured. Participants were given a battery of self-report questionnaires, administered in the same order, which were filled in the presence of the researcher in a medical office of the psychiatric services. The completion of the battery took approximately 45 to 60 minutes. In some cases, participants requested assistance to read out the questions and answers. The researcher tried to answer such questions while at the same time trying to avoid influencing the participant's responses.

Measures

Submissive Behavior Scale (SBS; Allan & Gilbert, 1995, 1997; Gilbert & Allan, 1994; Portuguese translation and adaptation by Castilho & Pinto-Gouveia, manuscript in preparation, 2013) is a self-report measure consisting of 16 items which are examples of submissive behaviors (e.g. "I agree that I am wrong even though I know I'm not"). These items are rated on a five-point Likert scale in terms of the frequency of these behaviors (from 0= "Never" to 4= "Always"). In this study, the total score of the scale was obtained by summing the scores of all the items and then calculating the mean score. Higher total scores indicate greater use of subordinate behaviors. The scale has a good reliability, with a Cronbach α value of .82 in a student group and .85 in a depressed group (Allan & Gilbert, 1997), and

four-month test-retest reliability of .84 in a student population (Gilbert, Allan & Trent, 1996). In this study, the Cronbach's α was .75.

Entrapment Scale (ES; Gilbert & Allan, 1998; Portuguese translation and adaptation by Carvalho, Pinto-Gouveia, Castilho & Pimentel, 2011) is a measure of feelings of entrapment. This self-report measure is constituted by 16 items which are rated on a five-point Likert scale accordingly to the extent that each statement represents the view that each individual has of himself (0= "Not at all like me" to 4= "Extremely like me"). This scale is composed by two subscales: internal entrapment (IE) and external entrapment (EE). The internal entrapment subscale (6 items) relates to escape motivation triggered by internal feelings and thoughts. The external entrapment subscale (10 items) relates to the perception of things in the outside world that induce escape motivation. Higher scores indicate greater feelings of entrapment. For the present study, only the external entrapment subscale is going to be used. In the original study, the internal entrapment Cronbach's α value was .93 for the student group and .86 for the depressed group. For external entrapment, the Cronbach's α value was .88 for the student group and .89 for the depressed group (Gilbert & Allan, 1998). In the Portuguese version, internal entrapment scale obtained Cronbach α values of .90, .89 and .81 for a student sample, a general population sample and a clinical sample, respectively. External entrapment scale obtained Cronbach α values of .92, .92 and .91 in that same student sample, general population sample and clinical sample, respectively (Carvalho, et al., 2011). In this study, the Cronbach's α values were .88 and .89, for internal entrapment and

external entrapment subscales, respectively.

Self-Compassion Scale (SELFCS; Neff, 2003b; Portuguese translation and adaptation by Castilho, Pinto-Gouveia & Duarte, manuscript in preparation, 2013) is a self-report measure composed by 26 items that measure six components: Self-Kindness, Self-Judgment, Common Humanity, Isolation, Mindfulness and Over-Identification. Each item is rated on a five-point Likert scale accordingly to how frequent does the individual act that way towards himself in difficult times (1= "Almost never" to 5="Almost always"). Subscale scores are obtained by calculating the mean of subscale item responses. The total self-compassion score can be obtained by reversing the score the negative subscale items (i.e. self-judgment, isolation, and over-identification) and then compute a total mean. The original scale revealed to possess a very good reliability, with a Cronbach's α value of .92 and a test-retest reliability of .93 (Neff, 2003b). In this study, the Cronbach's α value was 81.

