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Discovering trajectories that lead to Borderline Personality Disorder

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Dissertação de Mestrado em Psicologia Clínica e de Saúde (Sub-área de Especialização em Intervenções Cognitivo-Comportamentais nas Perturbações Psicológicas e de Saúde) sob a orientação da Professora Doutora Paula Castilho

Um dos preconceitos mais conhecidos e mais espalhados
consiste em crer que cada homem
possui como sua propriedade certas qualidades definidas,
que há homens bons ou maus, inteligentes ou estúpidos,
enérgicos ou apáticos, e assim por diante.
Os homens não são feitos assim.
Podemos dizer que determinado homem se mostra
mais frequentemente bom do que mau,
mais frequentemente inteligente do que estúpido,
mais frequentemente enérgico do que apático, ou inversamente;
mas seria falso afirmar de um homem que é bom ou inteligente,
e de outro que é mau ou estúpido.
No entanto, é assim que os julgamos.
Pois isso é falso.
Os homens parecem-se com os rios:
todos são feitos dos mesmos elementos,
mas ora são estreitos, ora rápidos, ora largos,
ora plácidos, claros ou frios, turvos ou tépidos.

Leon Tolstoi

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Introdução

Inúmeros têm sido os esforços para melhor estudar e compreender a Perturbação da Personalidade Borderline (PBP) ao longo dos últimos anos, a literatura tem proliferado, mas esta continua a ser uma perturbação difícil de tratar, com uma taxa de cronicidade elevada e uma heterogeneidade imensa. Por ser uma perturbação desafiante, há muitos processos a desvendar e compreender para neles poder intervir e com um campo tão vasto de variáveis que se queriam explorar optou-se por dividir esta tese em dois estudos.

Num primeito estudo procura-se colmatar e corroborar alguns dados que relacionam os sintomas borderlines com memórias emocionais de vergonha, e memórias positivas de calor e afecto, e ainda a relação entre estes e a capacidade de descentração.

No segundo estudo, procurou-se explorar a relação entre a alexythimia e a dissociação, que se suspeita estarem altamente interligadas entre si, e especialmente com a PBP. Neste estudo, foi ainda feita uma análise comparativa entre um grupo clinico, com perturbação da personalidade borderline, e um grupo não clínico, no qual se estudaram as variáveis alexitimia e dissociação, e ainda a capacidade de descentração e mindfulness.

Estes estudos complementam-se na medida em que ambos fornecem dados importantes para uma melhor compreensão do valor preditivo de algumas variáveis, da escassez de outras, e de como essas dinâmicas podem contribuir para o desenvolvimento da PBP, e compreendendo os processos torna-se mais fácil intervir neles.

Study 1.

Emotional memories and borderline symptomatology: how

do they relate and what's the role of decentering?

Resumo

O aparecimento de estudos acerda da vergonha e memórias emocionais tem vindo a aumentar ao longo dos anos, e diversos investigadores demonstraram o importante impacto que experiencias emocionais negativas na infância podem ter no desenvolvimento da pessoa na vida adulta, aumentando a vulnerabilidade à psicopatologia como as perturbações da personalidade, e principalmente na perturbação borderline da personalidade.

As características *borderlines* incluem um padrão comportamental disruptivo e uma elevada desregulação emocional, que interfere severamente na sua vida diária e nas relações interpessoais. Evidencias empíricas sugerem que a PBP está relacionada com ambientes negligentes e invalidantes, com poucas esperiências de calor e afecto, e possivelmente com memórias traumáticas de vergonha. A descentração tem sido associada à diminuição do auto-criticismo e da vergonha, que caracterizam a PBP.

Este estudo pretende compreender a ligação entre as memorias emocionais (memórias de calor e afecto na infência, e memórias de vergonha interna e externa) e sintomas borderlines, investigando ainda se a descentração pode ter um efeito mediador neste processo.

Uma amostra de 304 sujeitos da comunidade foi usada neste estudo, e foi recolhida através de um questionário online, onde não foram encontradas quaiquer diferenças de género.

Os resultados demonstraram correlções positivas moderadas entre as memórias de vergonha (relacionadas com o trauma) e sintomas borderline e uma correlação negativa moderada entre esta variável e as memórias de calor e afecto. A descentração demonstrou uma correlação positiva moderada com as memórias de calor e afecto e uma correlação negativa moderada com as duas variáveis de vergonha interna e externa no trauma, e ainda com os sintomas borderline. A análise de trajectóries permitiu-nos ainda tertar um modelo, no qual se demonstrou que a descentração tem um efeito mediador entre as memórias emocionais e os sintomas borderlines, o que significa que a presença de capacidades de descentração pode em parte suavizar o efeito de memórias emocionais negativas, nos sintomas borderlines.

Palavras Chave: Memórias traumáticas de vergonha, Memórias de calor e afecto; sintomas borderline; descentração.

Abstract

The emergence of studies about shame and emotional memories has been increasing over the past years, and several researchers stated the important impact that negative emotional experiences in early life, can have in the person's development and adult life, increasing the vulnerability to psychopathology, such as personality disorders, and namely, borderline personality disorder. The borderline features include disrupt behavioral pattern and emotional dysregulation, interfering profoundly in everyday life and interpersonal relationships. Empirical evidence suggests that BPD are related, to invalidating and negligent environments, with few experiences of warmth and safeness, and possibly traumatic shameful memories. Decentering has been associated in decreasing high self-criticism and shame, which characterize BPD.

This study pretends to understand the connection between emotional memories (early memories of warmth and safeness, and traumatic internal and external shame) and borderline symptoms, and investigate if decentering can have a mediator effect on that process.

A sample of 304 subjects from general community was used in this study, which was collected through an online survey, showing no gender different in the variables in study.

The results showed moderate positive correlation between shame memories (related to trauma) and borderline symptoms and a negative moderate correlation between this variable and early memories of warmth and safeness. Decentering revealed moderate positive correlation with warmth and safeness memories, and a moderate negative correlation with both variable of traumatic internal and external shame, and also with borderline symptoms. Path analyses allowed us to test a model which demonstrated that decentering has a mediation effect between emotional memories and borderline symptoms, meaning that the presence of decentering can in part smooth the effect of negative emotional memories on borderline symptoms.

Key words: Shame traumatic Memories, Warmth and Safeness memories; borderline features; decentering.

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1. Introduction

Features of Borderline Personality Disorder (BPD) include problems such as emotional instability, unstable relationships, impulsive behaviors, identity insecurity and intentional self-injury (American Psychiatric Association, 2006). There are several young adults who do not have a diagnosis of BPD but have a high number of features of this disorder, and some studies refer that they have significantly greater depression, more negative affect, use of emotions suppression to cope, and anxiety symptoms compared to those with an absence of BPD features (Trull, 1995). In some recent investigation, there have been also identified low self-esteem and high negative affect associated with traumatic shameful events during childhood, and also abuse and negligence situations during childhood, among the close family (Andrews, 2002; Baird, 2008; Belsky et al. 2012; Brown, Linehan, Comtois, Murray, & Chapman, 2009; Zeigler-Hill and Abraham 2006).

Linehan's (1993) describes borderline personality disorder as mostly a disorder of emotional dysregulation and emotional vulnerability (difficulties in regulating negative emotions); self-invalidation (propensity to invalidate or fail to recognize one's own thoughts and emotional responses, and may include intense shame, self-hate, and self-directed anger); unrelenting crises (pattern of frequent, stressful, negative environmental events, disruptions, and roadblocks); inhibited grieving (inclination to inhibit and overcontrol negative emotional responses, especially those associated with loss, including sadness, anger, shame, and anxiety); active passivity (propensity to passive interpersonal problem-solving style, and learned helplessness, hopelessness); and apparent competence (a tendency to show deceptively more competent than actually is; failure to display adequate nonverbal cues of emotional distress.

There are few studies about borderline symptomatology in normal population, therefore it is difficult to have a clear understanding of their prevalence and expression of symptoms. However, a few years ago, Chabrol, Chouicha, Montovany and Callahan (2001), made a comparative study with high school students (*n*= 107), and after dividing them in two groups, *normal population* and *borderline personality disorder* (based on the number of DSM-IV BPD criteria, followed by semi-structured interview) they made dispersion analysis, which point toward a gradual dispersion, suggesting a continuum from

normality to BPD.

Several researchers have been trying to answer the question about the origin of these multivariate problems for a long time, so there are many studies trying to figure out the epistemology of borderline symptoms (Lyoo, Han, Choo, 1998; Paris, 2008; Skodol et al., 2002;). The most accepted theories have a multifactor vision, which includes: genetic and biological vulnerabilities, which result in "complicated" temperaments, characterized by a lower emotional threshold (Belsky et al., 2012; Taylor, Karlamangla, Friedman, & Seeman, 2011), and also the context an early experiences, including life events, types of attachment, and stories of abusive and negligent caregivers (Baer et al, 2012; Baird, 2008; Matos, Pinto-Gouveia & Costa, 2011; Freitas 2011).

Beyond the predisposing biological/genetic influences, the other factors that seem to be related to the development of borderline symptomatology are some life events, and innumerous studies show a high correlation with stories of abuse and negligence in childhood (physical, psychological and/or sexual), and it seems that the severity of the borderline symptomatology, it's related with the severity of the suffered trauma (Baird, 2008, Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). Along with this type of experiences, the quality of attachment with caregivers, is also considered an important factor in the susceptibility to developing BPD. The insecure attachment hypothesis is maybe one of the earliest theories, and more well empirically supported, that still remains as one of the strongest predictors of psychopathology in general and BPD in particular (Baird, 2008; Bowlby, 1969 cited in Baird, 2008; Levy, 2005). Numerous studies alerted to the impact of the relationship between the mother/caregivers and the patient, since infancy, and the most common features of their mothers were: emotionally cold and with few signs of affection. They are described as negligent mothers, who didn't proportionate a secure attachment to their children (Baird, 2008; Gilbert, 2007; Levy, 2005).

To better understand the complexity of the emotional difficulties that are usually underlying borderline symptomatology, we will base our hypotheses on Gilbert's biopsychosocial model (2007), which suggest that people who came from neglectful backgrounds as mentioned before, have experienced low affection, and therefore their emotion system that give rise to the feelings of safeness soothing and reassurance is inaccessible to them, or frightening to deal

with, and that's why they usually react in such an aversive way when it is activated. In this situation they generally feel lost or anxious because they don't know how to deactivate it, and appeal to dysfunctional emotion regulation strategies (Gilbert, 2009). The emotion that follows rejection by others, and underlies social threat, comprising a family of negative feelings ranging from embarrassment to severe humiliation, it's called shame. It is the painful self-consciousness of negative judgment (or the fear and anticipation of it) inferiority, unwanted exposure, failure and defeat, which is usually followed by forms of self-criticism and rumination, that increase the vulnerability to develop psychopathology (Gilbert & Procter, 2006).

In order to comprehend the impact of the presence or absence of warmth and safeness memories, Richter, Gilbert and McEwan (2009), developed a scale to measure people recall of inner positive feelings, emotions and experiences in childhood, and they demonstrated that the presence and remembrance of positive emotional memories, (feeling warmth, safe, and cared for as a child), were significantly and negatively associated with psychopathology (e.g., depressive symptoms) and positively related to a disposition to experience positive affects (e.g., of safeness, warmth and security). Oppositely, there is several empirical evidence emphasizing that neglectful, rejecting, shaming, critical and abusive experiences damage brain development in a drastic and long-lasting manner and represent one of the most powerful elicitors of stress responses, triggering the threat system, which is very sensitive in BPD (Perry, 2002; Taylor, Karlamangla, Friedman, Seeman, 2011; Freitas, 2011). Those experiences undermine the development of the affiliative-soothing system (Gilbert, Baldwin, Irons, Baccus, & Clark, 2006), which elevates the vulnerability to physical and mental health problems (Andrews, 2002; Gilbert, 2009a; Gilbert, Cheung, Grandfield, Campey, & Irons, 2003), namely personality disorders such as BPD (Liotti, 2002; Linehan, 1993; Linehan, & Dexter-Mazza, 2008). The fact that affiliative-soothing system is under stimulated in these individuals compromise physiological and emotional regulation, which makes them less able to articulate positive self (as lovable and worthy) and others (as soothing and reassuring) schema and to self-soothe when facing distress (Gilbert, 2009b; Gilbert & Procter, 2006).

The scientific literature suggest that the recall of memories of warmth and caring, protect from psychopathology, and that's why the early positive social

relationships are so important, to promote a sense of being loved, accepted, valued and chosen by others (e.g., caregivers, friends, lovers) for important social roles, and thus, developing feelings of safeness, connectedness and a sense of belonging (Bowlby, 1973 *cit in* Matos & Pinto-Gouveis, 2012; Gilbert, 2010). On the other hand, when those positive experiences are scarce and the negative experiences are more striking, children are unable to develop secure attachments and are left in a threatened state, where safety and defensive behaviors are over–stimulated (Gilbert, 2002; Nickell, Waudby, Trull, 2002; Perry, 2002).

