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The Toxicity of the Self: Developing a New Measure and Testing a Comprehensive Model of the Nature of Self-Disgust

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Dissertação de Mestrado em Psicologia Clínica, subárea de especialização em Intervenções Cognitivo-Comportamentais em Perturbações Psicológicas e da Saúde sob a orientação da Professora Doutora Paula Castilho

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I feel absolutely disgusted with myself. The way I look, the way I speak, the way my face is, the way I think, the way my life is, everything. I look tired. I am tired, I feel tired. I feel worthless, and any attempts I make at self worth make me even more disgusted with myself. What a disgustingly hopeless struggle I'm trying to fight, I should never have been born, and I'm a disgrace to all of humanity to ever have lived. I should just off myself to do the world a favor.

Anonymus

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Introduction note - The Toxicity of the Self:

Developing a New Measure and Testing a Comprehensive Model

of the Nature of Self-Disgust

The basic emotion of disgust is probably the less studied of all emotion. Darwin (1872/1965) defined disgust as "something revolting, primarily in relation to the sense of taste, as actually perceived or vividly imagined; and secondarily to anything which causes a similar feeling, through the sense of smell, touch and even eyesight" (p. 253). Disgust is linked to the threat-protection system which function is to motivate the individuals to avoid threats and attacks with affective, cognitive and behavioral components (Gilbert, 1989).

Nevertheless, our brain evolved to be sensitive to social signs and developed certain abilities such as self-reflection, self-monitoring, future thinking, self-representation and mind reading. Our internal speech expresses the social relationships that we establish with other people (Gilbert, 1989) and our own thoughts can activate the defense system (Gilbert, 2001). The internal world, by itself, can become a threat and feelings of disgust can be directed towards the self rather than towards external stimuli, when one is seen as toxic and dangerous (self-disgust).

Some studies suggest that people with experiences of subordination and threat in childhood tend to see the self as inferior and undesirable and engage in submissive behavior (Gilbert, 1993; Sloman & Atkinson, 2000). When individuals think that other people consider them undesirable and will reject them, they feel shame (Gilbert, 1998; 2000). Experiential avoidance is a process by which the individual tries to suppress or avoid unwanted thoughts and feelings (Hayes, 1994).

In this line, the aims of this thesis were to develop and investigate the psychometric proprieties of a measure that assesses the multidimensional features of self-disgust and to explore how these dimensions explain psychopathology and suicidal thoughts. Furthermore, it was also an aim to examine the nature of self-disgust by testing a dual mediation model.

The Multidimensional Self-Disgust Scale (MSDS) presented 4 components: *defensive activation*, *cognitive-emotional*, *exclusion* and *avoidance* subscales and revealed very good internal consistency and convergent validity. Regression analysis suggested that self-disgust is an important variable to explain psychopathology and suicidal thoughts. The hypothesized model revealed a perfect fit providing evidence that external shame and experiential avoidance have an important mediation role between memories of perceived threat and subordination in childhood and the different components of self-disgust. These findings have clinical implications and provide orientations to future research.

Table of articles

The articles included on this dissertation are:

I. Carreiras, D. & Castilho, P. (2014). *The toxicity of the self: Development and exploratory analysis of the Multidimensional Self-Disgust Scale (MSDS).* Manuscript in preparation

II. Carreiras, D. & Castilho, P. (2014). *The toxicity of the self: The nature of self-disgust*. Manuscript in preparation

ARTICLE I

Carreiras, D. & Castilho, P. (2014). *The toxicity of the self: Development and exploratory analysis of the Multidimensional Self-Disgust Scale (MSDS).* Manuscript in preparation.

The Toxicity of the Self:

Development and Exploratory Analysis of the

Multidimensional Self-Disgust Scale (MSDS)

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Abstract

Disgust has been identified as a basic emotion activated by the threat-protection system with the intent to avoid, expel or eradicate what is considered dangerous. Initially, disgust was elicited by real or perceived threats triggered by external stimuli. However, the new (social) brain brought to humans conscious of our consciousness, intersubjectivity and, in consequence, social mentalities allowing us to deal with ourselves as we do with other people. The disgust may be pointed to internal stimuli when the self is seen as toxic and negative.

The current study aimed at developing and investigating the psychometric proprieties of a measure that assesses the multidimensional features of self-disgust and at exploring how these dimensions explain psychopathology and suicidal thoughts. This study had a cross-sectional design.

The psychometric properties of the scale were analyzed in a representative sample of 604 participants, through an Exploratory Factor Analysis. The results showed 4 components of self-disgust: defensive activation, cognitive-emotional, exclusion and avoidance subscales. The MSDS revealed very good internal consistency and convergent validity. Regression analyses revealed that self-disgust is an important predictor of psychopathology and suicidality. Our findings contribute to research with the development of a valid and reliable measure to assess self-disgust.

Key-words: Self-disgust, exploratory factor analysis, psychometric proprieties, Multidimensional Self-Disgust Scale, psychopathology, suicidal thoughts

Resumo

O nojo/aversão tem sido identificado como uma emoção básica ativada pelo sistema de ameaça-defesa com o objetivo de evitar, expelir ou erradicar o que é considerado perigoso. Inicialmente, o nojo era elicitado por ameaças reais ou percebidas espoletadas por estímulos externos. No entanto, o novo cérebro (social) muniu os humanos de consciência sobre a consciência, intersubjetividade e, em consequência, mentalidades sociais que nos permitem lidar connosco do mesmo modo que lidamos com os outros. O nojo pode ser direcionado para estímulos internos quando o self é visto como tóxico e negativo.