Depression, Anxiety and Stress Scale (DASS-42; Lovibond & Lovibond, 1995; Portuguese translation and adaptation by Pais-Ribeiro, Honrado & Leal, 2004) is a 42-item questionnaire composed by three subscales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three DASS scales contain 14 items, which are rated on a four-point severity/frequency scale (0 to 3) by respondents in relation to the extent to which they have experienced each state over the past week. The total scores for each subscale is obtained by summing the scores

of the relevant items. For the purpose of the present study, only the depression scale is going to be considered. On the original study, it was found that the three subscales had high internal consistency, with a Cronbach's α value of .91 for the depression subscale, .84 for the anxiety subscale and .90 for the stress subscale (Lovibond & Lovibond, 1995). The Portuguese version obtained Cronbach α value of .93 for the depression subscale, .83 for the anxiety subscale and .88 for the stress subscale (Pais-Ribeiro et al., 2004). In this study, the Cronbach's α value was .92 for the depression subscale, .90 for the anxiety subscale and .92 for the stress subscale.

Data Analyses

Data analyses were conducted using SPSS (Statistical Package for the Social Sciences), version 20 (IBM Corp, Armonk, NY, USA). Gender differences were tested for using independent samples *t*-tests and Spearman's correlations were used to examine the associations between the variables in study.

Following the proposal that low self-compassion might function as a mechanism through which submissive behaviors and feelings of entrapment impact on depression, mediation analyses were conducted. The mediation analyses followed the four-step analysis procedure recommended by Baron and Kenny (1986). According to these authors, a variable functions as a mediator when it meets the following conditions: (1) variations in levels of the independent variable significantly account for variations in the dependent variable, (2) variations in levels of the independent variable

significantly account for variations in the mediator, (3) variations in both the independent variable and in the mediator significantly account for variations in the dependent variable. The final step seeks to demonstrate a significant reduction of the effect of the independent variable on the dependent variable (outcome). The indirect effects are thus defined as a reduction of the effect of the predictor variable on the result, when a mediator variable is included in the model. The significance of the indirect effects was analyzed with Sobel test. This analysis clarifies Baron and Kenny's (1986) mediation procedure since it directly tests whether or not the total effect of the independent variable on the dependent variable is significantly reduced upon the addition of a mediator to the model (Preacher & Hayes, 2004). The Sobel test's accuracy is dependent on the normality of the sampling distribution, and it was designed to assess the indirect effect of the predictor variable (independent variable) on the outcome (dependent variable). When the β value of the relationship between the independent variable and dependent variable diminishes with the introduction of the mediator in the model, but remains significant and the Sobel test's value is $p < .05$, it is considered a partial mediation. When the β value of the relationship between the independent variable and dependent variable diminishes with the introduction of the mediator in the model, is no longer significant and the Sobel test's value is $p < .05$, it is considered a full mediation.

IV – Results

Preliminary Analysis

The assumption that the variables are normally distributed was

assessed with the Kolmogorov-Smirnov test as well as through the analysis of *Skewness* and *Kurtosis* coefficient values. The results of these analyses indicate that the variables were not normally distributed (*Skewness* values ranged from .325 to .452 and *Kurtosis* values ranged from -.590 to 1.212). Outliers were assessed through the analysis of *box plots*.

Analysis of the residual scatter plots were performed since it serves as a test of assumptions of normality, linearity and homoscedasticity (Tabachnick & Fidell, 2007). The residuals were normally distributed and had linearity and homoscedasticity. Additionally, the independence of errors was analyzed through the value of Durbin-Watson (values ranges from 1.476 to 2.236). Finally, multicollinearity or singularity was analyzed through Variance Inflation Factor (VIF) values. No evidence of β estimation problems was detected (VIF < 5). In sum, the results indicate that these data are adequate for regression analyses.

Descriptive Analysis

The means and standard deviations for the total sample and *t*-test[2] differences between males and females are presented on Table 1. No gender differences were found concerning the variables under consideration.

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[2] Gender differences were initially analyzed with Mann-Whitney U test, due to the small sample size and the violation of the assumption of normality of distributions. However, since both Student's *t*-test and Mann-Whitney U test obtained similar results, we opted to present the results from the Student's *t*-test analysis.