Additionally, Gilbert (2007) acknowledged that when one does not feel safe in the world, and particularly in their social context, they frequently feel threatened and social rank concerns begin to guide self-other processing. Thus, one becomes prone to feel inferior to others and believe others perceive him/her negatively, that way experiencing shame, which can culminate in adopting defensive submissive strategies in social relationships which, in turn, make them more vulnerable to psychopathological symptoms (Gilbert, 2000; Gilbert & Irons, 2005). Experiencing shame early in life is proven to affect self-concept, and future internal and external shame (Freitas, 2011; Matos & Pinto-Gouveia, 2010). The feeling of shame can emerge as a response to diverse social threat, such as being an unattractive social agent, perceiving that one exists negatively in the mind of others (Andrews, 2002; Gilbert, 2002; 2007). This type of feeling is called *external shame,* and is related to the idea that others see us as having deficits, failures or exposed flaws that can bring to rejection (Gilbert, 1998, 2003). The focus is on the experience of the self as an object in the mind of the others, on losing attractiveness in their eyes, and the feelings one has generated in them (e.g., contempt, ridicule, disgust, disdain, or disinterest).

When we consider internal shame, we reflect on attention and processing oriented to one's emotions, personal characteristics, or behavior (Gilbert, 2007; Gilbert & Irons, 2009). These negative automatic thoughts about the self can take the form of self-criticism and self-attacking thoughts (e.g., I am worthless, a bad person, no good, a failure) and represent self-devaluations and internally shaming thoughts. This way, shame can be internalized, being linked to the experience of the self as undesirable, worthless, and inferior (Gilbert, 1998; Gilbert, & McGuire, 1998). Shame experiences can occur early in life, and according to recent research (Matos & Pinto-Gouveia, 2010), those shameful events may

become encoded as conditioned emotional memories which function as traumatic ones, characterized by intrusion, hyperarousal and avoidance symptoms. Additionally, these threat activating memories can forge the whole sense of self and become central to one's personal identity (Pinto-Gouveia, & Matos, 2011).

Furthermore, shame traumatic central memories have been associated with shame feelings in adulthood and the quality of attachment relationships was found to be the key in the way shame memories are structured, meaning that insecure attachment will probably potentiate the impact of shame memories, and both internal and external shame in adulthood (Matos & Pinto-Gouveia, 2010; Matos, Pinto-Gouveia & Costa, 2011; Rüsch et al., 2007).

Early life experiences and attachment relationships are deeply connected to the way we learn to regulate our emotions (Leahy, Tirch, & Napolitano, 2011). Emotional regulation strategies can be described as processes through which individuals modulate their emotions, consciously and non-consciously, in order to accordingly respond to environment demands (Leahy, Tirch, & Napolitano, 2011; Salsman, & Linehan, 2012). So the key to understand why some individuals that have passed through similar experiences (traumatic shameful events, few experiences of warmth and safeness in their childhood) seem to have better outcomes than others, is to understand which types of emotion regulation strategies are more effective, and can protect to the escalation normally associated to borderline emotional dysregulation. Borderline symptomatology it's associated with several maladaptive cognitive processes, including memory bias, and distorted interpretation and thinking processes such as rumination, which has been proven to be related to the maintenance of BPD symptomatology (Baer & Sauer, 2011; Upton, 2011).

In that matter, some recent studies about third generation psychological therapies, have presented some new approaches on how to treat borderline symptoms and difficult cases in general, which have already been tested and showed improvements on several areas, namely in the content of negative thoughts and emotion regulation, suggesting that the development of compassion skills and decentering, can help diminish self-criticism and rumination (Gilbert & Procter, 2006; Morton, Snowdon, Gopold & Guymer, 2012; Teasdale et al., 2002). Decentering, has been described as the capacity to relate to negative experiences as mental events (temporary and concrete), that pass through one's

mind, without considering them necessarily true, and taking into account this definition, some findings point out that this metacognitive awareness can help manage negative thoughts and subsequent emotional dysregulation, helping to cope with them and decreasing their intensity (Morton, Snowdon, Gopold & Guymer, 2012; Segal, Teasdale, & Williams, 2004; Watkins, Teasdale, & Williams, 2000).

A study that investigated self-rumination, showed that this process works as a mediator in the relationship between shame and personal distress, and conclusions also suggest that shame and self-rumination may feed each other within a reciprocal cycle that is likely to result in a maladaptive empathic response (i.e., personal distress) (Joireman, 2004). High levels of rumination and shame are frequent in people with borderline symptomatology, and consequently decentering it is predicted to present low levels in BPD patients (Baer et all., 2012; Morton, Snowdon, Gopold & Guymer, 2012). Based on this premise, a recent study attempted to prove that promoting those type of skills can improve borderline psychotherapy, decreasing BPD emotional dysregulation, and the preliminary outcomes are promising (Morton, Snowdon, Gopold & Guymer, 2012). However the studies about these connections between shame memories, borderline symptomatology and decentering, have been scant.

II. Aims

The present study sets out to explore the relationship between shame traumatic memories in childhood, as well as the absence of early memories of warmth and safeness, and the borderline symptomatology. In other words, this research focus on the impact of traumatic shameful events (where there was a feeling of shame - internal and/or external – related to that event) and there is not a recall of moments in childhood where the subject felt cared for, loved and accepted, and in which way those experiences affect the probability of having borderline symptoms (e.g. emotional dysregulation, abandonment issues, self-injury, emptiness) in the present. We should expect that recalled shame traumatic memories in childhood show a positive association with borderline symptoms, and the more traumatic shame memories (both external and internal shame) the higher will score borderline symptoms. On the contrary, it is hypothesized that memories of warmth and safeness in childhood, are negatively correlated with

borderline symptomatology. Thus it's expected that individuals with higher levels of childhood memories of their parents as caregivers, supporting and warmth, would have less borderline symptoms.

Is also object of study, the connection between decentering and borderline symptomatology, along with emotional memories. It's expected that decentering present a negative correlation with borderline symptomatology, meaning that higher levels of borderline symptomatology, will be associated with lower levels of decentering. In relation to memories of warmth and safeness, they are expected to be positively correlated with decentering. On the other hand, traumatic shameful memories are expected to be negatively correlated with decentering, in other words, the higher scores the traumatic shameful memories (both internal and external), the lower will be decentering skills.

Finally, the main goal of this study was to investigate how emotional memories and decentering are related to borderline symptoms. Considering all the findings described above, we considered important to investigate if decentering can function as a buffer, when those negative experiences already took place. For this purpose, we tested a mediational chain path model for the relationships among emotional memories, decentering, and borderline symptoms (Figure 1). In the theoretical model, we predicted that shame traumatic memory (external shame and internal shame subscales) and warmth and safeness memories in childhood would impact upon borderline symptoms through decentering skills (see Figure 1).
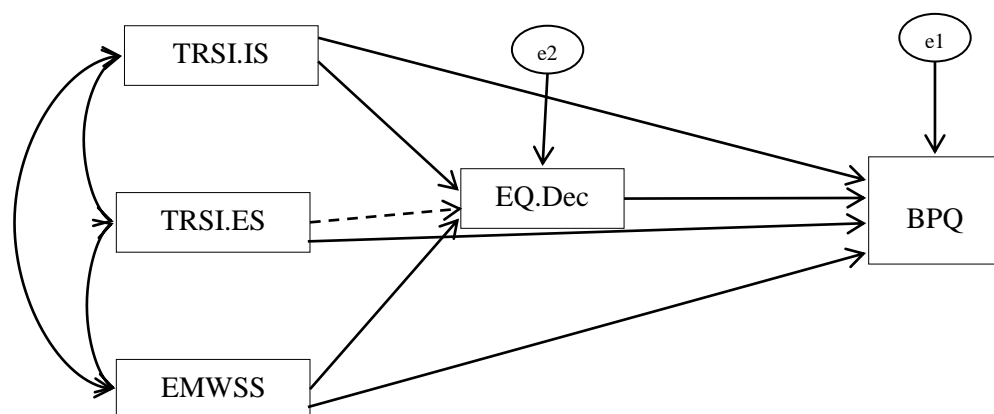

Figure 1. Theoretical model for the mediational chain between emotional memories, decentering and borderline symptomatology. Key: TRSI.IS = Trauma Related Shame Inventory − Internal Shame; TRSI.ES = Trauma Related Shame Inventory − External Shame; EMWSS= Early Memories of Warmth and Safeness Scale; EQ.Dec = Experiences Questionnaire − Decentering subscale; BPQ = Borderline Personality Questionnaire.

III. Method

3.1. Participants

Participants in this study were 304 persons from the general population (103 men and 201 women) from all over the country. Participants total mean age was 27.03 (SD = 6.75) with age ranging from 18 to 55. Significant gender differences were found considering the age, with men (M = 29.41) significantly older than women (M = 25.82), $t_{(6.75)}$ = 4.532. Seventy nine per cent of the subjects were single (n = 243), 9,2% are unmarried but living together as a couple, and 7,6% were married, and differences between genders were found in marital status can be seen on table 1, $X^2(4)$ = 18.10; p = .001. About the qualifications, the majority of the participants (44,4%) have a degree course, and 20,1% have a master or a PhD.

Table 1.

Descriptive statistics of socio-demographic features. Means (M), Standard Deviations (SD) and t-test differences between males (n = 103) and females (n = 201).

	Male (n = 103)		Female (n = 201)			
	M	DP	M	DP	t	p
Age	29.41	7.7	25.82	5.86	4.532	.000
	N	$\%$	N	$\%$	χ_2	p
Civil Status					18.10	.001
Single	74	71.8	169	84.1		
Married	10	9.7	13	6.5		
Divorced	8	7.9	-	-		
Separated	1	1.0	1	0.5		
Unmarried couple	10	9.7	18	9.9		
Socioeconomic Status					12.99	.011
Low	52	50.5	144	71.6		
Medium	35	34.0	41	20.4		
High	16	15.5	16	8.0		
	Male (n = 103)		Female (n= 201)			
	M	SD	M	SD	t	p
Highest Graduation Achieved					13.46	.001
Basic Education qualifications (9th year of sch.)	4	3.9	3	1.5		

Secondary Education (or equivalent)	20	19.4	14	7.0
Technical training or attending higher education	19	18.4	48	23.9
Bachelors or Graduate Diploma (3/5 years)	41	39.8	94	46.8
Masters or PHD	19	18.4	42	20.9

3.2. Measures

Memories of Warmth Caring and Safeness

Early Memories of Warmth and Safeness Scale - EMWSS (Richter, Gilbert, & McEwan, 2009; Portuguese Version: Matos & Pinto-Gouveia, 2010). This scale was designed to measure recall of feeling warm, safe, accepted and cared for in childhood. The 21 items included statements such as "I felt appreciated the way I was" or "I felt part of those around me". The response measure consisted of a Likert-type scale with participants required to rate how frequently each statement applied to them in their childhood (0 = No, never; 1 = Yes, but rarely, 2 = Yes, sometimes, 3 = Yes, often, 4 = Yes, most of the time). The scale had some initial instructions, about the focus on childhood experiences. Richter and collaborators, in 2009, found an excellent internal consistency with a Cronbachs alpha of 0.97, and the Portuguese version also supported this value. In the current study it was obtained a Cronbach' alpha of 0.98, which means the instrument has a good internal consistency.

Decentering

Experiences Questionnaire – EQ; (Fresco, Moore and collaborators, 2007; Portuguese version: Pinto-Gouveia, Gregório, Duarte, & Simões, 2012). The EQ is a 20-item self-report inventory designed to measure decentering (capability to observe one's thoughts and feelings as temporary, especially the negative thoughts). Items are rated on a 5-point Likert scale (1=never, 5=all the time). The EQ total scale revealed a .83 Cronbach' alpha, and a value of .91 for the Portuguese version (Pinto-Gouveia, Gregório, Duarte, & Simões, 2012). The present study presents a good internal reliability of the instrument, with a Cronbach' alpha of .86. In the decentering subscale, it was obtained a Cronbach' alpha of .86 revealing also a good internal consistency.

Shame – Traumatic Memories

Trauma Related Shame Inventory (Hoffart & Oktedale, 2011; Portuguese version: Matos & Pinto-Gouveia, *in-press*). This scale was designed specifically to evaluate traumatic shame, related to a specific event that may have occurred between childhood and adolescence. This scale is divided into two subscales, containing 12 items each, one that measures internal shame, and the other measuring external shame (Hoffart & Oktedale, 2011). Some examples of items that can be considered are "21 - *Because of my traumatic experience, I don't like myself*" – from the internal shame subscale, and "*If others knew what happened to me, they would despise me*", from the external shame. The questionnaire uses a four points Likert Scale, that vary between "0 = *Not at all correct about me*" and "3 = *Completely correct about me*". The original version of the scale presented good internal consistency for both internal shame ($\alpha = .80$) and external shame (.86). The Portuguese version presented good levels of internal consistency as well. In the present study the instrument revealed a very good internal consistency, with a Cronbach' alpha of .95. The subscales also presented excellent values with a Cronbach' alpha of .91 for *Internal Shame* subscale, and .90 in *External Shame*.

Borderline Symptomatology

Borderline Personality Questionnaire – BPQ; (Poreh et al., 2006; Portuguese version: Pinto-Gouveia, & Duarte, 2007). The *Borderline Personality Questionnaire* is a self report measure, that pretends to assess borderline personality traits, based on DSM-IV (APA, 1994) criteria for this disturbance. This instrument is constituted by 80 dichotomous items (No=0; Yes=1), organized in 9 subscales, corresponding to those criteria, which are: Impulsivity, Affective Instability, Abandonment, Relationships, Self image, Suicide/Self-mutilation, Emptiness, Intense Anger, and Quasi-psychotic States. We can find items reversely scored like "I rarely feel sad and anxious", or "When I trust people, they rarely disappoint me", and normal scored items "I often do things without thinking them through.", and for example "When I drink, I drink too much.". The total score can de considered, or the partial results, using the mean score of each subscale.