O presente estudo teve por objetivo desenvolver e investigar as propriedades psicométricas de uma medida que avalia as multi-dimensões da auto-aversão e explorar a explicação dessas dimensões para a pscopatologia e ideação suicida. Este é um estudo transversal.

As propriedades psicométricas da escala foram analisadas numa amostra representativa de 604 participantes através de uma Análise Fatorial Exploratória. Os resultados revelaram 4 componentes da auto-aversão: ativação defensiva, cognitiva-emotional, evitamento e exclusão. A EMAA revelou muito bons resultados de consistência interna e validade convergente. As regressões múltiplas revelaram que a auto-aversão é um preditor importante para a psicopatologia e suicidabilidade. Os nossos resultados contribuem para a investigação com o desenvolvimento de um instrumento válido e fidedigno para avaliar a auto-aversão.

Key-words: Auto-aversão, Análise Fatorial Exploratória, propriedades psicométricas, Escala Multidimensional da Auto-Aversão, psicopatologia, ideação suicida

Introduction

Disgust has been identified as a basic and universal emotion since Darwin (1872/1965) in the book *The Expression of the Emotions in Man and Animal*. Darwin defined disgust as "something revolting, primarily in relation to the sense of taste, as actually perceived or vividly imagined; and secondarily to anything which causes a similar feeling, through the sense of smell, touch and even eyesight" (p. 253). This emotion has a behavioral, physiological and expressive component. The behavioral component is manifested through a distancing from what is represented as rejection (Rozin, Haidt & McCauley, 2000). The physiological component is characterized by nausea and increased salivation (Angyal, 1941 cit in Rozin, Haidt & McCauley, 2000). In terms of expression, the "disgust face" is characterized by the retraction of the upper lip, nose wrinkle, dropping of the mouth corners and gape (Darwin, 1872/1965; Ekman, 1972). The mental or feeling component of disgust (*qualia)* is revulsion (Rozin, Haidt & McCauley, 2000).

However, disgust seems to be more complex than at first glance. There is more than one form of disgust and it can be elicited by several types of threats. By its evolutionary adaptive value, core disgust is the original form of disgust which function is to defend the organism against oral ingestion of potentially harmful substances. It is elicited by real or perceived threats of oral incorporation, sense of offensiveness and contamination (Rozin, Haidt & McCauley, 2000). Animal-nature disgust regards reminders of our own mortality and inherent animalistic nature: incest, poor hygiene, death (Rozin, Haidt & McCauley, 2000). Interpersonal disgust is elicited by contact with possession, utensils, clothing or rooms, used by unknown and undesirable people (Rozin, Markwith & McCauley, 1994 cit in Rozin, Haidt & McCauley, 2000). At last,

moral disgust is related to moral violations including issues of sexuality, gore, abuse of human bodies, betrayal and racism. At some point, they can overlap with animal-nature disgust (Scherer, 1997). Thus, disgust is not only directed towards the outside but also towards oneself. This kind of disgust response has been labeled self-disgust or self-loathing (Overton et al., 2008).

Social Mentality Theory and Self-to-Self Relationship

Human beings are born with sensitive psychobiological systems to detect and recognize key-stimuli which enable them to defend against threats (e.g. fight/flight) and/or to seek resources (e.g. food, sexual partner). These motivational systems, also known as social mentalities, help building social roles in order to solve social challenges. Since they are patters of neurocortical activity, social mentalities are choreographed by external stimuli (e.g. the hostile or caring behavior of others) and internal processing systems that give meaning to the social signs (Gilbert, 2005).

Thus, these psychobiological patterns guide people to seek and create certain types of roles with others (e.g. a child seeks attachment and protection from a parent; adults seek out people to form friendships, alliances or sexual relationships with), to interpret the social roles others are trying/seeking to enact with them (e.g. others are acting in caring, sexually, friendly or competitive ways towards the self) and also guide their affective and behavioral responses (e.g. if other is friendly, then approach and act in a friendly way; if hostile, then attack or avoid). However social mentalities are also present in the self-to-self relating.

Gilbert (2005) suggests that people's interactions with themselves (critical or warm and accepting) operate through similar psychological systems to those used to

relate with to others. So, we respond to our own attacks and condemnations with the same response systems that we use to deal with external attacks and threats. If we are hostile with ourselves, these signs can activate the threat-protection system that functions to protect us (Gilbert, 2005; 2010). In this line, we can adopt a threat-protection orientation towards the self like we do with other people (avoid, correct, persecute, eradicate). This means that we can be self-critical and hostile and feel, often, depressed and failed (Whelton & Greenberg, 2005).

Self-criticism is a defensive/safety behavior which is focused on topics of inferiority, social comparison and self-blaming, promoting the deactivation of possible retaliation and dominance of powerful others (Gilbert, 2005a; Gilbert & Irons, 2005; Gilbert &Miles, 2000). Whelton and Greenberg (2005) have shown that the pathological aspects of self-criticism are not just related to the content of thoughts but to the effects of self-directed anger and contempt in the criticism. The emotions linked to the more toxic component of self-criticism (hated self) tend to be the ones of disgust, contempt and may have evolved to avoid noxious substances. Self-disgust and self-criticism, by its nature and function, involve the social ranking mentality, which is a very adaptive strategy to deal with threatful, abusive and hostile contexts (Gilbert, 2010).