Tabel 1. Means and standard deviations for the total sample (N=30) and *t*-test differences between males (N=25) and females (N=5)

	Total (N=30)		Males (N=25)		Females (N=5)			
Variables	Mean	SD	Mean	SD	Mean	SD	*t*	*p*
SBS	1.64	.09	1.63	.47	1.71	.62	-.352	.728
EE	14.37	9.10	15.00	9.22	11.20	8.64	.848	.403
SELFCS	3.03	.42	3.02	.40	3.11	.55	-.446	.659
DASS depression	13.07	8.40	12.44	7.54	16.20	12.46	-.912	.370

SBS, Submissive Behavior Scale; EE, External Entrapment subscale of the Entrapment Scale; SELFCS, Self-Compassion Scale; DASS depression, Depression subscale of the Depression, Anxiety and Stress Scale.

Correlation Analyses

Table 2 illustrates the correlations between submissive behaviors, external entrapment, depression and self-compassion. Submissive behavior was strongly and positively correlated with both external entrapment (ρ = .53; $p < .01$) and depression (ρ = .57; $p < .01$). Regarding external entrapment, it was found that it was also moderately and positively correlated with depression (ρ = .49; $p < .01$).

In contrast, self-compassion revealed to be moderately and negatively correlated with both submissive behaviors (ρ = -.37; $p < .05$) and external entrapment (ρ = -.38; $p < .05$). Strong and negative correlation were also found between self-compassion and depression (ρ = -.58; $p < .01$).

Tabel 2. Intercorrelations (two-tailed Spearman's *ρ)* between submissive behavior, external entrapment, depression and self-compassion (N=30)

Variables	SBS	EE	SELFCS	DASS depression
SBS	1			
EE	.53**	1		
SELFCS	-.37*	-.38*	1	
DASS depression	.57**	.49**	-.58**	1

***p < 0.010, *p < 0.050*

Regression Analyses

Following the hypothesis that lower levels of self-compassion (SELFCS) could mediate the effects of submissive behaviors (SBS) on depression (DASS), a mediation analysis was initially attempted using linear regression models. A regression analysis was conducted with submissive behaviors entered as independent variable and self-compassion as dependent variable. This model was not significant ($F_{(1,28)} = 3.50$; $p = .072$) with $\beta = -.33$ ($p = .072$). According to Baron and Kenny (1986), if the independent variable does not affect the mediator variable then the mediation cannot be established. However, it is important to note that this regression analysis revealed to be close to statistical significance and that this study has a considerable amount of limitations, of which the size of the sample seems to be the most preeminent, that might justify this finding.

Nevertheless, in order to further understand the contribution that both submissive behaviors (SBS) and self-compassion (SELFCS) have on depression (DASS), a multiple regression analysis was conducted. The results of the regression indicated that the two predictors explained 41.4% of the variance ($F_{(2,27)} = 11.23$; $p = .000$). It was found that submissive

behaviors significantly predicted depression (β = .34, p = .031), as did self-compassion (β = -.48, p = .004).

Mediation Analysis

In order to test the hypothesis that feelings of entrapment (EE) might impact on depression (DASS) due to lower levels of self-compassion (SELFCS), which impede the individual to regulate the operation of the threat-defense system and self-soothe, mediation analyses were conducted using linear regression models. The first regression analysis was performed with external entrapment entered as independent variable and depression as dependent variable. The model was significant ($F_{(1,28)}$ = 8.67; p = .006), accounting for 20.9% of frequency of depressive symptoms, with β = .49 (p = .006). Another regression analysis was conducted with external entrapment as independent variable and self-compassion as dependent variable. The model was also significant ($F_{(1,28)}$ = 4.94; p = .035), accounting for 12% of self-compassion, with β = -.39 (p = .035). A third regression analysis was performed to examine the relationship between self-compassion and depression. This third model was also significant ($F_{(1,28)}$ = 15.05; p = .001), accounting for 32.6% of depressive symptoms, with β = -.59 (p = .001). Finally, a regression analysis was performed in order to test the mediation hypothesis. Both external entrapment and self-compassion were entered as independent variables and depression as dependent variable. This model was significant ($F_{(2,27)}$ = 10.08; p = .001), accounting for 38.5% of depression. Results indicate that when the mediator (SELFCS) is added, the predictor's (EE) β is reduced to .30 (p = .066) and is no longer

significant. Sobel test was conducted and revealed a non-significant indirect effect between the predictor variable (external entrapment) and the outcome variable (depresssion) (z = -1.946, p = 0.051) (see Figure 1).