In the study of the original version the authors (Poreh et al., 2006) validated the psychometric properties of the BPQ in tree non clinical samples, culturally different, and it presented a good internal consistency in the total scale, and reasonably good in the subscales. The Portuguese translation and adaptation of this scale was made by e Pinto-Gouveia & Duarte, 2007, but the scale still hasn't been measured for the Portuguese population. In this study, we obtained an excellent Cronbach' alpha, of 0.93.

3.3. Procedure

All participants completed a battery of self-report questionnaires, after reading a small written introduction referring the aims of the study. Then it was explained that their co-operation was voluntary and their answers were confidential and only used for the purpose of the study. The sample of this study was gathered online, using an online platform (Google docs), in which some self report questionnaire were introduced integrally, and then a link was generated, allowing people to click on it and fill up the questionnaires here described. This link was publicized through social networks and several emails were sent, and the dissemination of the link was also made in some forums and institutional websites.

3.4 Analytical Strategy

Our empirical study had a cross-sectional design. Independent Samples t Tests were conducted to estimate mean differences between two independent groups. The required assumptions to appliance of these statistical tests were taken under consideration (distribution analyses and homogeneity of variance). Mean differences with $p \leq .050$ were considered statistically significant (Howell, 2007; Maroco, 2010). Pearson product-moment correlations were further performed to explore the relationships between emotional memories (*trauma related internal* and *external shame,* and *early memories of warmth and safeness*), *decentering* and *borderline symptomatology* variable. In the interpretation of correlation coefficients' magnitude, the cut points proposed by Pestana and Gageiro (2003), were followed (i.e., very low: r from 0 to .19; low between .20 and .39; moderate: r from .30 to .69; high between .70 and .89 and very high: $r < .90$).

An hypothetical causal model was proposed using *path analysis,* which

allowed to consider simultaneously the influence of all the exogenous and endogenous variables, and dismantle the association between variables into different types of effects: (a) direct effects (direct relationship between variables, estimated through the path coefficient from one variable to another); (b) indirect or mediator effect (involve one or more intervening variables, or mediator variables, presumed to "transmit" some of the causal effects of prior variables onto subsequent variables); (c) unanalyzed effects (effect due to correlated causes between two variables); and (d) spurious effects (if the observed relation between two variables is due to ≥ 1 common cause(s) (Maroco, 2010).

Based on all these assumptions we tested a causal model of the impact of emotional memories in childhood (*early memories of warmth and safeness,* and *trauma related internal and external shame*) over the *borderline symptomatology*, mediated for *decentering*. In this mediational model (Model 1) we tested whether decentering (mediator endogenous variable) mediated the effect of trauma related shame memories (TRSI) and early memories of warmth and safeness (EWSS) (independent exogenous variables) on borderline symptomatology (BPQ) (dependent endogenous variable) (Model 1).

A path analysis was carried out to test for the mediator effect described previously. This is a special case of structural equation modeling and considers hypothetic causal relations between variables that have already been defined (Kline, 2005). A Maximum Likelihood Estimation method was used to evaluate the regression coefficients significance. This procedure estimates the optimal effect of one set of variables on another set of variables in the same equation, controlling for error (Byrne, 2010; Kline, 2005). Multivariate outliers were screened using Mahalanobis squared distance (D^2) method and uni and multivariate normality was assessed by skewness (sk) and kurtosis (ku) coefficients. There was no severe violation of normal distribution ($|Sk|<3$ e $|Ku|<10$, ver Maroco, 2010; Kline, 2005). The significance of direct, indirect and total effects was assessed using χ^2 tests (Kline, 2005).

Bootstrapping resampling method was further used to test the significance of the meditational path, using 2000 bootstrap samples and 95% confidence intervals (CIs). Sample size was determined according to the recommendation of five cases/individuals per parameter (Kline, 2005). Effects with p<.05 were considered statistically significant. The global model adequacy was assessed

according to the respective benchmarks and approximate fit indexes: χ^2/df, CFI, TLI e RMSEA, *p* [rmsea $\leq$ *.05*] (Kline, 2005; Maroco, 2010).These data analyses were conducted using PASW (*Predictive Analytics Software*), version 20 (SPSS Inc., Chicago, IL, USA) for PCs. In addition, structural equation models, specifically path analyses, were estimated using AMOS (*Analysis of Moment Structures*) version 20 (Amos Development Corporation, Crawfordville, FL, USA).

IV. Results

Preliminary analyzes

To assure that there were no significant differences among the variables in study, we conducted independent samples *t tests* to estimate the mean differences. Whenever the homogeneity premise (homoscedasticity) was compromised, we used the software rectification method to correct it (Howell, 2007).

Our variables didn´t present a normal distribution, however, the skweness and kurtosis coefficients didn't showed significant biases, and the sample has $n \geq$ 30, we still used parametric tests because of the statistical strength and reliability they present, even when in presence of violation of the normality principle.

We also analyzed the presence of outliers through the exploitation of the graphic representation of the sample results (e.g., *box plot*), and, as referred above, using the Mahalanobis squared distance (D^2) method, which allowed us to identify some extreme values. Although, it was decided to maintain those values, because it was consider the possibility of its interest to the phenomena in study.

Descriptives

The means and standard deviations, divided by gender are on table 2. We tested if there were some kind of gender variation for all variables and no differences were found concerning the variables under consideration, as demonstrated in Table 2, presenting *t*-test and *p* values.

Table 2.

Means (M) and Standard Deviations (SD) by gender, and t-test differences between males (n=103) and females (n = 201)

	Males (n = 103)		Females (n = 201)			
	M	*SD*	*M*	*SD*	*t*	*p*
Internal Shame (TRSI.ES)	16.36	5.82	17.73	6.57	-1.86	.064
External Shame (TRSI.IS)	15.23	4.82	15.95	5.38	-1.18	.239
Warmth an Safeness Memories (EMWSS)	56.98	19.65	57.73	21.37	-.306	.760
Decentering (EQ.Dec)	25.69	6.18	25.63	6.18	.096	.923
Borderline Symptoms (BPQ)	19.80	12.73	21.57	13.27	-1.126	.261

Note. TRSI.ES = Trauma Related Shame Inventory – External Shame; TRSI.IS = Trauma Related Shame Inventory – Internal Shame; EMWSS = Early Memories of Warmth and Safeness Scale; EQ.Dec = Experiences Questionnaire – decentering.

Correlation analyses

Pearson correlation analyze were conducted in order to understand the correlations between *early memories of warmth and safeness* (EMWSS), *trauma related internal* and *external shame* (TRSI.IS; TRSI.ES), *decentering* (EQ.Dec) and *borderline symptomatology* (BPQ). The outcomes are presented on Table 4, and the obtained correlations were significant and in the expected direction of association.

Emotional Memories

The *trauma related external shame* (TRSI.ES) showed a low negative correlation with *memories of warmth and safeness* (EMWSS) ($r = -.31$; $p \leq .01$). The same tendency was demonstrated in relation to *trauma related internal shame* (TRSI.IS) ($r = -.34$; $p \leq .01$). The low variance shared by these recollections of early experiences in childhood suggests that they are important but distinctive memories.

Emotional memories and decentering

Decentering showed a moderate positive correlation with *memories of warmth and safeness* ($r = .43$; $p \leq .01$), suggesting that one can possible facilitate the development of the other. When considering *trauma related internal* and *external shame*, both revealed moderate negative correlations with *decentering*,

(TRSI.IS: r = -.40; TRSI.ES: r = -.33; $p \leq$ .01), however the relationship with the second one was less significant. This can mean that the presence of those traumatic shameful events make it less likely to find *decentering* skills later in life.

Emotional memories and borderline symptomatology

The most strong correlations were found between *borderline symptomatology* and *trauma related internal shame* (r = .53; $p \leq$ .01), with a moderate positive correlation. When considering the relation between *trauma related external shame*, and *borderline symptomatology,* the correlation was also positive and moderate (r = .49; $p \leq$ .01). In relation to *memories of warmth and safeness*, there was a moderate negative correlation (r = -.48; $p \leq$ .01). The correlations suggest that when individuals experiences high internal shame, on a traumatic shameful event, highest levels of borderline symptoms are also associated. On the other hand, when someone presents *memories of warmth and safeness*, that's associated with less *borderline symptomatology*.

Decentering and borderline symptomatology

Borderline symptomatology, shows a moderate negative correlation with *decentering* (r = -.41; $p \leq$ .01), insinuating that the presence of this process, is associated with lower incidence of borderline symptomatology. In other words the lower the decentering skills, the higher are the probability of finding borderline symptomatology.

Table.4.

Correlations (two-tailed Pearson r) between trauma related internal shame and external shame, early memories of warmth and safeness; and decentering.

	BPQ	TRSI.ES	TRSI.IS	EMWSS
TRSI.ES	.49**			
TRSI.IS	.53**	.74**		
EMWSS	-.48**	-.31**	-.34**	
EQ.Dec	-.41**	-.33**	-.40**	.43**

Note. TRSI.ES = Trauma Related Shame Inventory – External Shame; TRSI.IS = Trauma Related Shame Inventory – Internal Shame; EMWSS = Early Memories of Warmth and Safeness Scale; EQ.Dec = Experiences Questionnaire – decentering.

** p ≤ .01; * p ≤ .05.

Path analyze

Taken together these findings and our hypothesis we tested a path model in which we investigated the mediational chain among emotional memories (early memories of warmth and safeness and shame traumatic memories) decentering and borderline symptoms (see Figure 2).

Therefore, we hypothesizes that early memories of warmth and safeness with caregivers, and traumatic shame memories (internal and external) are strongly related with borderline symptomatology and that effect can be buffered by decentering skills, which is a kind of metacognitive awareness characterized by the capacity to relate to negative experiences as mental events (temporary and concrete), that passes through the person's mind, without considering them necessarily true. The hypothetical model is presented on Figure.2.
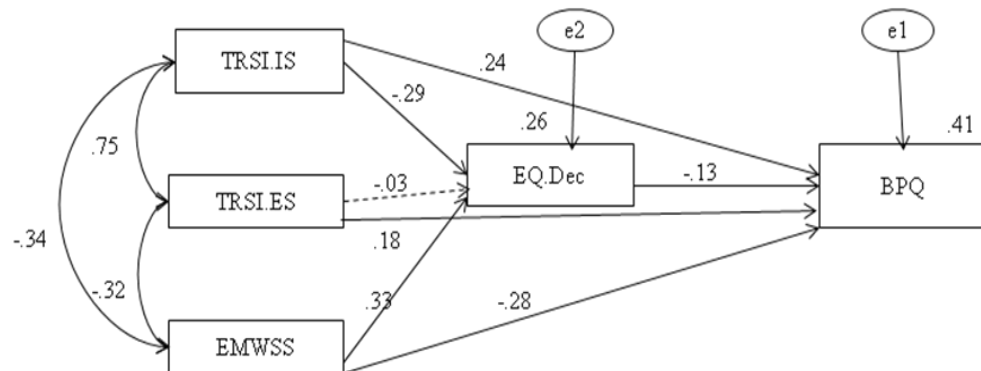

Figure 2. Theoretical model for the mediational chain between emotional memories, decentering and borderline symptomatology. Key: TRSI.IS = Trauma Related Shame Inventory – Internal Shame; TRSI.ES = Trauma Related Shame Inventory – External Shame; EMWSS= Early Memories of Warmth and Safeness Scale; EQ.Dec = Experiences Questionnaire – Decentering subscale; BPQ = Borderline Personality Questionnaire.

A mediational study was then conducted, in which we tested whether *decentering* (EQ.decentering; mediator variable) mediated the relationship between *trauma related external shame* (TRSI.ES) *trauma related internal shame* (TRSI-IS), and *early memories of warmth and safeness* (EMWSS; independent, exogenous variables) and *borderline symptomatology* (BPQ; dependent, endogenous variables). In this model all paths were statistically significant, with the exception of the direct effect of *trauma related external shame* on *decentering*. That lead to the elimination of that path, because it didn't had a significant contribution to the model ($b_{TRSI.ES.EQ.Desc}$ = -.037; EP_b = .089, Z = -.417; p= .677; $\beta_{TRSI.ES.EQ.Desc}$ = -.031). The model was then reanalyzed, allowing us to produce a final and adjusted significant model, which is presented on Figure 3, where it can be seen the estimates of the standardized path coefficients, and

the respective significant levels of the meditational model between emotional memories, decentering and borderline symptomatology.

The final model revealed significant, accounting for 41% of *borderline symptomatology* on normal population.

The data analyses showed that trauma-related internal shame, and memories of warmth and safeness during childhood, significantly predict decentering, explaining 26% (R^2=.262) of its variance, and those emotional memories along with decentering explain 41% of borderline symptoms (R^2= .412)

The results obtained show that *trauma related internal shame* (when controlling for memories of warmth and safeness) had a total effect of .283 over *borderline symptomatology*, wherein the estimation of the total effect was framed for a C.I. of 95% within the limit].232; .914[, and this effect is statistically different from zero for p = .001; with a direct effect of β = .244, for a C.I. of 95% within the limit].077; .392[, statistically different from zero for p = .003. The *trauma related internal shame* memories presented an indirect effect over *borderline symptoms*, mediated by *decentering* of .039 (β = -.293 x -.134). This indirect effect corresponds to 13,8% (.039/.283= .138) of the total effect of *trauma related internal shame* over *borderline symptoms,* which is statistically different from zero to p = .010, through *Bootstrapping method,* for a C.I. of 95% within the limit].010; .081[. The meaning of this connection is that when a person lived a traumatic internal shameful event, but has some decentering skills, that can in some way protect her from developing *borderline symptoms*. In other words, a person who experienced a traumatic event (e.g. physical assault, sexual abuse), and felt that his/her behavior during that event was reprehensible, or made wrong attributions after the event (e.g. seeing themselves as guilty), tend to experience *internal shame* related to the event, and consequently increase the levels of self-criticism, blaming himself for what happened, as a mechanism to prevent rejection by others. Our data suggest that if the person develops the capability of taking a step back from their thoughts, and observe them as temporary (decentering) and not necessarily real, they'll have less probability of developing *borderline symptoms*.