Threat-Protection System and Self-Disgust

The basic emotion of disgust is linked to the threat-protection system which function is to alert and avoid threats and attacks, having affective, cognitive and behavioral components (Gilbert, 1989). This affect regulation system was designed to detect and pick up on threats quickly and select responses such as emotions (e.g. disgust, anxiety, anger), cognitions (e.g. dichotomic thoughts, overgeneralization) and

behaviors (e.g. fight, flight, submission) to protect the organism (Gilbert, 2000). Following the rule "better safe than sorry", it is highly sensitive to stimuli that signal potential threats (e.g. punishment or failure) and quickly activates defensive emotions such as sadness, anger, anxiety or disgust (Gilbert, 2005). Disgust, in particular, motivates the individual to take action against threats by avoiding, expelling or eradicating what is dangerous. This emotion can be elicited by the external world or by the internal world (self) and can recruit other emotions (anger, fear, shame) and feelings (frustration).

Self-Disgust

Already in 1967, Beck had said that people with moderate levels of depression experience feelings of self-dislike that can progress to feelings of disgust towards the self. Although self-disgust is an important negative emotional state that some authors have been approaching (Ekman, 1992; Overton et al., 2008), it has been understudied and unexplored.

Self-disgust can be defined as the devaluation of one's own physical appearance and personality (personal disgust) as well as one's own behavior (behavioral disgust) (Overton, 2008; Ille et al, 2014). In other words, self-disgust is a maladaptive self-directed generalization of the adaptive response of disgust and it is related to the cultural environment where the individual learns to appraise what is and what is not disgusting. Self-disgust takes place when the aspects of the self are appraised as disgusting. From an evolutionary point of view, it is helpful to have a disgust response that can be generalized and that is build by socio-cultural learning. However, it is possible that this generalization facilitates some people, with developmental

vulnerabilities, to develop dysfunctional disgust reactions to characteristics of their own selves (Power & Dalgleish, 2008 cit in Powell, Simpson & Overton, 2013).

When someone experiences self-disgust, the internal world becomes a threat and the defensive system is activated such as when disgust is externally directed (Overton et al. 2008). Thus, when one sees himself as a failure and repulsive feelings of (self) disgust may be activated and the self-to-self relationship can be characterized by hostile strategies of attacking and put down (name calling) as if one was trying to subordinate or put down a competitor. Strategies of subordination and defense are activated and they are linked to depression symptoms (Gilbert, 2000).

If we have a part of our body dirty, it is adaptive to be temporarily disgusted so we are motivated to clean it (this stimulus is provisional and cleansable). However, if the elicitor of disgust is a relatively stable aspect of the self, then the response becomes dysfunctional and this perpetual disgust towards the self may lead to depression (Powell, Simpson & Overton, 2013). Some people can focus on internal images of the hostile part of the self and describe it as “aggressive”, with a “sadistic smile” or a “disgust face”, and that part can represent an internal bully. Usually, people try to hide from it (Gilbert, 2000).

Self-Disgust and Negative States

In a recent study, Overton et al. (2008) argued that self-disgust may be part of the fundamental aspects of depression. The authors empirically showed that self-disgust has a mediator role between dysfunctional cognitions and depressive symptomatology.

In 2013, Powell, Simpson and Overton developed a longitudinal study and concluded that self-disgust is not an epiphenomenon of depression symptoms. Rather, it

is a more stable affective orientation that predicts depressive symptoms over time. The authors even suggest that this stability may point to an emotional schematic construct with two disgust-based components (cognitive and affective). Furthermore, it was found a reverse path between self-disgust and dysfunctional cognitions suggesting a relative reciprocal relationship between both variables.

Castilho and Carreiras (2014) showed, in a non clinical sample, that the impact of recalled threat and submissiveness in childhood on suicidal thoughts, when controlling the effect of depression symptoms, is operated through self-disgust and feelings of entrapment.

Self-disgust was recently studied in patients with different mental disorders (borderline personality, major depression, schizophrenia, eating disorder and spider phobia) with a control group to compare the results (Ille et al., 2014). The authors concluded that people with mental disorders present higher scores of self-disgust and that the disgust directed to personal aspects is more pronounced that the disgust directed to behaviors. Patients with borderline personality and eating disorders reported the highest scores of self-disgust. Furthermore, psychoticism and hostility were identified as the main predictors of personal disgust and anxiety and interpersonal sensitivity were the main predictors of behavioral disgust. The authors also suggested that experiences of physical and/or sexual abuse, mostly during childhood, result in higher levels of self-disgust.

Assessment

To date, most of the research on self-disgust has been conducted using the Self-Disgust Scale (SDS; Overton et al., 2008). To develop this scale, the authors conducted a

study with a sample composed by 111 psychology students. The items generation was based on the Self-Description Questionnaire III (Marsh & O'Neill. 1984) which is a measure of thoughts and feelings to assess several aspects of self-concept. The authors considered relevant the constructs "appearance", "general self-concept" and "behavior/abilities". The final version of the SDS comprises 18 statements rated on a Likert-style scale of 7 points (1 = *strongly agree*; 7 = *strongly disagree*). 12 items are related to the three self-disgust constructs and 6 items are neutral filler statements. The internal consistency of the scale is very good (α = .91) as well as test-retest reliability (r = .94) a week later. Concurrent validity was also analyzed (r = .25). The factor analysis revealed two factors: "disgusting self" concerning a context-free evaluation of the self ("I find myself repulsive") and "disgusting ways" consisting of evaluation of behavior ("the way I behave makes me despise myself").