While, technically, an *alpha* value above .05 would not allow us to reject the null hypothesis of no mediation, it is important to consider that an *alpha* value of .051 is very close to statistical significance. Furthermore, some limitations of the present study, such as the small sample size, may account for this non-significant result. By considering these aspects, we believe there is some evidence for the occurrence of a full mediation. Thus, we can argue that the relationship between external entrapment and depression is fully mediated by lower levels of self-compassion.

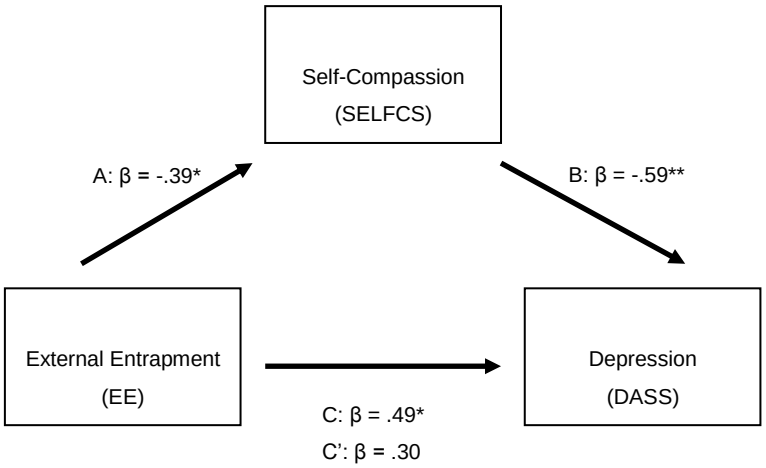

Figure 1. Standardized regression coefficients for the relationship between external entrapment and depression as mediated by self-compassion. The standardized regression coefficient between external entrapment and depression controlling for self-compassion is represented by C'. **p < 0.010. *p < 0.050

V – Discussion

Previous studies have already emphasized how certain life events, perceived by the individual as leading to loss, humiliation, defeat and entrapment, could also lead to the emergence of depression (Brown et al., 1995; Kendler et al., 2003). The experience of schizophrenia could be appraised has one of such cases (Birchwood et al., 1993; Rooke & Birchwood, 1998), since it encompasses a wide range of negative personal and social consequences for the individual. These consequences have a down-ranking effect on the individual's social status and may predispose him to resort to submissive behaviors when faced with social threat signals arising from their relationships with others. As it was previously mentioned, submissive behaviors and feelings of being entrapped in a subordinate role seem to be specifically associated with the emergence of depression (Allan & Gilbert, 1997; Gilbert & Allan, 1998). Effectively, Birchwood, Meaden, Trower, Gilbert and Plaistow (2000) have previously shown that individuals with schizophrenia not only felt more subordinate and entrapped in an inferior position in relation to their "voices", but they also felt this way in their relationships with others. In addition, studies on family environment have also revealed that individuals living with relatives who have a high expressed emotion, which is a form of adverse family environment characterized by emotional over-involvement, hostility and critical comments, tended to establish a more competitive relationship with their relatives, where the individual could be positioned as a one-down element as a result of the ensuing power struggle (Wuerker, 1996). High expressed emotion family environments have been related with higher rates of relapse

in individuals with schizophrenia (Butzlaff & Hooley, 1998). Such findings appear to highlight the extent trough which these individuals feel more subordinate and entrapped in their relationships with others, as well the consequences that arise from these relationships.