When it comes to *memories of warmth and safeness* (when controlling for the effect of trauma related internal shame) they show a total effect of -.329 over

borderline symptomatology, in which the estimation of the total effect was considered for a C.I. of 95% within the limit]-.430; -.223[; and this effect is significantly different from zero for *p* = .001; with a direct effect of β = -.284, for a C.I. of 95% within the limit]-.395; -.171[, statistically different from zero for *p* = .003. The *warmth and safeness memories* also showed a significant indirect effect over *borderline symptomatology*, mediated for *decentering* of .019 (β = .331 x -.134) representing 58% (0.19/-.329 = .577), of the total effect of *warmth and safeness memories* over *borderline symptoms,* which is different from zero to *p* = .010, through *Bootstrapping method,* for a C.I. of 95% within the limit]-.279; -.143[. This means that subjects who had less experiences of *warmth and safeness* during childhood and don't have *decentering* skills are more likely to develop *borderline symptomatology.* However if they developed *decentering* skills, even with few positive memories, they are less likely to develop *borderline symptomatology* when compared to the ones who didn't, in the same conditions.

We were still able to identify a direct effect between *external shame subscale* (TRSI.ES) and *borderline symptomatology* of .453, considering a C.I. of 95% within the limit].037; .337[, and this effect is statistically different from zero for *p* = .001; with a direct effect of β = .180, for a C.I. of 95% within the limit].094; .853[, statistically different from zero for *p* = .003.

The final model showed a very good adequacy, considering approximate fit indexes quality (χ^2/df =.174, *p* = .677; CFI = 1.00; TLI = 1.015; RMSEA = .000; *p* [rmsea ≤ .05].
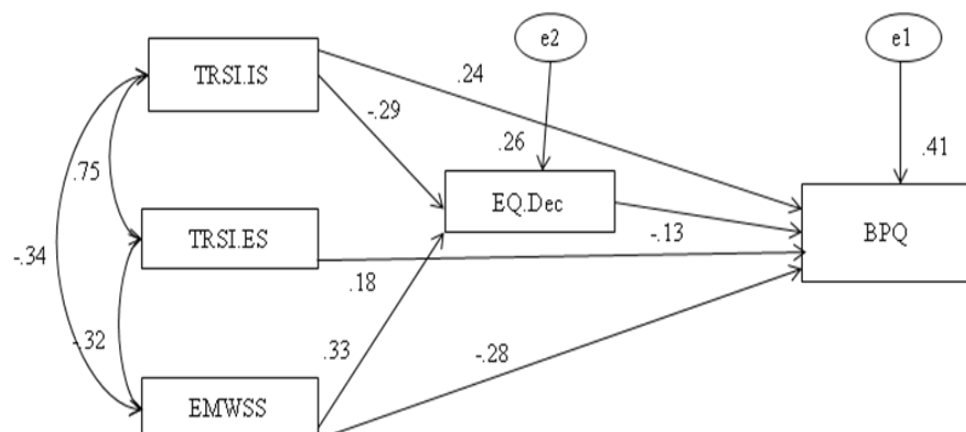

Figure 3. Final model for the mediational chain between emotional memories, decentering and borderline symptomatology. Key: TRSI.IS = Trauma Related Shame Inventory – Internal Shame; TRSI.ES = Trauma Related Shame Inventory – External Shame; EMWSS= Early Memories of Warmth and Safeness Scale; EQ.Dec = Experiences Questionnaire – Decentering subscale; BPQ = Borderline Personality Questionnaire.

V. Discussion

Several studies and empirical data have already supported that people with negative experiences with negligent and abusive caregivers, and who also experienced traumatic shameful events have propensity to develop borderline symptomatology (Baird, 2008; Freitas, 2011; Johnston, Dorahy, Courtney, Bayles, & O'Kane, 2009).

Empirical findings, suggest that the causes associated to the development of borderline personality disorder are complex and multivariate, of which the main explanation comprise genetic factors, adverse childhood experiences, and invalidating environments (Linehan, 1993; Lieb et al., 2004; Crowell, Beauchaine, & Linehan, 2009). The Linehan's biosocial model (1993), that best seem to explain the development of this disorder, points out that aversive childhood experiences might cause emotional dysregulation and impulsivity, leading to later dysfunctional behaviors and psychosocial conflicts and deficits. The author gives particular emphasis to the impact of an invalidating environment, that frequently precedes BPD, explaining how the communication of negative emotions are frequently punished in their families, which evokes a response of shame, experiencing in an intense and public way. This sequence of events causes the person to learn that the natural way to react to her own emotional responses is with shame, self-criticism, and punishment (Linehan, 1993; Rizvi & Linehan, 2005; Rüsh et al., 2007).

Borderline patients are known for experiencing enormous shame in general, and shame about their own abuse history, because they believe that some aspects of their life should remain hidden (e.g. personal characteristics, past experiences, childhood sexual abuse, or behaviors), because they are socially unacceptable (Brown, Linehan, Comtois, Murray, & Chapman, 2009; Rizvi & Linehan, 2005). Further investigation, noted that parental bonding and insecure attachment, and a perception of a relative lack of caring from one's caregiver, were also associated with borderline features, demonstrating that those variables should be taken under consideration in etiological models of BPD (Nickell, Waudby, Trull, 2002).

The current study investigated the relationships among emotional memories, considering shame related to traumatic events and memories of warmth and safeness, their connection to decentering, and the combined effect of all these variables on borderline symptoms.

Following previous research on the role of early negative experiences of shame, suggesting a strong connection to the development of borderline symptoms (Brown, Linehan, Comtois, Murray, & Chapman, 2009; Lieb et al., 2004; Linehan, 1993; Rizvi & Linehan, 2005; Rüsh et al., 2007) we began to explore the relationship between traumatic shameful memories and borderline symptoms in adulthood. Results showed a moderate positive correlation between both external and internal shame (related to a traumatic event) and borderline symptoms, with a moderate positive correlation. However the connection between borderline features and internal shame was slightly stronger. Some scientific literature already stated the importance of shame in the development of borderline features and how this self-conscious emotion, contribute to an increasing self-criticism, rumination, and severe impact on the identity and emotional stability in adult life (Brown et al., 2009; Linehan, 1993; Rizvi & Linehan, 2005; Rüsh et al., 2007; Freitas, 2011). Individuals with BPD are prone to feelings of intense shame, which they usually try to avoid or run from. The problem is that people with borderline personality have high levels of internal shame (seeing themselves as defective, undesirable and inferior) and external shame (belief that they exist in the mind of others in a negative way), which means they don't have a safe place inside or outside them, because they didn't developed self-compassion skills, and that way experiencing an extreme emotional reaction, where a slight guilt can turn into deep shame and self-hatred (Dinis, Castilho & Pinto-Gouveia, *in preparation*; Linehan, 1993; Rüsh et al., 2007; Freitas, 2011). Even so, fewer evidence talk about the relation of early experiences of shame, when related to a traumatic event (e.g. physical/sexual abuse; public humiliation, submission behavior), in which individuals saw themselves as guilty of what went wrong in an extreme situation (experiencing internal shame), possibly internalizing a negative and defective view of the self, which can prevail until the present moment. Although there are studies about the impact of shame traumatic events in normal population (Matos & Pinto-Gouveia, 2010), the connection with borderline symptoms in normal population, is yet to be proven (as far as we know). So, our findings provided further information on how people who experienced high internal and external shame, related to a traumatic event, are more prone to present borderline symptomatology in adulthood, supporting the importance of understanding the processes of shame

early in life, in order to address it in a healthier way, through better coping strategies, and promotion of self-compassion skills (Rizvi & Linehan, 2005).

Based on several literature (Freitas, 2011; Linehan, & Dexter-Mazza, 2008; Richter, Gilbert, & McEwan, 2009) it was hypothesized that low levels of memories of warmth and safeness, would be associated with higher levels of borderline symptoms. So, in accordance to our hypothesis, and previous empirical findings, subjects who recall fewer memories of warmth and safeness in childhood, and consequently feel less loved and supported, would have more probability to develop borderline symptoms (Gilbert, 2007; Linehan, 2007; Nickell, Waudby, Trull, 2002; Richter, Gilbert & McEwman, 2009).. There are quite a few studies highlighting the importance of secure and attachment relationships early in life, and how the absence of such experiences can work as a risk factor in the development of psychopathology, such as borderline personality disorder (Baird, 2008; Lieb et all., 2004; Linehan, 1993; Perry, 2002). Besides, more recent evidence point to the importance of felling warmth, safe, being loved, and chosen by others (e.g., caregivers, friends, lovers) for important social roles, in developing feelings of safeness, connectedness and a sense of belonging during childhood (Gilbert, 2010; Lieb et al., 2005), mainly in individuals with high self-criticism and shame (Gilbert et all., 2006; Richter, Gilbert, & McEwan, 2009), such as borderline personality disorder (Linehan, & Dexter-Mazza, 2008; Freitas, 2011). The main contribution of our results, is showing that few memories of caring and loving during childhood, are related to higher levels of borderline symptoms, and oppositely recalling positive and warmth memories during that period, seem to protect somehow the development of those borderline traits.

Memories of warmth and safeness, also showed to be negatively correlated with both external and internal shame (related to trauma), even thought the value was low. The low variance shared by these recollections of emotional memories in childhood suggests that they are both important but distinctive memories. As far as we could find in our literature research, there are no clear connections between these variables, however, the most important thing to retain, is that the presence of high internal and external shame (on traumatic events), and the absence of early memories of warmth and safeness, are both related to a high probability to find borderline symptoms, suggesting these variables can comprise

distinct risk factors to this disorder, which will be better explained more ahead.

Based on our literature review (Baer & Sauer, 2011; Morton, Snowdon, Gopold & Guymer, 2012; Teasdale et al., 2002), our hypotheses proposed decentering will be associated to lower levels of borderline symptomatology, and higher levels of warmth and safeness experiences. The results of our study supported the proposed hypotheses, revealing a moderate negative correlation between decentering and borderline symptomatology. These findings insinuate that the presence of skills which allow taking a step back from one's mind can in some way protect the person from developing borderline symptoms. On the contrary, the correlation between decentering and memories of warmth and safeness proved to be moderate and positive, suggesting that one can possible facilitate the development of the other. In other words, it seems that someone who had good experiences of acceptance, loving and safeness, will be more prone to develop the capacity of decentering, which also seem to work as a protective factor, being this way associated with lower levels of borderline symptoms. The importance of this findings are enormous, because although there are some studies who talk about rumination in borderlines, and how some treatment involving decentering techniques can be advantageous, the evidence supporting it is scarce, and no studies we found, related simultaneously decentering and early memories of warmth and safeness.

Finally our predictions in relation to decentering and internal and external shame in traumatic events during childhood, foresaw a negative correlation between them. Our outcomes met those expectations, revealing a moderate negative correlations between both external and internal shame and decentering. Internal shame however revealed a more prominent connection to decentering. This evidence suggest that living a traumatic event early in life, which caused feeling of internal shame, possibly seeing the self as guilty, defective or even feeling ashamed for his/her behavior in that situation, together with the experience of external shame (existing in a negative way in the minds of others), difficult the development of the capacity to detach from negative and ruminative thinking about painful situations, almost certainly maintaining high levels of self-criticism, and low shame threshold. This study makes a significant contribution in decentering research field, because few studies have related these variables.

Taken together these results and the aforementioned hypothesis, we tested a

path model in which we investigated a meditational chain among emotional memories, decentering and borderline symptoms. Path analyses results showed that internal shame resulting from traumatic memory and early memories of warmth and safeness predicted elevated borderline symptoms through decentering skills. So, decentering partially mediated the effects of emotional memories upon borderline symptoms. However it is important to underline that early memories of warmth and safeness showed the strongest total effect with borderline symptoms, enhancing the importance and maybe determinant role played for this variable, enlightening the fact that the absence of positive and warmth memories, and feeling loved and secured by caregivers, is related to less decentering skills, and consequently increases the likelihood of presenting borderline features. Richter, Gilbert and McEwan (2009), demonstrated that remembrance of positive emotional memories, (feeling warmth, safe, and cared for as a child), was significantly and negatively associated with psychopathology (e.g., depressive symptoms) and positively related to a disposition to experience positive affects (e.g., of safeness, warmth and security), and our study gives some further evidence supporting their research, and adds new information regarding borderline symptoms, and warmth and safeness memories on a Portuguese normal sample.