Although this scale has proven to be reliable for the assessment of self-disgust, the items of the SDS are essentially thoughts and evaluations. Emotions, however, as action patterns linked to motives, have other important components such as physiological, emotional and behavioral. No studies have explored these dimensions despite the recognition of the multidimensional nature of self-disgust. This study is an attempt to surpass this limitation and aimed to develop and validate the Multidimensional Self-Disgust Scale (MSDS) to Portuguese population. Specifically, the current study aimed to explore the dimensionality and the psychometric properties of a new measure of self-disgust in a non-clinical sample and to investigate how self-disgust contributes to depressive and anxious symptoms and to suicidal thoughts.

Method

Participants and Procedure

In order to preliminary test the semantic comprehension of the items of MSDS, 34 participants responded to this self-report questionnaire.

Then, 604 subjects, 251 students (41.60%) and workers 353 (58.40%), between 18 and 60 years old were selected. This samples is composed by 408 females (67.50%) and 196 males (32.50%) with mean age of 29.36 years (*SD* = 10.87). Men (*M* = 31.89, *SD* = 10.23) are statistically significant older ($t_{(602)}$ = -3.833, $p < .001$) than women (*M* = 28.14, *SD* = 11.71). The participants have a mean of 13.51 years of schooling (*SD* = 3.17).

This was a convenience sample collected in social networks, blogs and informal contexts. 487 participants responded to the questionnaires via online (81%) and 117 in paper form (19%). The questionnaire was preceded by a page to inform the subjects about the study aims and importance of their participation and confidentiality. All participants provide their written informed consent.

Development of the MSDS

The items of the MSDS were generated by the authors in order to measure the different components of the emotional response of self-disgust: behavioral, cognitive-emotional, physiological and a more specific component linked to exclusion behaviors or eradication of the disgusting stimulus that, in this scale, is the self. The revision of the items was conducted by a clinical expert with theoretical experience in the area who gave further suggestions regarding the semantic construction and content of the items.

This initial items' pool was composed by 59 items that assess the 4 components of the self-disgust response. The items were preceded by an instruction: "Disgust is a basic, universal and fundamental emotion whose main function is to defend us. By disgust we mean a feeling of aversion, deep grief or even repugnance about some aspects: physical (body) or regarding the way we are, feel, think or behave. The present scale was made to evaluate self-disgust in its different components: cognitive (what we think), emotional (what we feel), physiological (bodily sensations) and behavioral (how we act). We are interested about how frequently you experience this feeling, in its different components, towards yourself." Subjects rate the items on a 5-point likert scale according to the frequency they experience it (0 = *Never*; 4 = *Always*). Examples of the items are: "I get chills in some parts of my body", "I feel a deep grief regarding those aspects of myself", "I make things to hurt me or to eliminate some parts of me (cutting, burning, scratching, beating)", "I avoid exposing myself to others". Higher scores represent higher levels of self-disgust.

Measures

Self-disgust. The Multidimensional Self-Disgust Scale (MSDS; Castilho, Pinto-Gouveia, Pinto & Carreiras, 2014) was designed to measure the disgust towards the self regarding physical, behavioral and functioning aspects. This measure present 4 subscales: defensive activation (the physiological component inherent to the feeling of self-disgust which is directly linked to the Sympathetic Nervous System so the individual can escape from or expel the toxic stimulus), cognitive-emotional factor (thoughts and emotions that reflect the hostile and aggressive relation with the self),

avoidance (behaviors to hide and avoid the aspects of the self considered disgusting or the attempt to dissimulate what is revolting and toxic) and exclusion (ways to exclude and eliminate the aspects of the self considered disgusting and ways to regulate emotions). The psychometric proprieties and the factorial analysis will be presented in the current study.

Emotional regulation processes. The Acceptance and Action Questionnaire II (AAQ II; Bond et al., 2011) is a very used 7-items measure to evaluate experiential avoidance and psychological inflexibility, two main constructs in ACT. Subjects rate each statement on a Likert-style scale of 7 points (1 = *never true*; 7 = *always true*). Higher scores represent more psychological inflexibility and experiential avoidance reflecting a single domain (e.g. I'm afraid of my feelings). This measure has better psychometric properties than AAQ and AAQ-I versions: the Cronbach's coefficient is .84 and test-retest reliability .81 (3 months) and .79 (12 months). Portuguese version (Pinto-Gouveia, Gregório, Dinis, & Xavier, 2011) has also a good Cronbach's coefficient (.90) and good convergent and discriminant validity. In this study the AAQ-II has a Cronbach's coefficient of .91.

The Forms of Self-Criticizing and Self-Reassuring Scale (FSCRS; Gilbert, Clarke, Hempel, Miles & Irons, 2004) is a self-report instrument with 22 items to evaluate the way people criticize and tranquilize themselves when they fail or make mistakes. People rate each statement on a 5-point Likert-scale (0 = *not at all like me*; 4 = *extremely like me*). The FSCRS have three subscales: *inadequate self (*e.g. *I think I deserve my self-criticism), reassure self (*e.g. *I still like being me)* and *hated self (*e.g. *I call myself names).* This measure has good internal consistency (Cronbach's coefficients between

.86 and .90) and its validity was verified by the relationship between the subscales and other measures of self-criticism and psychopathology. The portuguese version of FSCRS (Castilho & Pinto-Gouveia, 2011a) has the same three factor with Cronbach's coefficients of .89 (inadequate self), .87 (reassured self) and .62 (hated self). Test-retest reliability was .72 (factor 1), .65 (factor 2) and .78 (factor 3). In this study, FSCRS has a Cronbach's coefficient of .89 for inadequate self, .81 for hated self and .88 for reassured self.