The present study aimed to investigate the relations between submissive behaviors, external entrapment and self-compassion in relation to depression in a clinical sample of individuals with paranoid schizophrenia. As expected, both submissive behaviors and external entrapment were positively associated with depression. Self-compassion was negatively associated with submissive behaviors, external entrapment and depression. These results are in accordance with previous studies that reported a negative association between self-compassion and depressive symptoms in individuals with schizophrenia (Laithwaite et al., 2009; Mayhew & Gilbert, 2008). Furthermore, self-compassion's negative association with both submissive behaviors and external entrapment seems also to be in line with the idea that self-compassion is positively related with mental health and adaptive psychological functioning (Neff, 2003a). Submissive behavior and external entrapment stem from the perception that one is inferior, defective, and is vulnerable to the attacks from more powerful others (Gilbert & Allan, 1994). Since others are seen as superior and more capable, submissive individuals tend to assume that they are to blame, and effectively self-blame, when things go wrong (Akin, 2009). While submissive behaviors may serve adaptive functions in some cases, the continued and inflexible use of these strategies may lead the individual to neglect its own needs, lose the respect from others and, due to its long-term inefficacy in resolving the individual's

problems, it may lead to a sense of "failed struggle" and entrapment which have a major downward impact on mood (Akin, 2009; Allan & Gilbert, 1997; Gilbert & Allan, 1998). In contrast, self-compassion is associated with the perception that one's failures and inadequacies are part of the human condition and that everyone is worthy of compassion (Neff, 2003a). Compassion is not given as a result of being superior or more deserving, but rather due to the recognition of equality and interconnectedness between the self and others (Brown, 1999). The recognition by the individual that he is human and, therefore, a limited and imperfect being, effectively counters the fear of being seen as inferior and different from others since we all share flaws and inadequacies (Neff, 2003a). Such recognition renders defensive strategies, such as the use of submissive behaviors, useless in these situations. Additionally, self-compassion is also related with self-kindness, in opposition to harsh judgment and self-criticism which have been associated with submission and depression, and *mindfulness*, which counters the individual's tendency to over-identify with their emotional reactions and his attempts to avoid and repress painful feelings (Neff, 2003a). Over-identifying with one's own emotional reactions seems to increase the feelings of isolation and separation from others and lead to an exaggeration of the extent of personal suffering. Since these individuals become so immersed in their own internal reactions, they might be unable to elaborate alternative and more adaptive interpretations and responses (Neff, 2003a), which might result in an increased feeling of entrapment in a subordinate role due to the overuse of ineffective strategies such as submissive behaviors. The present findings thus seem to be in accordance with previous

studies that related submission, external entrapment, depression and self-criticism (lack of self-compassion) (Allan & Gilbert, 1997; Gilbert, Baldwin, Irons, Baccus & Palmer, 2006; Öngen, 2006).

The present study also aimed to explore the "depression as a compassion deficit" hypothesis in individuals with schizophrenia. In accordance with this hypothesis, it was found that lower levels of self-compassion fully mediated the relationship between external entrapment and depression. This seem to suggest that the impact of the individual's highly motivated blocked attempts at escaping certain hostile environments on depression is operated due to self-criticism (lack of self-compassion). This finding seems to be in line with the above cited assumptions that less self-compassionate individuals may find it difficult to adopt a more objective perspective of distressing situations and engage in alternative interpretations and responses (Neff, 2003a). This may generate feelings of being stuck and entrapped, which may lead the individual to fall into a self-perpetuating cycle of diminished self-esteem, self-criticism and psychopathological problems such as depression (Allan & Gilbert, 1997; Gilbert & Allan, 1994). Without a developed self-compassion mentality to dampen negative affect, it is argued that the threat-defense system might remain in an over-stimulated state and continue to motivate the use of ineffective defensive behaviors that maintain this cycle (Gumley et al., 2010). Lack of self-compassion might not only hinder the use of more functional responses by the individual but it also seems to be related with the tendency to be more self-critical, to over-identify with distressful emotional reactions and with a tendency to feel oneself as more different and isolated from others (Neff, 2003a, 2003b).