Several empirical evidence support that neglectful, rejecting, shaming, critical and abusive experiences undermine the development of the affiliative-soothing system (Gilbert, Baldwin, Irons, Baccus, & Clark, 2006), and potentiate the vulnerability to mental health problems such as BPD (Liotti, 2002; Linehan, 1993). The consequences of the under stimulation of that system early in life, reflects on compromised physiological and emotional regulation, which makes those subjects less able to articulate positive self (as lovable and worthy) and others (as soothing and reassuring) schema and to self-soothe when facing distress, thereby developing high levels of self-criticism (Gilbert, 1998; Gilbert, & Irons, 2005; Gilbert & Procter, 2006). Bearing in mind all these research facts, and our own results, we can assert that knowing the vulnerabilities and impairments underlying borderline features, and through empirical data supporting that self-compassion, acceptance and decentering skills can help diminish self-criticism and rumination (Gilbert et al., 2006; Gilbert & Procter, 2006; Morton, Snowdon, Gopold & Guymer, 2012; Teasdale et al., 2002) it is

essential to include a set of skills training in borderline treatment, that cover all those features (Segal, Teasdale, & Williams, 2004; Watkins, Teasdale, & Williams, 2000). Mindfulness also have been showing good results by increasing awareness, attention, and acceptance of ongoing experience, thus fostering emotional processing, distress tolerance, thus, an individual can become more aware of urges to engage in impulsive behavior and view that behavior as one possible response option, in opposition to seeing as the only option of response (Soler et al. 2012; Wupperman, Neumann, Whitman, & Axelrod, 2009). In the same page, also Acceptance and Commitment Therapy is showing some promising results, in a study where it was tested a structured 12 two our sessions program, that when compared to "treatment as usual" showed better outcomes, showing more psychological flexibility and adequate emotion regulation (Morton, Snowdon, Gopold, & Guymer, 2012).

Summarizing, our hypothesis were corroborated in the case of the internal shame (trauma related), and more expressly in the relationship between early memories of warmth and safeness and borderline symptomatology, showing that in the presence of decentering capacities, the subjects who had negative childhood experiences (trauma related shame and few memories of warmth and safeness), would cope better with those experiences, and consequently are less likely to develop borderline symptoms. Our findings meet several studies who have already said that decentering is protector of rumination processes that are highly associated with psychopathology and BPQ, in particular (Baer et al., 2012; Freitas, 2011; Fresco et al. 2007; Linehan, & Dexter-Mazza, 2008; Morton, Snowdon, Gopold & Guymer, 2012), but this mediator effect, as far as we know, have never been established before.

These findings are in line with previous research emphasizing the importance of the quality of early interactions with significant others and the necessity to learn decentering skills (meaning less rumination) and the role of those competences in decreasing their vulnerability to develop psychopathology (Linehan, 1993; Liotti, 2002; Morton, Snowdon, Gopold & Guymer, 2012, Soler et al. 2012; Upton, 2011). These study even shed some new highlights to the relevance of early memories of warmth and safeness and decentering as protective factors of borderline personality disorder, suggesting that they can be important tools in the therapeutic process of BPD.

In conclusion, this study provided more empirical support to some previous findings about the impact of early traumatic shameful events on adult life, and also the importance of having a nurturing and secure environment during childhood, since the absence of that sort of experiences seem to favor the development of borderline symptomatology. Our results also highlight to the mediator and protective role of decentering between those emotional memories, and the presence of borderline features later in life. For all we kwon, no other study stated these associations when considering the described variables, contributing this way with crucial new and valuable information, for clinical implications and future research.

VI. Clinical implications

Although the present study has some limitations, it intends to understand more deeply the contribution of some emotional memories during childhood, such as warmth and safe memories with caregivers, generally associated with acceptance and comprehensive environments, and shameful memories of traumatic events (experiencing external and internal shame) and their implications in borderline symptoms, and the protective role of decentering.

Our findings have some implications for therapy. The current research contributed with some valuable information to apply in the clinical set, by showing that decentering can be a mediator variable in the development of borderline symptomatology, suggesting that the training and exercises of decentering can be useful as a coping mechanism in emotional dysregulation and ruminating tendency, and it is an essential tool to add to the psychotherapeutic process, when dealing with people more vulnerable and prone to borderline symptoms (Fresco et al., 2007; Morton, Snowdon, Gopold & Guymer, 2012; Pinto-Gouveia, Gregório, Duarte, & Simões, sd; Soler et al., 2012; Teasdale et al., 2002).

This study also highlights the role of early memories of warmth and safeness, and how they can work as protective factor in developing borderline symptoms. It is equally important to reflect about the impact of the absence of those experiences, and the harmful effect that can have in one's identity, along with traumatic shameful events, which exacerbate the probability to present borderline features. For clinicians, this knowledge could help address some

specific problems in therapy, when identifying high levels of shame, or detached relationships with caregivers.

However, more studies about decentering and it's efficacy need to be done, both in normal population and clinical population with borderline personality disorder.

Limitations and future research

There are a number of limitations in this study. First, this is a cross-sectional study, and although we used a robust statistical procedure that tests hypothesized causal relations among variables, no strong causal conclusions can be drawn from our results. Future prospective studies should further clarify the causality and direction of the relationships among these variables.

It would also be interesting to see how some of the variables addressed here behave in different age groups, adolescent, and older adults, to see if there were significant differences. However, considering the few studies exploring borderline symptoms in normal population, this study brought a positive contribution.

Another indentified limitation was the fact that when participants were requested to evoke experiences from their childhood or adolescence (in TRSI self-report questionnaire) there might have brought along the limitations of this type of measure, on one side the prospect of selective memories in their retrospective report can have some influence in the outcomes, and on the other side, there was some feedback of some participants who filled up the forms, saying that they didn't recall any experience, or that the ones they recalled didn't fit in some of the questions. Future research might benefit from the use of other non self-report instruments (such as, structured interviews).

For future research it would also be interesting to study some additional processes which were indentified during the literature review, which emphasized the benefits as skills as self-compassion, acceptance and mindfulness. The importance of self-compassion have already been referred as extremely important in intervention focused on highly self-critical subjects (such as borderline), suggesting that those people will be less self-compassionate. Further exploration of mindfulness skills, along with decentering could bring interesting and useful information on borderline related impairments and how to deal with them.

Study 2.

Understanding how alexitimia and dissociation leads to borderline symptomathology: a pilot study in a clinical and non-clinical sample.

Resumo

A alexitimia e a dissociação são dois construtos que têm sido relacionados com a perturbação da personalidade, e existem opiniões contraditórias acerca da associação entre as duas variáveis, havendo estudos que já comprovaram a sua associação.

As capacidades de descentração e o mindfulness têm-se verificado ferramentas úteis na intervenção em algumas perturbações, caracterizadas por elevado auto-criticismo e elevados níveis de ruminação. Sendo estas características dos borderlines, estudos sugerem que este grupo apresenta baixas capacidades de descentração e mindfulness.

Este estudo foi dividido em dois, e foi hipotetizado que no estudo 1 encontraríamos uma correlação positiva entre a alexitimia e a dissociação, estando estas igualmente correlacionadas com a PBP, e ainda que estas variáveis predizem a sintomatologia borderline. No estudo 2 hipotetizamos que existem diferenças significativas entre a amostra clinica (PBP) e não clínica, esperando que a amostra clinica revele níveis mais elevados de alexitimia, dissociação e psicopatologia, e menores na descentração e mindfulness.

Todas na nossas predições se confirmaram, vericando-se correlação moderadas positivas entre a sintomatologia borderline, alexitimia, e dissociação e um efeito preditor da sintomatologia borderline das mesmas. As diferenças entre o grupo clinico e não clinico verificaram-se na direcção esperada.

Palavras Chave: Alexitimia, dissociação, ansiedade, depressão, mindfulness, descentração, perturbação borderline da personalidade.

Abstract

Alexithymia and dissociation are two constructs which have been related to borderline personality disorder, and there are contradictory opinions about the association between these variables, and some studies already proved their association.

Decentering skills and mindfulness practice have been showing to be useful as an intervention tool in some disorders, characterized for high self-criticism and high levels of rumination. These are typical borderline characteristics, which is why some studies suggest that this group presents low decentering and mindfulness skills.

This study was divided in two, in study 1 was hypothesized that we would found a positive correlation between alexithymia and dissociation, being equally correlated to borderline symptoms, and those two variables would also predict borderline symptoms. In study 2 we hypothesized that there are significant differences between a clinical sample (BPD) and a non-clinical sample, hoping to find higher levels of alexithymia, dissociation and psychopathology, and lower levels of decentering and mindfulness.

All our predictions were confirmed, showing positive moderate correlations between borderline symptoms alexithymia and dissociation, and the predictor effect of both. The differences between the clinical group and the non-clinical happened in expected direction.

Key words: Alexithymia, dissociation, anxiety, depression, mindfulness, decentering, borderline personality disorder.

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I. Introduction

Borderline Personality disorder (BPD) is by far one of the personality disorders (PD) that had greater prominence among scientific research and empirical studies, being one of the most common psychopathologies in health services, both in outpatients and inpatients, rounding 10 to 19 % respectively (Linehan & Dexter-Mazza, 2008; Rathburn, 2002, *cit in* Freeman, Stone, & Martin, 2005; Skodol et al., 2002; Zimmerman, Rothschild & Chelminsky, 2005).

Severe functional impairment is associated to Borderline Personality Disorder, also characterized by high rates of comorbidities with other psychiatric disorders, and elevated risk for completed suicide (Skodol et al., 2002). This disorder is characterized, in Linehan's (1993) *Biopsychosocial* model, by a high instability, which seems to be transversal to several areas in the person's life, causing distress and impaired functions. The dysregulation in BPD cover: *the affective area* – characterized by instability, high emotional reactivity, and also intense and inappropriate rage; *behavioral area* – high impulsivity in at least two dimensions, potentially self-harming (self-injury, or recurrent suicidal attempts); *interpersonal area* – exceeded effort to avoid real or imagined abandonment, and an insecure and ambivalent interpersonal pattern (fluctuating between idealization and devaluation of others); *cognitive area* – transitional paranoid ideation and severe dissociative symptoms; and *self-dysregulation* – identity disorder, instability on self-image and chronic feelings of emptiness (Swales, Heard & Williams, 2000; Paris, 2008). This personality disorder has very high chronicity rates, and is frequently described as untreatable, because the psychotherapy process is slow, and the improvements are few with a high dropout rate. (Freitas, 2011; Linehan, 1993; Linehan & Dexter-Mazza, 2008).

These patients are major consumers of health care resources, which mean a huge economic burden for these services (Soeteman, Roijen, Vecheul, & Busschbach, 2008). Despite most studies support that rates of this disorder in general community round 1-2% (APA, 2006; Coid, Yang, Tyrer, Roberts, & Ullrich, 2006), a recent survey with 34600 participants (in USA) revealed a prevalence of 5,9% subjects with Borderline Personality Disorder, confirmed through semi-structured interviews (Zanarini et al., 2011). That same study (Zanarini et al., 2011) supported that is frequent to find comorbidities between BPD and Axis I, finding that the more common include: anxiety disorders (panic

disorder, generalized anxiety), mood disorders (dysthymia, bipolar I and II, impulse control disorder), intermittent explosive disorder, attention deficit hyperactivity disorder, substance abuse and substance dependence disorder. Some other studies also supported these results, adding the comorbidity with major depression, eating disorders and posttraumatic stress disorder (Pagura et al., 2010, Wong et al., 2010). When considering axis II personality disorders, the ones that seem to be more frequently related with BPD are: obsessive compulsive disorder, dependent disorder, paranoid and anti-social disorder (Lenzenweger, Lane, Loranger, & Kessler, 2007; Paris, 2008; Zanarini et al., 2011). However, these researchers alert to the possibility that the high comorbidities can be due to the overlap of some symptoms, and not necessarily the presence of several diagnosis.

This personality disorder has very high chronicity rates, and is frequently described as untreatable, because the psychotherapy process is slow, and the improvements are few with high dropout rates. (Freitas, 2011; Linehan, 1993; Linehan & Dexter-Mazza, 2008). The difficulty in achieving successful psychotherapeutic results with BPD patients are well known (Linehan & Dexter-Mazza, 2008; Zanarini et al., 2011). The reasons presented for that to happen include emotional and behavioral dysregulation, but some authors also relate to alexithymic traits, which seem to be related to a detached attitude in psychotherapeutic process (Blais, 2010; Ogrodniczuk, Piper & Joyce, 2004; Paris, 2008).

Alexithymia

A poor emotional awareness and difficulties in identifying and describing emotions have been defined as alexithymia (Nemiah & Sifneos, 1970, citted in Nicoló et al, 2011). Emotions are considered an evolutionary selected basic aspect of human functioning, and understanding what one is feeling and being able to communicate those feelings is adaptive and necessary for a healthy coexistence with others (Nicoló, et. al., 2011). When someone doesn't have those skills, it's expected to present more difficulties regulating their own emotions, and controlling impulses (Webb & Mcmurran, 2008). This construct includes different facets, namely: difficulties identifying feelings and distinguishing them from somatic sensations; difficulties describing feelings to others; and externally oriented style of thinking (Maaranen et al., 2005).

Alexithymia is linked to heightened levels of psychiatric symptoms (Parker et al., 2008), namely pathological dissociation, suicidality, and borderline personality disorder (Maaranen et al., 2005; Webb & Mcmurran, 2008). Shortening up, alexithymia is related to a combination of interpersonal dysfunctions, a wide array of symptoms and poor regulation of impulses, all problems which are hallmarks of personality disorders, such as BPD (Nicoló, et. al., 2011; Webb & Mcmurran, 2008). Zlotnick, Jill, and Zimmerman (2001) findings also support that borderline personality disorder (BPD) contribute independently to a high degree of alexithymia.