The Self-Compassion Scale (SELFCS; Neff, 2003b) is a 26-items instrument developed to evaluate self-compassion (to be kind and comprehensive to the oneself when he's going through situation of pain and failure) where subjects must respond on a 5-points Likert scale (1 = *almost never*; 5 = *almost always*). This measure revealed a very good internal consistency (.92) and test-retest reliability (.93). Factorial analysis pointed six factors: *self-kindness* (α = .78; e.g. *I'm kind to myself when I'm experiencing suffering*), *self-judgment* (α = .77; e.g. *When times are really difficult, I tend to be tough on myself*), *common humanity* (α = .80; e.g. *I try to see my failings as part of the human condition*), *isolation* (α = .79; e.g. *When I fail at something that's important to me I tend to feel alone in my failure*), *mindfulness* (α = .75; e.g. *When something upsets me I try to keep my emotions in balance*) and *over-identification* (α = .81; e.g. *When something upsets me I get carried away with my feelings*). Portuguese version of SELFCS (Castilho & Pinto-Gouveia, 2011b) found the same factor: *self-kindness* (α = .84), *self-judgment* (α = .82), *common humanity* (α = .77), *isolation* (α = .75), *mindfulness* (α = .73) and *over-identification* (α = .78). Total internal consistency (.89) and test-retest reliability (.79) 4 weeks later were good. It also revealed a good convergent and divergent validity. The SELFCS has a cronbach's

coefficient of .85 in our data.

Psychopathology. The Depression Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) is a short version of DASS-42 in order to reduce the administration time. It was developed to evaluate three categories of emotional distress: depression, anxiety and stress, 7 items to each category. The 21 items are rated on a 4-point Likert scale accordingly to how much each statement applied to the individual along the past week (0 = *did not apply to me at all*; 3 = *applied to me very much, or most of the time*). The Portuguese version (Pais-Ribeiro, Honrado & Leal, 2004) of the DASS-21 pointed three factors: depression (α = .85), anxiety (α = .74) and stress (α = .81). This measure showed good convergent and discriminant validity. The DASS-21 showed a very good internal consistency in this study (α = .95).

The SS (Castilho, Pinto & Carreiras, 2014) was designed to measure how frequently an individual thinks about committing suicide. The scale encompasses 11 items (e.g. *There have been times that I wanted to be death*) which are rated on a 4-point Likert-scale (0 = *Have never happened to me*; 4 = *Have always happened to me*). Cronbach's coefficient obtained for the total scale was .94. Higher scores represent more suicidal thoughts. In the current study, the internal consistency of the total scale was .94.

Data Analytic Plan

Data was analyzed using SPSS (Statistical Package for the Social Sciences), version 20 (IBM Corp, Armonk, NY, USA). The current study has a cross-sectional design. To analyze the dimensionality of the MSDS a Principal Components Analysis

(PCA) was conducted with oblimin rotation (Tabachnick & Fidel, 2007). The oblimin rotation is applied when the underlying components are expressively correlated. The statistical assumptions to conduct this analysis were tested. The sample size is above the minimum recommended of 300 cases (N = 604); and the communalities were all above .30 (Pallant, 2010; Tabachnick & Fidell, 2007). The retention of the factors was based on Kaiser's criterion (eigenvalues greater than 1) and on the analysis of scree-plot. Kaiser-Meyer-Olkin (KMO; Kaiser, 1970) and the Bartlett's Test of Sphericity (Bartlett, 1954) were also analyzed. The scale reliability was assessed using Cronbach's alpha.

To compare the mean of two independent groups in the socio-demographic variables independent samples t-tests were conducted. The differences were considered significant when *p* values were equal to or less than .05 (Howell, 2007).

Pearson's product moment correlation coefficients were calculated to explore the association between the variables. Regarding the magnitude and according to Cohen (1988), correlation coefficients between .10 and .30 were considered low, between .30 and .50 were considered moderate and above .50 were considered high.

Multiple regression analyses were computed to explore the contribution of the dimensions of self-disgust to psychopathology.

Results

Preliminary Data Analyses

Preliminary data analyses were conducted to examine the violation of tests' assumptions. An inspection of the values of skewness and kurtosis did not reveal

serious biases (Skewness values < 3 and Kurtosis values < 10; Kline, 2005). The analysis of the outliers was conducted through the graphic representation of the results (box plot).

Furthermore, a series of tests were conducted to examine the suitability of the current data for regression analyses. Analysis of residuals scatter plots showed that the residuals were normally distributed, had linearity and homoscedasticity. Also, the independence of the errors was analyzed and validated through graphic analysis and the value of Durbin–Watson (values ranged between 1.918 and 2.105). Regarding multicollinearity or singularity amongst the variables, Variance Inflation Factor (VIF) values indicated the absence of β estimation problems (VIF < 5). Overall, these results suggest that these data are adequate for regression analyses.

Dimensionality of the Measure

Exploratory factor analysis. To understand the factorial structure of the MSDS, we conducted a Principal Components Analysis (PCA). We opted for this analysis because this was the first study of a new measure. The KMO value was .97, exceeding the recommended value of .60 (Kaiser, 1970) and Bartlett's Test of Sphericity (χ^2 (528) = 16815.957; $p < .001$) reached statistical significance (Bartlett, 1954).

Scree-plot analysis revealed an evident inflexion from factor 4 to factor 5. Three Exploratory Factor Analyses (EFA) were conducted until an optimal solution was obtained. Items in the pattern matrix that revealed factor loadings < .50 or loaded in more than one factor were sequentially removed. A four-factor solution with 32 items revealed to be the more adequate. On table 1 factor loadings and communalities for each

item are presented as well as the eigenvalues of each factor and explained variance.