Effectively, it has been previously shown that feelings of loneliness and isolation (Cacioppo, Hughes, Waite, Hawkley & Thisted, 2006), self-criticism (Irons, Gilbert, Baldwin, Baccus & Palmer, 2006), rumination and over-identification (Nolen-Hoeksema, 1991) predict depression.

Interestingly, since submissive behavior failed to significantly predict self-compassion, it was not possible to establish self-compassion as a mediator in the relationship between submissive behaviors and depression. While this result differs from our expectations, since previous studies had reported a significant negative relationship between self-compassion and submissive behaviors (Akin, 2009), we have previously asserted some reasons that may explain this occurrence. The impact of the present study's limitations on the obtained results should be taken in consideration in future studies aiming to retest our hypotheses. Nevertheless, multiple regression analyses were conducted to verify if submissive behavior and self-compassion could significantly predict depression. As expected, submissive behaviors positively predicted depression and self-compassion negatively predicted depression. These results are in accordance with previous studies that explored the role of submissive behaviors (Allan & Gilbert, 1997; Gilbert & Allan, 1994) and self-compassion (Barnard & Curry, 2011; Krieger et al., 2013; MacBeth & Gumley, 2012; Neff, 2003a) in depression and seem to provide additional evidence to support the use of compassion-focused intervention on the treatment of depression in patients with schizophrenia.

In conclusion, while the limitations inherent to the present study suggest the need for its replication, it seems plausible to assert that the

present findings provide additional evidence for the integration of compassionate exercises as therapeutic components of interventions designed to deal with depression that occurs alongside schizophrenia. Effectively, our results suggest that difficulties in accessing emotionally textured memories of being soothed, developing compassionate models and self-compassion seem to be implicated with the development and maintenance of depression along the course of schizophrenia. This has profound implications to the recovery of schizophrenia, since depression is one of the strongest predictors of relapse into an acute episode of schizophrenia (Kazadi, Moosa & Jeenah, 2008; Mandel et al., 1982; Siris, 2000; Tollefson et al., 1999).

VI – Clinical Implications

As it was previously mentioned, the present study may contribute to a better understanding of the role of self-compassion in the emergence and maintenance of depression during the course of schizophrenia.

Our findings seem to point to the fact that self-compassion may indeed serve as a protective factor in individuals with schizophrenia, namely by regulating negative affect and tackling feelings of being different, isolated and entrapped that are associated with depression. Furthermore, these findings seem to support the use of compassion-focused interventions in individuals with schizophrenia that complain of depressive symptoms (Braehler, Gumley, Harper, Wallace, Norrie & Gilbert, 2013; Gumley et al., 2010; Laithwaite et al., 2009).

VII – Limitations

The present study has some limitations that must be considered. First, the transversal nature of the study's design does not permit us to establish antecedent-consequent relationships, which are inferred based on theoretical suggestions and previous research. Prospective studies should be conducted in order to determine the causal relations between the variables. Secondly, while this study used a clinical sample, the sample size was limited. It is advisable that future studies seeking to retest our hypothesis do not overlook the consequences of a limited sample size. Thirdly, we used self-report questionnaires in order to measure the different variables. Additionally, while DASS-42 may contribute to assess depressive symptoms, it was not designed as a diagnostic instrument since it doesn't include several symptoms (e.g. sleep disturbance, appetite change) that correspond to the diagnostic criteria of depression. In order to overcome some of the limitations associated with the use of self-report questionnaires, future studies could also benefit from using instruments (e.g. semi-structured interviews), such as the Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein & Opler, 1987), whose contents more closely resemble the phenomenology of this clinical population.

The exploratory nature of the present study warrants the need for its replication. Nonetheless, this study seems to contribute to a better understanding of some mechanisms that underlie depression during the course of schizophrenia and its results seems to support the use of compassionate-focused interventions to address this issue.

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