Alexithymia and dissociation

Alexithymia seem to be related with dissociative phenomena, which is considered to serve as a defense mechanism against intolerable, trauma-associated memories and feelings, resulting in some sort of disintegration of consciousness, memory, identity and perception (Burch, 1995; Grabe, Spitzer, Freyberger, 2001; Spitzer et al., 2006). Several studies have proven these relation to be very strong in normal and clinical population, namely in BPD patients (Burch, 1995; Korzekwa, Dell, Links, Thabane, & Fougere, 2009; Stiglmayr, Shapiro, Stieglitz, Limberger, & Bohus, 2001), which is also acknowledged by *DSM–IV*, which lists "severe dissociative symptoms" as one out of nine diagnostic criteria for BPD (APA, 2006). However, some other studies fail to find a connection between these two variables, emphasizing the necessity of more empirical studies (Wise, Mann & Sheridan, 2000; Zlotnick et al., 1996).

Empirical studies suggest that alexithymia it's a trace of personality, stable in time, which makes people more vulnerable to develop high emotional dysregulation and impulsive behavior, and dissociation emerges as an emotional regulation strategy, that tries to outline those unbearable feelings (Korzekwa et al. 2009; Spitzer et al., 2006). Grabe et al. (2001), showed that dissociation has a strong positive correlation with alexithymia (TAS-20 total score), and in particular with factors "Difficulty identifying feelings" and "difficulty expressing feelings". Posterior findings have supported this relation (Maaranen et al., 2005), and these results where proved in clinical and nonclinical samples, but the correlations between alexithymia and dissociation considered pathological, were stronger (Nicoló et al., 2011). We hope to verify if that relation is also present in

our normal sample.

Alexythimia, Dissociation and Borderline personality disorder

The relationship between alexithymia and BPD suggest that difficulty identifying, and communicating emotions and feelings (somatic sensations) impairs ability to regulate emotions, therefore increasing affect dysregulation (Webb & Mcmurran, 2008). That fact seems to be related to dissociation in this population, considering that when BPD patients are distressed they sometimes dissociate as a way to run from intense and unbearable emotions (Dijke, Hart, Ford, Son, Heijden, & Bühring, 2010).

Mindfulness and Decentering

Although there are several definitions of Mindfulness, the one that seems to gather more consent describes it as an act of intentionally paying attention in a particular way, in the present moment and nonjudgmentally (Kabat-Zinn, 1994, cited in Rizvi, Welch, & Dimidjian, 2009). Essentially mindfulness is defined as keeping one's consciousness alive to present reality (Brown & Ryan, 2003). In borderline personality disorder, they clearly report a lack of awareness of their internal experience, and try at all costs to avoid it (e.g. self-injury, dissociation), that's why some authors that study this psychopathology, such as Linehan (1993), have introduced Mindfulness as a core component of dialectical behavior therapy (to treat mainly chronically suicidal subjects and BPD), which has been showing great outcomes and better results than previous approaches. Different studies have demonstrated that subjects with BPD in general have fewer mindfulness skills than normal population, and it was also observed that the ability to describe and to act with awareness increased in BPD patients after DBT intervention (Hill, 2010; Morton, Snowdon, Gopold and Guymer, 2012; Nicastro, Jermann, Bondolfi, & McQuillan, 2010; Wupperman, Neumann, & Axelrod, 2008; Wupperman et al., 2009). Recent findings also indicate that mindfulness is a good predictor of emotional awareness, and borderline features on the other hand are related to more lability and less mindfulness tendencies (Hill, 2010). Therefore in our study we hypothesize that BPD patients will present lower levels of mindfulness than normal population.

Mindfulness is also a facilitator of decentering, defined as the capacity to

step back mentally from automatic thoughts and reactions and respond more flexibly (Teasdale et al., 2002), which can help manage negative thoughts and subsequent emotional dysregulation (Morton, Snowdon, Gopold & Guymer, 2012; Segal, Teasdale, & Williams, 2004; Watkins, Teasdale, & Williams, 2000).

II. Aims

Considering all the theoretical support here described, we decided to explore borderline features both in clinical and non-clinical sample, along with several other constructs such as: alexithymia, dissociation, psychopathological symptoms (depression and anxiety), decentering and mindfulness.

For that purpose we decided to divide our investigation in two studies:

Study 1: Study of the relationship between alexithymia and dissociation in a non-clinical sample, and borderline symptomatology:

This study hypothesize that there will be positive correlations between dissociation and alexithymia. It's also expected that borderline symptoms present positive correlations with dissociation and alexithymia.

Another hypothesis is that alexithymia and dissociation predict borderline symptoms, meaning that the presence of alexithymia and dissociation increases the probability of developing borderline symptoms.

Study 2: Comparison study between a clinical sample of patients with BPD, and a non-clinical sample, considering the following variables: alexithymia, dissociation, psychopathological symptoms (depression and anxiety), decentering and mindfulness:

Considering the comparison between clinical and non-clinical group we hypothesize that significant differences will be found concerning all variables in study. We hope to find higher levels of alexithymia, dissociation and psychopathology (depression and anxiety) in borderline clinical sample, than non clinical.

When comparing mindfulness and decentering levels, we hypothesize that non-clinical sample, will present higher levels on both variables.

IV. General Methodology

Participants

General population

The empirical studies were conducted in multiple samples, of which a full description regarding sociodemographic variables is given in each study. Study 1 was conducted in a sample of 207 participants from the general population, who filled the questionnaires online. For the study 2, we collected a sample of 50 individuals from the general population, with the purpose of creating a comparison group, with similar sociodemographic characteristics to the clinical sample.

Clinical sample

The clinical sample was composed of 20 patients, all of which met criteria for Borderline Personality disorder. The inclusion criteria and socio-demographic characteristics are presented in Study 2.

Measures

Two types of assessment instruments were used in this research project: (1) structured clinical interviews to establish diagnosis categories in the clinical sample according to the DSM-IV (APA, 1994) criteria (only in Study 2) and self-report questionnaires to evaluate psychopathological symptoms (anxiety and depression), alexithymia, metacognitive awareness and affect regulation constructs (both studies).

In each study we briefly describe the structured clinical interviews used and summarize the set of self-report measures applied in that study.

III. Study 1 – *Study of the relationship between alexithymia and dissociation in a non-clinical sample, and borderline symptomatology*

4.1. Method

4.1.1. Participants

In this study the sample was constituted by 207 Portuguese subjects recruited from the general community population from all over the country. The higher percentage in gender were females, constituting 76,3 % ($n = 158$), with a

mean age of 27.75 (SD = 8.29) and 23,7% males (n = 49), with a mean age of 28.98 (SD = 8.18).

Most of the participants were single, 75,4% (n = 156), 9,7 were married (n = 20), and the same percentage were living together with their partner (unmarried couple) (n = 20). The socioeconomic category, based on the professions (e.g. unemployed, call center assistant) of 68,6% of the participants is considered low, and 26,1% were medium. Considering the most high level of schooling achieved, a big percentage (44,9%; n = 93) has a Bachelors or Graduate Diploma (3/5 years), and 25,6% has a master or a PHD (n = 53). Seventeen per cent has secondary Education (or equivalent) finished (n = 35). No significant differences were found between males and females on the research variables (see Table 1), so the data analysis considered only one group.

4.2. Analytic strategy and procedure

This study followed a cross-sectional design. Pearson matrice correlations were made to analyze the association between alexithymia, dissociation, both depressive and anxiety symptoms and also borderline symptoms. Simple linear regression analysis models were conducted in order to analyze the variables that influence the variance of borderline symptomatology. The sample of this study was gathered online, using an online platform (Google docs), in which some self report questionnaire (described bellow) were introduced integrally, and then a link was spread and publicized across several internet forums and institutional websites, through social networks and also by email. This link allowed people to fill up the questionnaires here described, and all the participants completed a battery of self-report questionnaires, after reading a small written introduction referring the aims of the study, and it was explained that their co-operation was voluntary and their answers were confidential and only used for the purpose of the study.

4.3. Measures

The Toronto Alexithymia Scale – 20. The TAS-20 (TAS-20 (Bagby et al., 1994; Portuguese version: Prazeres, Parker, & Taylor, 2000) is a 20-item questionnaire that assesses alexithymia. It consists of three subescalas: Difficulty identifying feelings; difficulty describing feelings; and externally oriented thinking style. The TAS-20 is a valid, widely used and reliable measure of

alexithymia, presenting a good internal consistency (Cronbach's α = .75) in the Portuguese version. The present study obtained a Cronbach's α of .77.

Dissociation Experiences Scale – The DES Carlson & Putnam, 1993; Portuguese translation and adaptation by Dinis, Matos, & Pinto Gouveia, 2008) is a scale that measures dissociative experiences, composed by 28 items. These items related to dissociative phenomena in daily life items are rated on a scale from 0% (*never*) to 100% (*always*), corresponding to the frequency in which those symptoms are experienced. Examples of such phenomena include feelings of depersonalisation, derealisation, and psychogenic amnesia. It has good to excellent test–retest reliability and internal consistency (Cronbach's a = .90; Carlson & Putnam, 1993). DES is intended to be a screening test, since only part of patients with scores over 30 were diagnosed with having Dissociative Identity Disorder. Thus patients with scores above normal (higher than 30) should suffer further evaluation (Carlson & Putnam, 1993). In our study we obtained an excellent internal consistency, with a Cronbach's α of .94.

Psychopathology

Depression, Anxiety and Stress Scales (DASS-42; Lovibond & Lovibond, 1995; Portuguese translation and adaptation by Pais-Ribeiro, Honrado, & Leal, 2004) is a self-report measure originally composed of 42 items and designed to assess three dimensions of psychopathological symptoms: depression, anxiety and stress. In this research, we used the shorter version with only 21 items, and we were interested on the depression and anxiety subscales. The items are rated on a 4-point scale (0-3), and the items indicate negative emotional symptoms. On the original version, Lovibond & Lovibond (1995) found the subscales to have high internal consistency (Depression subscale Cronbach's α = .91; anxiety subscale Cronbach's α = .84; Stress subscale Cronbach's α = .90). In the present study, the three subscales also shown good internal consistency (Depression subscale Cronbach's α = .88; anxiety subscale Cronbach's α = .86; Stress subscale Cronbach's α = .87).

Borderline Personality Questionnaire – BPQ; (Poreh et al., 2006; Portuguese version: Pinto-Gouveia, & Duarte, 2007). The *BPQ* is a self report measure, design to assess borderline personality traits, based on DSM-IV (APA,

1994) criteria for this disturbance and is constituted by 80 dichotomous items (No=0; Yes=1), organized in 9 subscales, corresponding to those criteria. In the study of the original version the authors (Poreh et al., 2006) validated the psychometric properties of the BPQ, and it presented a good internal consistency in the total scale, and reasonably good in the subscales. In this study, we obtained an excellent Cronbach' alpha, of .95.

4.4. Analytical Strategy

This study used a cross-sectional design. We used independent samples t Tests to estimate mean differences between two independent groups. All the necessary assumptions for appliance of these statistical tests were taken under consideration (distribution analyses and homogeneity of variance). We considered statistically significant mean differences with $p \leq .050$ (Howell, 2007; Maroco, 2010). There were performed Pearson product-moment correlations to explore the relationships between *alexithymia, dissociation, psychopathology (anxiety and depression)* and *borderline symptomatology* variables. In the interpretation of correlation coefficients' magnitude, the cut points proposed by Pestana and Gageiro (2003), were followed (i.e., very low: r from 0 to .19; low between .20 and .39; moderate: r from .30 to .69; high between .70 and .89 and very high: $r < .90$).

These data analyses were conducted using PASW (*Predictive Analytics Software*), version 20 (SPSS Inc., Chicago, IL, USA) for PCs.

V. Results

Preliminary analysis

The normality of the variables was analyzed with the Kolmogorov-Smirnov test, as well as the bias in relation to mean, through the Skewness and Kurtosis coefficients. The statistical test that were used are particularly robust to the infraction of normality, considering that the variables in study distribution are not extremely skewed or flattened, and the normal sample is not to small (n < 30). The outliers analyses was made using the graphic representation of the results (Extremes Diagram and Box-and-whisker Plots). The assumptions for the realization of regression analyses were validated concerning normality (through the K-S test, and Skweness and Kurtosis values), the homogeneity (through the

analyze of the normal probability graphic) and the independency of the residue (using Durbin-Watson statistic). It was not confirmed any evidence of multicollinearity between variables (VIF<5).

Descriptives

The means and standard deviations of this study are presented on Table 1, along with *t test* values, showing that there are no significant differences between genders.

Table 1: Means (*M*) and standard deviations (*SD*) for all subjects (*N* = 207) and *t*-test differences between males (*n* = 49) and females (*n* = 158)

	Total (*N* = 207)		Male (*n* = 49)		Female (*n* = 158)			
	M	*SD*	*M*	*SD*	*M*	*SD*	*t*	*p*
Psychopathology (DAAS)								
Depression	12.11	10.9	11.94	4.17	12.16	4.59	-.323	.748
Anxiety	10.91	3.95	10.92	3.75	10.90	4.02	.021	.983
Stress	14.01	4.62	13.18	3.90	14.27	4.08	-1.61	.111
TAS.20.Total	46.57	12.95	45.35	12.33	46.95	13.15	-.782	.437
TAS.20.F1	15.42	6.5	14.42	5.88	15.73	6.68	-1.308	.194
TAS.20.F2	12.68	5.07	12.43	5.19	12.77	5.05	-.400	.690
TAS.20.F3	18.46	4.18	18.49	4.36	18.46	4.14	.048	.962
DES-II	48.11	38.97	49.73	45.47	47.65	36.87	.292	.771
BPQ	21.33	14.73	19.10	14.30	22.03	14.83	-1.141	.218

Note. DASS = Depression, Anxiety and Stress Scale; TAS.20 = Toronto Alexithymia Scale.20 items; DES-II = Dissociation Experiences Scale; BPQ = Borderline Personality Questionnaire.