Table 1.
Factor Loadings and Communalities (h^2) (N=604)

Item	F_1	F_2	F_3	F_4	h^2
13. I feel faint or like I'm going to lose the strength of my body.	.79				.69
3. I have shortness of breath.	.79				.66
15. I get chills in some parts of my body.	.78				.62
17. I get a strange feeling in my stomach.	.76				.64
1. I feel shivers in my body.	.75				.62
32. I have pricking or tingling sensations in some parts of my body.	.74				.63
19. I feel dizzy.	.72				.64
14. I have the feeling my body contracts.	.72				.68
7. My heart beats fast.	.72				.67
22. I get gastrointestinal changes (cramping sensation, stomach ache)	.70				.56
10. I feel muscle tension in the face (wrinkling of the fronthead, eyes partially closed, lips contraction).	.65				.64
23. I get aroused.	.63				.54
24. I feel like I'm going to vomit.	.63				.57
28. I feel a knot in my throat.	.63				.67
21. I hate/despise that part of me.		-.88			.80
5. I feel a deep grief regarding those aspects of myself.		-.85			.85
26. I feel anger about those aspects of myself.		-.85			.81
11. I feel that those parts of me are "something bad in me".		-.85			.75
2. I would like to run away from myself.		-.83			.77
18. I can't stop thinking about those aspects of me that I disgust.		-.79			.72
31. I fiercely criticize myself because of those aspects of me.		-.79			.77
16. I feel dirty because of those aspects.		-.78			.73
29. I feel those parts of me represent spots/stains.		-.77			.74
8. I feel diminished, inferior and small.		-.77			.74
20. I do things to hurt me or to eliminate some parts of me (cutting, burnings, biting, scratching, beating).			.81		.77
12. I feel like cutting, burning or excluding that part of myself.			.74		.69

27. I drink, take drugs or pills.			.69		.57
9. I feel like burping.			.53		.49
4. I get inhibited.				.70	.73
30. I avoid exposing myself to others.				.59	.69
6. I disguise/dissimulate those aspects of me that I disgust.				.55	.60
25. I avert my gaze from my body.				.54	.62
E*ingevalues*	16.40	3.22	1.79	1.06	-
Explained variance (%)	49.70	9.77	5.36	3.20	-

The four-factor solution explains 68.02% of the total variance. The first factor explained 49.7% of the variance (eigenvalue of 16.40) and included 14 statements regarding physiological activation inherent to the feeling of disgust towards the self and was named *defensive activation*. The second factor (*cognitive-emotional*) explained 9.77% of the variance (eigenvalue of 3.22) and consisted of 11 items about cognitions and emotions recruited by self-disgust. The third factor was responsible for 5.36% of the variance (eigenvalue of 1.79), and was composed by 4 statements regarding exclusion behaviors and ways to regulate emotions and so was named *exclusion*. Finally, the fourth factor, *avoidance*, explained 3.20% of the variance (eigenvalue of 1.06) and consisted of 4 items describing ways of avoiding exposure or of dissimulation of what is considered disgusting in the self.

Correlations between the factors of the SDS are presented on table 2. Correlations between the *exclusion* and *cognitive-emotional* subscales, and between *exclusion* and *avoidance* subscales were moderate and all the others were high. All correlations were significant ($p < .001$).

Table 2.
Inter-correlations between SDS factors

Factors	F_1	F_2	F_3	F_4
Defensive activation (F_1)	1	-	-	-
Cognitive-emotional factor (F_2)	.64**	1	-	-
Exclusion (F_3)	.58**	.49**	1	-
Avoidance (F_4)	.69**	.72**	.47**	1

Note. $^{**}p < .001$

Descriptive statistics. The mean, standard deviation, median, minimum and maximum for all the 4 factors of self-disgust are presented in Table 3. *Defensive activation* ranged between 0 and 50 points, *cognitive-emotional* factor between 0 and 44, *exclusion* between 0 and 13 and *avoidance* between 0 and 16 points. All factors presented low mean values, which can be explained by the low predominance of destructive and pathogenic self-disgust in non-clinical samples. *Exclusion* had the lower mean (M = 1.08, SD = 2.15), followed by *avoidance* (M = 3.30, SD = 3.50), cognitive-*emotional* factor (M = 7.39, SD = 9.76) and *defensive activation* (M = 8.86, SD = 10.36).

Table 3.
Means (M), standard-deviations(SD), medians (Median), minimus (Min) and maximus (Max) of the self-disgust components (N=604)

Factors	*M*	*SD*	*Median*	*Min*	*Max*
Defensive activation	8.86	10.36	5	0	50
Cognitive-emotional factor	7.39	9.76	3	0	44
Exclusion	1.08	2.15	0	0	13
Avoidance	3.30	3.50	2	0	16

Items' properties and internal consistency. Means, standard-deviations, item-total correlations and Cronbach's alphas if item deleted for each item are presented on

table 4 as well as the Cronbach's coefficients of the 4 subscales.

Table 4.
Means (M), Standard Deviation (SD), Item-total Correlations (r), Cronbach's Alpha if item deleted (α), and Cronbach's Alpha of the subscales

Factors/Items	*M*	*SD*	*r*	*α*
Factor 1: Defensive activation (α = .95)				
1. I feel shivers in my body.	0.59	0.92	0.73	0.94
3. I have shortness of breath.	0.55	0.88	0.77	0.94
7. My heart beats fast.	0.83	1.02	0.77	0.94
10. I feel muscle tension in the face (wrinkling of the fronthead, eyes partially closed, lips contraction).	0.75	1.05	0.75	0.94
13. I feel faint or like I'm going to lose the strength of my body.	0.55	0.92	0.78	0.94
14. I have the feeling my body contracts.	0.64	0.98	0.79	0.94
15. I get chills in some parts of my body.	0.52	0.92	0.74	0.94
17. I get a strange feeling in my stomach.	0.69	0.95	0.76	0.94
19. I feel dizzy.	0.51	0.91	0.73	0.94
22. I get gastrointestinal changes (cramping sensation, stomach ache)	0.66	0.99	0.68	0.95
23. I get aroused.	0.76	0.98	0.65	0.95
24. I feel like I'm going to vomit.	0.36	0.80	0.66	0.95
28. I feel a knot in my throat.	0.95	1.12	0.75	0.94
32. I have pricking or tingling sensations in some parts of my body.	0.48	0.82	0.68	0.95
Factor 2: Cognitive-emotional factor (α = .97)				
2. I would like to run away from myself.	0.69	1.05	0.84	0.96
5. I feel a deep grief regarding those aspects of myself.	0.79	1.09	0.90	0.96
8. I feel diminished, inferior and small.	0.70	1.03	0.83	0.97
11. I feel that those parts of me are "something bad in me".	0.74	1.06	0.84	0.96
16. I feel dirty because of those aspects.	0.39	0.83	0.78	0.97
18. I can't stop thinking about those aspects of me that I disgust.	0.66	0.97	0.82	0.97
21. I hate/despise that part o f me.	0.51	0.95	0.85	0.96
26. I feel anger about those aspects of myself.	0.72	1.05	0.88	0.96
29. I feel those parts of me represent spots/stains.	0.68	1.05	0.83	0.97
31. I fiercely criticize myself because of those aspects of me.	0.81	1.08	0.84	0.96
Factor 3: Exclusion (α = .77)				
9. I feel like burping.	0.36	0.72	0.48	0.77

12. I feel like cutting, burning or excluding that part of myself.	0.21	0.69	0.59	0.70
20. I do things to hurt me or to eliminate some parts of me (cutting, burnings, biting, scratching, beating).	0.17	0.57	0.70	0.67
27. I drink, take drugs or pills.	0.34	0.80	0.56	0.73
Factor 4: Avoidance (α = .84)				
4. I get inhibited.	0.94	1.07	0.70	0.79
6. I disguise/dissimulate those aspects of me that I disgust.	0.80	1.09	0.64	0.81
25. I avert my gaze from my body.	0.56	0.92	0.65	0.81
30. I avoid exposing myself to others.	1.01	1.15	0.72	0.78

The *defensive activation* factor had a Cronbach's coefficient of .95. The items of this subscale had high correlations ranging from .65 to .79 with the total of the subscale. The *cognitive-emotional* subscale had a very high Cronbach's coefficient (α = .97) and all item-total correlations were high ranging from .78 to .90. The *exclusion* factor had the lowest Cronbach's coefficient but it was still acceptable (α = .77) and the item-total correlations were moderate to high ranging from .48 to .70. The last factor, *avoidance*, had a Cronbach's coefficient of .84 and items had high correlations with the total of the scale ranging from .64 to .72. The factors' reliability would not increase if any item was deleted.

Convergent Validity

Convergent validity (Table 6) was tested by analyzing correlations between the MSDS and other self-report measures that evaluate theoretically related constructs. As expected, self-disgust is positively correlated with experiential avoidance (AAQ-II), self-criticism (inadequate self and hated self; FSCRS), and psychopathology (depression and anxiety; DASS-21) which suggests that higher scores of self-disgust are

associated with higher levels of self-criticism, experiential avoidance and depressive and anxious symptoms.

In contrast, MSDS was negatively correlated with adaptive emotion regulation processes, namely self-compassion (SELFCS) and reassured self (FSCRS).

Table 6.
Correlation coefficients (two-tailed Pearson r) between the study variables

	Defensive activation	Cognitive-emotional subscale	Exclusion	Avoidance
Compassion (SELFCS)	-.51**	-.62**	-.31**	-.55**
Experiential avoidance (AAQ-II)	.52**	.61**	.34**	.50**
Inadequate self (FSCRS)	.55**	.70**	.32**	.61**
Hated self (FSCRS)	.58**	.73**	.54**	.56**
Reassured self (FSCRS)	-.42**	-.52**	-.30**	-.45**
Depression (DASS-21)	.53**	.60**	.43**	.51**
Anxiety (DASS-21)	.60**	.48**	.38**	.42**

Note. SELFCS = Self-Compassion Scale, AAQ-II = Acceptance and Action Questionnaire II, FSCRS = Forms of Self-Criticizing and Self-Reassuring Scale, DASS-21 = Depression Anxiety Stress Scale 21.
** $p < 0.001$

Gender Differences in Self-Disgust

Independent samples t-tests were conducted to explore the differences between men and women in the self-disgust components (Table 5). We found that men (M = 1.35, SD = 2.39) and women (M = .95, SD = 2.01) differed only in the factor *exclusion*, $t_{(602)}$ = -2.142, p = .033, with men scoring higher. Specifically, this difference was only significant for item 7 (*I drink, take drugs or pills*), $t_{(602)}$ = -2,245, p = .025, what indicates that men (M = .45, SD = .90) have more behaviors of drinking and taking drugs than women (M = .29, SD = .74).