Correlational Analysis

In Table 2 is possible to observe all the correlations between *alexithymia* and *dissociation*, and their association with *borderline symptoms*.

Table.2.

Correlations (two-tailed Pearson r) between dissociation; alexithymia factors, borderline symptoms; anxiety and depression.

Variables	BPQ	.Depression	Anxiety	DES-II
TAS.20.Total	.60**	.51**	.47**	.40**
TAS.20.F1	.65**	.57**	.53**	.40**
TAS.20.F2	.46**	.41**	.34**	.35**
TAS.20.F3	.29**	.33**	.40**	.19**
BPQ		.65**	.56**	.42**

Note. DASS = Depression, Anxiety and Stress Scale; TAS.20 = Toronto Alexithymia Scale.20 items (F1-Difficulty identifying feelings; F2 - Difficulty describing feelings; and F3: Externally oriented thinking style; DES-II = Dissociation Experiences Scale; BPQ = Borderline Personality Questionnaire

** $p \leq .01$; * $p \leq .05$.

Alexithymia and Dissociation

The total of *alexithymia* showed a moderate positive correlation with *dissociation* ($r = .41$; $p \leq .01$), When it comes to the alexithymia factors, the F1 (Difficulty identifying feelings) and F2 (Difficulty describing feelings) are the ones with stronger correlations with *dissociation* (F1: $r = .40$; F2: $r = .36$; $p \leq .01$).

Alexithymia, Dissociation, Psychopathology and Borderline symptoms

The correlation between *borderline symptoms* and *alexythimia scale* revealed a moderate and positive association ($r = .60$; $p \leq .01$), noting that F1 of *alexithymia* clearly stood out, showing also a moderate positive correlation ($r = .65$; $p \leq .01$). *dissociation* also showed a moderate positive correlation with *borderline symptoms* ($r = .43$; $p \leq .01$), along with *anxiety* ($r = .56$; $p \leq .01$). *Depression* moderate positive correlation with *borderline symptoms* ($r = .60$; $p \leq .01$) as well.

However, the present study also aimed to investigate if this connection stood significant, when controlling for anxiety and depression symptoms. Thereby we conducted partial correlations calculations, verifying as hypothesized, that independently from anxiety and depression (when controlling for their effect),

alexithymia is still associated with high levels of dissociation.

To realize if depression and anxiety explained the correlations of the other variables, we did a partial correlation controlling for depression and anxiety, and the correlations still presented significance levels. We observed significant partial correlation between dissociation and factor 1 of alexithymia ($r_{parcial}$=.266; p< .001), and factor 2 ($r_{parcial}$=.253; p< .001). Significance levels were also verified between borderline symptoms and alexithymia factor 1, ($r_{parcial}$=.451; p< .001), factor 2 ($r_{parcial}$=.287; p< .001), and factor 3 ($r_{parcial}$=.225; p< .01), were also verified. When considering the partial correlation between dissociation and borderline symptoms, the significance was also maintained ($r_{parcial}$=.282; p< .001).

Hoping to better understand these results, we conducted a multiple regression analysis, using dissociation, and alexithymia factor 1 (difficulty identifying emotions) and 2 (difficulty describing emotions) to predict borderline symptomatology (see Table 3). These variables statistically and significantly predicted *borderline symptomatology* (R^2 = .461, $F_{(3, 203)}$ = 57.98, p <.001), accounting for 45% of the variance.

Table 3:

Regression analysis using *dissociation* (DES-II), and *alexithymia* factors [F1-Difficulty identifying feelings (TAS.F1); and F2: difficulty describing feelings (TAS.F2)] (independent variables) to predict BPQ *borderline symptomatology* (dependent variable) (Standard method)

Predictors	R	R^2	F	β	P
Model 1	.679	.461	57.98		
DES-II				.185	.001
TAS.F1				.542	.000
TAS.F2				.060	.897

Note. DES-II = Dissociation Experience Scale; TAS.F1 = Toronto Alexithymia Scale factor 1: Difficulty identifying feelings; TAS.F2: Difficulty describing feelings.

VI. Study 2 - *Comparative study between a clinical sample - patients with Borderline Personality Disorder – and a non-clinical sample, considering dissociation and alexithymia, psychopatholog, mindfulness and decentering.*

VI. Method

6.1. Participants

Non-Clinical Sample

The non clinical sample, collected from general community was constituted by 50 subjects, with 68% females, (*n* = 34), with a mean age of 27.38 (*SD* = 6.03) and 32% males (*n* = 16), with a mean age of 26.81 (*SD* = 6.28). The majority of the participants were single, 82% (n = 41), three subjects were married, and 10% were living together with their partner (unmarried couple) (n = 5). In relation to socioeconomic category, based on the professions (e.g. unemployed, call center assistant), we found that 72% of the participants showed low socioeconomic level, and 12% were medium. Considering the most level of schooling achieved, 18% (*n* = 9) has a Bachelors or Graduate Diploma (3/5 years), and 42% (*n* = 21) took a Technical training or was (at the time) attending higher education, and 26% finished Secondary Education (or equivalent) (*n* = 13).

Clinical Sample

This sample were constituted by 20 subjects diagnosed with *Borderline Personality Disorder*, and the subjects were mostly females 90% (*n* = 18), with a mean age of 27.72 (*SD* = 7.33) and there were two males (10%), with a mean age of 33.5 (*SD* = 6.36). Most of the participants were single, 85% (n = 176), and 15% were married. The socioeconomic category was considered low for 95%, because these subjects were all unemployed or studying. Considering the level of schooling, four took a Technical training or was attending higher education, five had finished Secondary Education (or equivalent), and nine had the 9th year of basic school or less.

6.2. Analytic strategy and procedure

This study followed a comparative design, aiming to find significant differences between a clinical sample (with the diagnosis of borderline personality disorder) and a non clinical sample, when considering some constructs: dissociation, alexithymia, anxiety, depression, mindfulness and decentering. With this purpose we used *t-student tests* to independent samples.

A battery of self-report questionnaires was given to the non-clinical sample, designed to measure several constructs, which were administered by the

investigator. A convenience sample was used and selected from the general community, in order to be compared to a clinical sample. Before filling the questionnaires, the research aims were explained and a consent form was signed, by the participant and the investigators, in order to state that all the information and rights of the participant were clarified, before doing the battery tests (Appendix A). It was emphasized that participants co-operation was voluntary and that their answers were confidential and only used for the purpose of the study.

The clinical sample was collected in Coimbra's Hospital Units, at the psychiatric clinic, in general psychiatric and psychotherapy consultations, were Psychiatrists and Psychologists collaborated with us, identifying the patients, and allowing us to evaluate and include them in our sample. The assessment process were divided in three moments (sometimes more); 1. It was administrated SCID-I and SCID-II, in order to scan which other psychopathology from axis I and II was present besides BPD, and simultaneously confirm the initial diagnose; 2. the BPD diagnose was then confirmed using BPDSI-IV, a structured clinical interview to measure borderline symptoms and their severity; and 3. finally after the diagnose were properly established, a battery of self-report questionnaires, exactly equal to the non clinical sample, were administered to the clinical sample.

It is important to account that the Hospital Service Director authorized the sample collection, and the patients participated voluntarily, and previously signed a consent form of the purpose of the study, and it was certified that the data collected is confidencial and only used for the purpose of this study.

6.3. Measures

Structured clinical interviews

Structured Clinical Interview for Axis I - SCID-I

The SCID-I (First et al., 1996; Portuguese version by Maia, 2006), is a semi-structured interview constituted by a set of standardized questions organized in sections, which correspond to DSM-IV (APA, 1994) Axis I clinical disorders (i.e., mood disorders, psychotic disorders, substance use disorders, anxiety disorders, somatoform disorders, eating disorders, adjustment disorders). Responses are registered and rated to evaluate the number of criteria fulfilled for each diagnosis.

Structured Clinical Interview for Personality Disorders - SCID-II

The SCID–II interview (First et al., 1997; Portuguese version by Pinto-Gouveia, Matos, Rijo, Castilho, & Salvador,1999) is a semi-structured interview designed to cover the eleven DSM-IV (APA, 1994) Axis II Personality Disorders (i.e., Avoidant, Dependent, Obsessive-compulsive, Paranoid, Shizoid, Schizotypical, Borderline, Histrionic, Narcissistic and Personality Disorder Not Otherwise Specified) and the appendix categories Depressive Personality Disorder and Passive-Aggressive Personality Disorder. SCID-II may be used to establish Axis II diagnosis, both categorically ('present' or 'absent') or dimensionally (rating the number of fulfilled criteria for each diagnosis). The interviewer should be applied by an experienced clinician.

Borderline Personality Disorder Severity Index - 4th Version – BPDSI

BPDSI-IV (Arntz & Giesen-Bloo, 1999) is a semi-structured clinical interview assessing the frequency and severity of Borderline Personality Disorder symptoms during a circumscribed period of three months. It includes 9 parts assessing symptoms of Borderline Personality Disorder in the following areas: Abandonment, Interpersonal relationships, Identity, Impulsivity, Parasuicidal behaviour, Affective instability, Emptiness, Outbursts of anger, and Dissociation/Paranoid ideation. All frequency questions are scored on 10-point scales (0 = never; 10 = daily), with the exception of Identity scale (1 to 4). The severity of the symptoms is obtained by the sum of all the subscales mean.

Self report questionnaires

The Toronto Alexithymia Scale – 20. The TAS-20 (TAS-20 (Bagby et al., 1994; Portuguese version: Prazeres, Parker, & Taylor, 2000) is a 20-item questionnaire that assesses alexithymia. The scale presents a good internal consistency. Cronbach's alpha, of alexithymia scale in non-clinical sample was .77 and the clinical sample revealed a poor internal consistency, with a Cronbach's alpha of .54.

Dissociation Experiences Scale – The DES is a scale that measures dissociative experiences, composed by 28 items on a Likert scale of 1 to 100. The levels of internal consistency of Cronbach's alpha were excellent in both clinical

($\alpha = .92$) and non-clinical ($\alpha = .95$) sample.

Depression, Anxiety and Stress Scales (DASS-42; Lovibond & Lovibond, 1995; Portuguese translation and adaptation by Pais-Ribeiro, Honrado, & Leal, 2004) is a self-report measure designed to assess three dimensions of psychopathological symptoms: depression, anxiety and stress. In this research, we used the shorter version with only 21 items (from the original 48), and we were interested on the depression and anxiety subscales. The items are rated on a 4-point scale (0-3) (Lovibond & Lovibond, 1995). The internal consistency of this scale was excellent, with a Cronbach's alpha of .96 for the non-clinical sample, and .92 in the clinical sample.

Experiences Questionnaire – EQ

(Fresco, Moore and collaborators, 2007; Portuguese version: Pinto-Gouveia, Gregório, Duarte, & Simões, 2012). The EQ is a 20-item self-report inventory designed to measure decentering (capability to observe one's thoughts and feelings as temporary). Items are rated on a 5-point Likert scale (1=never, 5=all the time). The EQ revealed a .83 Cronbach' alpha, and a value of .91 for the Portuguese version (Pinto-Gouveia, Gregório, Duarte, & Simões, 2012). The internal consistency of this scale in non-clinical sample showed a questionable Cronbach's alpha sample with .73, and the clinical sample revealed a poor internal consistency, with a Cronbach's alpha of .42.

Mindful Attention Awareness Scale (MAAS),

MAAS *trait version* (Brown & Ryan, 2003; Portuguese version: Pinto Gouveia, & Gregório, 2007) consists of a 15 item scale, all of which indicate a lack of mindfulness. These items are rated on a 6-point Likert scale ranging from 1 (almost always) to 6 (almost never); higher scores indicate more mindfulness, and the total score can range from 15 to 90. This instrument has shown excellent psychometric properties in the original study (Brown & Ryan, 2003). We also found an excellent internal consistency with Cronbach's alpha of .90 to the non-clinical sample and a alpha of .82 for the clinical sample.

Borderline Personality Questionnaire – BPQ; (Poreh et al., 2006; Portuguese version: Pinto-Gouveia, & Duarte, 2007). The *BPQ* is a self report measure, design to assess borderline personality traits, based on DSM-IV (APA, 1994) criteria for this disturbance and is constituted by 80 dichotomous items (No=0; Yes=1), organized in 9 subscales, corresponding to those criteria. The study of the original version (Poreh et al., 2006) presented a good internal consistency in the total scale, and reasonably good in the subscales. This scale revealed excellent internal consistency in the non-clinical sample ($\alpha = 92$), and a good level in clinical sample ($\alpha = 82$).

VII. Results

Preliminary analyzes

The assumptions of the *t-student tests* to independent samples were analyzed, concerning the distributions normality, and variance homogeneity. The assumption of the variables normality was analyzed through the Kolmogorov-Smirnov test, and the biases in relation to mean using the Skewness and Kurtosis measures. The homogeneity of the variance in both groups was analyzed considering Levene's test. We used software PASW (v.20; SPSS Inc, Shicago, IL) to realize these statistical analyzes, and we considered statistically significant the mean differences for a p-value inferior to.05 (Maroco, 2010).

Descriptives

To compare the clinical and non-clinical samples we created two groups, and we conducted independent samples *t tests* to estimate the mean differences between both groups. The means, standard deviations and *t test* values are presented on Table 1.

Comparison of BPD sample and non clinical sample

As we can see on Table 1, all mean differences in the variables in study were significant. The *alexithymia total scale* (TAS.20.Total) showed to be significantly higher in borderline clinical group, $t_{(68)} = -.782$, $p < .001$, along with the three factors of alexithymia (F1: $t_{(68)} = -6.446$; F2: $t_{(68)} = -5.360$; F3: $t_{(68)} = -4.021$; $p < .001$).

In *dissociation* scale comparison (DES-II), we also found significant differences with borderline group showing higher values than non-clinical group, $t_{(68)} = -4.451$, $p < .001$.

Table 1. Comparison (BPD vs non-clinical). Means (*M*), Standard Deviations (*SD*) and *t*-test differences between a clinical BPD sample (*n* = 20), and a non-clinical sample (n = 50).

Variables	Non-clinical (*n*=50)		Clinical (*n* = 20)			
	M	*DP*	*M*	*DP*	*t*	*P*
Alexithymia						
TAS.20.total	47.58	9.78	67.05	8.36	-.782	.000
TAS.20.F1	15.94	5.51	24.75	4.13	-6.446	.000
TAS.20.F2	12.48	4.21	18.5	4.33	-5.360	.000
TAS.20.F3	19.16	3.56	23.1	4.05	-4.021	.000
Dissociation						
DES-II	55.56	43.31	108.7	49.47	-4.451	.000
Psychopathology						
Depression	8.10	8.49	31.85	8.37	-10.611	.000
Anxiety	8.46	7.60	18.35	7.78	-4.883	.000
Mindfulness						
MAAS	4.12	.88	3.14	.809	4.276	.000
Decentering						
E.Q.decent.	34.88	4.66	15.10	4.61	16.085	.000
Borderline Symptoms						
BPQ	18.50	10.92	53.25	10.18	-12.252	.000

Note.; TAS = Toronto Alexithymia Scale [F1-Difficulty identifying feelings (TAS.F1); F2: difficulty describing feelings (TAS.F2); F3: externally oriented thinking style]; DES-II = Dissociation Experience Scale DASS = Depression, Anxiety and Stress Scale; MAAS = Mindfulness Attention Awareness Scale; E.Q = Experiences questionnaire; BPD = Borderline Personality Disorder.

Both psychopathology related scales, *depression*, $t_{(68)}$ = -10.611, p < .001, and *anxiety*, $t_{(68)}$ = - 4.883, p < .001, showed to be significantly higher in clinical group than in the non-clinical group. The same differences were found in *borderline symptoms* (BPQ), $t_{(68)}$ = -12.252, p < .001, even thought the values were significantly superior in this subscale.

When considering *mindfulness scale* (MAAS), the clinical group revealed significantly lower levels, when compared to the non-clinical group, $t_{(68)}$ = 4.276, p < .001. In the *decentering scale* (EQ.decent.) the non-clinical group also

presented significantly higher levels than borderline group , $t_{(68)} = 16.085$, $p < .001$.

VIII. Discussion

According to Linehan (1993), Borderline Personality Disorder is mostly a disorder of emotion dysregulation and result of a combination of individual biologic vulnerabilities and specific environmental influences. A consequence of those combined factors, is individuals with heightened emotional sensitivity, and the inability to deal and regulate intense emotional responses. Linehan also proposed that the development of BPD occurs within an invalidating developmental context. This invalidating environment is characterized by intolerance toward the expression of private emotional experiences, in particular emotions that are not supported by observable events, thus developing self-invalidation (fail to recognize one's own thoughts and emotional responses, and may include intense shame, self-hate, and self-directed anger). Impulsive behaviors are also a characteristic from BPD, along with dysfunctional strategies to decrease negative affect, such as dissociation and self-injury (for example) (Crowell, Beauchaine, & Linehan, 2009; Linehan, 1993).

The literature review describes alexithymia as the inability or difficulty to describe, identify emotions, and has been associated to several psychopathological indexes, namely dissociation, depression, anxiety, post traumatic stress (sexual abuse), self-injury and borderline personality disorder (Berenbaum & James, 1999; Evren, Cinar & Evren, 2012; Modestin, Furrer, & Malti, 2004; Webb & Mcmurran, 2008; Zlotnick et al., 1996; Zlotnik, Jill, & Zimmermann, 2001). The capacity to consciously regulate emotions implies the ability to identify, differentiate and understand them, so the lack of this ability, prevents the person to label negative emotions correctly, and consequently regulate them (Feldman Barrett, Gross, Christensen, & Benvenuto, 2001). There are controversial studies about the relationship between alexithymia and dissociation, some studies report there is no significant association between them (Wise, Mann & Sheridan, 2000; Zlotnick et al., 1996), others state there is a strong relationship connecting both constructs, in normal and clinical populations (Berenbaum & James, 1999; Evren, Cinar & Evren, 2012; Korzekwa et al., 2008; Stiglmayr et al., 2001). Additionally there are some evidence showing that high

levels of alexithymia and dissociation are associated with borderline features (Dijke et al., 2010; Johnston et al., 2009; Korzekwa et al., 2008; Zlotnick et al. 1996), and some research actually proved they are good predictors of borderline symptoms (Moorman, Albach & Bermond, 2012; Webb & Mcmurran, 2008).

With this study we aimed to explore the processes underlying borderline features, and investigate the differences between a non-clinical sample from general community, and a clinical sample of diagnosed patients with borderline personality disorder, hoping to find some interesting data which can give some clues and further knowledge of protector and risk processes concerning borderline symptoms. We decided to divide our study in two, so we could have a larger sample in the first study, allowing us to test some hypotheses and run some statistical tests (e.g. regression analyses), which implicate a considerable sample. So in the first study ($n = 207$) we investigated the relationship between alexithymia and dissociation, and how they relate to borderline symptoms. In the second study we decided to do a comparison study, for which we chose to collect a more appropriate normal population sample, so there were no significant age or gender differences between them, to better support possible results. Our initial purpose was to gather a bigger borderline sample ($n \geq 30$), to allow us to use other types of statistical tests, which request that minimum number. Although we didn't achieve that goal, we think is equally important to explore differences between a clinical and non-clinical groups, in variables such as alexithymia and dissociation, anxiety and depression, and also mindfulness and decentering.

In study 1, we aimed to explore the relationship between dissociation and alexithymia, and our first hypothesis was that these variables would present a positive correlation. The results found confirmed our predictions, showing moderate positive correlation between alexithymia total scale and factor 1 (difficulty identifying emotions) and factor 2 (difficulty describing feelings), and a low positive correlation with factor 3 (externally oriented thinking) of alexithymia scale (TAS.20). Our findings meet other studies results that reported association between dissociation and alexithymia (Berenbaum & James, 1999; Evren, Cinar & Evren, 2012; Korzekwa et al., 2008; Stiglmayr et al., 2001), suggesting that in fact the difficulty describing and identifying feelings seem to be related to dissociative states. One possible explanation is that maybe they are both defense mechanisms to deal with overwhelming emotions (e.g. anxiety,

rage, shame), or traumatic situations, that compelled them to developed detached relations and switching off emotions (alexithymia), and enter in a state of derealization and identity confusion (dissociation) instead of accepting a painful reality. The significant correlations between alexithymia and dissociation where sustained even after a partial correlation, controlling for depression and the same happened for anxiety. We also found moderate to strong correlations between both anxiety and depression in relation to alexithymia, dissociation and borderline symptoms. These results were also expected, because previous studies already had predicted that depression and anxiety are associated with all three variables, indicating that their presence can potentiate the severity of borderline symptoms, and also alexithymia and dissociation (Evren, Ciner, & Evren, 2012; Wise, Mann & Sheridan, 2000).

Another prediction of our study was that both alexithymia and dissociation would be associated positively with high levels of borderline features. Our findings met our expectations, confirming other studies results who stated the same hypothesis (Moorman, Albach & Bermond, 2012; Webb & Mcmurran, 2008), showing positive moderate correlations between borderline symptoms and dissociation, and positive strong correlation with alexithymia total scale, and factor 1 (difficulty identifying emotions). Dissociation was already expected to be related to borderline features, considering that it's included in borderline diagnosing criteria, the contribution is the fact that this association presents also in a non-clinical sample, and is simultaneously linked with alexithymia, proving that both alexithymia and dissociation increase the probability of finding borderline symptoms . These seem to support the knowledge that people that have borderline symptoms have difficulties describing and identifying their own emotions (Linehan, 1993; Moorman, Albach & Bermond, 2012) which consequently affect their ability to regulate them, which may be associated with a dissociative response too, in order to avoid dealing with negative emotions.

Then, we wanted to explore the contribution of alexithymia and dissociation to the borderline symptoms variance. For this purpose, we conducted a linear regression analyzes. Obtained results showed that dissociation and alexithymia are good predictors of borderline personality, accounting for forty five per cent of the variance. In this model we tested factor 1 (difficulties identifying feelings) and 2 (difficulties describing feelings) of the alexithymia scale, along with

dissociation, which showed that dissociation and factor 1 of alexithymia were better predictors of the variance. This results support the scientific data already described, and suggest that the difficulties identifying feelings can difficult the ability to regulate emotions (Connolly and Denney; 2007), which can explain the predictive connection with borderline symptoms, and dissociation also have a predictive role, possibly emerging as a containment strategy when emotions are too confusing and overwhelming, that maybe is potentiated by alexithymic traits. Thus a person with high levels of dissociation and alexithymia is more likely to develop borderline symptoms, which is an extremely important contribute to the knowledge of borderline risk factors, enhancing the necessity to early address such problems.

The second study of this research intended to compare a clinical and non clinical sample in several variables, namely dissociation, alexithymia, mindfulness and decentering skills. There is several literature describing the prevalence and comorbidities of borderline personality disorder (Rathburn, 2002, *cit in* Freeman, Stone, & Martin, 2005; Skodol et al., 2002; Zimmerman, Rothschild & Chelminsky, 2005; Zanarini et al., 2011), however there are few comparative studies (between BPD and normal population) relating both alexithymia and dissociation to borderline symptoms, or relating them with decentering. In the same premise, some scientific research showed the relevance and possibly absence of mindfulness skills in borderline personality disorder, and some suggest that maybe decentering is also low, due to high rumination (Hill, 2010; Morton, Snowdon, Gopold & Guymer, 2012; Teasdale et al., 2002; Wupperman et al., 2009). All our hypotheses were broadly confirmed.

Our hypothesis suggested that alexithymia and dissociation would present significantly higher levels on our clinical group, compared to the non-clinical one, which were confirmed by our results. Our findings also pointed out significantly higher levels of depression and anxiety in the clinical group, with greater prominence of depressive symptoms. These results support previous studies about borderline comorbidities, which include anxiety and depressive disorders (Pagura et al., 2010; Zanarini et al., 2011).

The predictions concerning mindfulness and decentering hopped to find higher levels of those skills in normal population, and consequently lower levels on the borderline clinical group. The obtained data confirmed our predictions,

showing significantly higher levels of both decentering and mindfulness in non-clinical sample. The importance of this results are tremendous, because they highlight the possible important role that decentering and mindfulness can have as protective factors to borderline symptoms, and gives the hint to include these skills training in a BPD directed intervention.

IX. Clinical implications

The implications for therapy highlight the importance to address emotional regulation strategies, which people with BPD may benefit from, whit an intervention focused upon helping them to identify, describe and discriminate emotions and feelings, to themselves and others, and understand the genesis of these feelings. This is in accordance with the findings of Connolly and Denney (2007), who suggested that clinical interventions for affect dysregulation in alexithymic individuals should target subjective interpretations of emotional stimulus, and the focus on identifying and discriminating emotions and somatic sensations may also assist in reducing self-harm, which is also so common in BPD patients, whose most usual function is to regulate negative emotions (Klonsky, 2007).

Another important contribution is related to the data confirming low levels of decentering and mindfulness in borderline patients, which suggest that mindfulness exercises to help the patient being in the present moment, and learn how to detach from one's thoughts, mostly the negative, can help patients decrease self-criticism and maladaptive strategies of emotional avoidance (such as dissociation and self injury).

X. Limitations and future research

Several limitations were found in this study. The main limitation of this research considering our initial expectations was the difficulty finding and collecting a larger clinical sample, in a limited period of time, allowing us to test more robust test in our comparative study. However, considering the time to collect that sample, a twenty borderline group was a good achievement. Another limitation to our results can be the fact that some instruments in borderline sample, showed poor levels of internal consistency (decentering scale and alexithymia), which suggest that maybe in future research other instruments to measure this constructs could be add. The use of larger sample (both normal and

borderline) could also add important information, maybe exploring the role of mindfulness as a protective factor of borderline personality.

Concerning dissociation scale, some authors suggested that high DES scores in BPD may be a mixture of non-pathological and pathological dissociation (Korzekwa, Dell, Links, Thabane & Fougere, 2009), which should be clarified and addressed in future research, dividing those groups in two (pathological dissociation vs non pathological dissociation), so see if our findings would still be confirmed.

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Anexo A

Consentimento informado

Antes do início da avaliação, foram-me explicados os objectivos da investigação e o respectivo protocolo e assegurada a **confidencialidade e anonimato dos dados**. Fui igualmente informado(a) que em qualquer momento eu posso desistir de colaborar neste estudo.

Compreendi as explicações pela investigadora *Julieta Azevedo* acerca dos objetivos desta investigação.

Eu………………………………………………………………….**concordo em participar voluntariamente** no estudo supra referido.

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O(A) participante

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A investigadora

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Docente Responsável

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