Table 5.
Student's t-test differences between males (N=196) and females (N=408) in the four components of self-disgust

Variables	Males (N=196)		Females (N=408)			
	M	*SD*	*M*	*SD*	*t*	*p*
Defensive activation	7.88	9.74	9.33	10.48	1.65	.10
Cognitive-emotional factor	7.15	9.24	7.51	10.00	.43	.67
Avoidance	2.94	2.39	3.48	3.56	1.75	.08
Exclusion	1.35	2.39	.95	2.01	-2.14	.03

Note. Defensive activation, cognitive-emotional factor, avoidance and exclusion = subscales of Multidimensional Self-Disgust Scale.

Multiple Regressions

Standard multiple regressions were conducted in order to explore how the different components of self-disgust predict depression, anxiety and suicidality.

The regression equation accounted for 40% of the variance in the prediction of depressive symptoms, $F_{(4, 599)} = 101.56$, $p < .001$. The *cognitive-emotional*, *defensive activation* and *exclusion* subscales significantly contributed to the prediction of depression. The *cognitive-emotional* subscale yielded the highest beta (Table 7).

Table 7.
Summary of regression analysis for self-disgust components predicting depression

Predictors	R^2	R^2 Adjusted	F	β	Sig.	VIF	DW
	.40	.40	101.56		<.001		1.992
Defensive activation				.18	<.001	2.36	
Cognitive-emotional factor				.39	<.001	2.32	
Exclusion				.10	.010	1.55	
Avoidance				.06	.233	2.55	

The regression equation accounted for 37% of the variance in the prediction of anxiety, $F_{(4, 599)} = 90.92$, $p < .001$. The *defensive activation* and *cognitive-emotional*

subscales of self-disgust significantly contributed to the prediction of anxiety and defensive activation yielded the highest beta (Table 8). However, *exclusion* and *avoidance* didn't reached significance.

Table 8.
Summary of regression analysis for self-disgust components predicting anxiety

Predictors	R^2	R^2 Adjusted	F	β	Sig.	VIF	DW
	.38	.37	90.92		<.001		2.105
Defensive activation				.51	<.001	2.36	
Cognitive-emotional factor				.21	<.001	2.32	
Exclusion				.03	.487	1.55	
Avoidance				-.10	.059	2.55	

Finally, the regression equation accounted for 52% of the variance, $F_{(4,\ 599)}$ = 163.37, p < .001, in the prediction of suicidal ideation. All components of self-disgust were statistically significant. The best predictor was *cognitive emotional* subscale followed by *exclusion*, *avoidance* and *defensive activation*, respectively (Table 9).

Table 9.
Summary of regression analysis for self-disgust components predicting suicidality

Predictors	R^2	R^2 Adjusted	F	β	Sig.	VIF	DW
	.52	.52	163.37		<.001		1.918
Defensive activation				.13	.002	2.36	
Cognitive-emotional factor				.41	<.001	2.32	
Exclusion				.17	<.001	1.55	
Avoidance				.14	.002	2.54	

The data from the multiple regressions indicated that self-disgust, specifically thoughts of despise and disgust about the self and physiological activation associated

with defensive activation, were the most relevant predictors of depressive and anxious symptoms. Moreover, all the components of this emotional response were good predictors of suicidal thoughts.

Discussion

According to the social mentality theory (Gilbert, 2000), human beings are born with evolved motivational systems to enact specific social roles such as forming alliances or competing for resources. When people interact with themselves, they recruit the same psychobiological systems that are used in social relationships. And so, one can have a self-to-self relation based on cooperation and nurturance with feeling of warmth and soothing or, on the other hand, based on hostility and attack with feelings such as anger and disgust (Gilbert, 2000). Self-disgust has been defined as the devaluation of one's own physical appearance and personality (personal disgust) as well as one's own behavior (behavioral disgust); a maladaptive self-directed generalization of the adaptive response of disgust (Ille et al., 2014; Overton et al., 2008).

Most of the research on self-disgust conducted so far used the Self-Disgust Scale (SDS; Overton et al., 2008). This scale assesses mainly the cognitive component of self-disgust which may limit the comprehension of the multidimensional nature of this emotion. Therefore, the primary purpose of this study was to develop a reliable measure of the different components of self-disgust, the Multidimensional Self-Disgust Scale (MSDS), and to test its factorial validity and psychometric proprieties. In addition, we intended to explore how self-disgust measured by this new instrument is linked to depression and anxiety symptoms and suicidal thoughts.

The dimensionality of the measure was conducted through an exploratory factor analysis. The results revealed a four-factor solution that explained 68.02% of the total

variance. The *defensive activation* subscale (14 items which explained 49.70% of the total variance) regards a physiological activation inherent to the feeling of disgust towards the self. This activation involves shivers, tachycardia, tingling, shortness of breath and vomit, and is directly linked to the Sympathetic Nervous System that impels the individual to escape from or expel the toxic stimulus. This subscale reflects the sensations linked to the threat-protection system and the urge to be safe.

The *cognitive-emotional* subscale (10 items which explained 9.77% of the total variance) concerns disgust thoughts and feelings about the self: deep grief for the self, a desire to escape, critical thoughts, feeling inferior and small and hate or repugnance towards what is perceived as self-disgusting. This kind of thoughts reveals how threatening the self may become and how one may engage in behaviors to get rid of those aspects. This factor is also related to emotional experiences such as anger, hate and contempt.

The *exclusion* subscale (4 items which explained 5.36% of the total variance) consists of ways to exclude, eliminate and get rid of what is perceived as self-disgusting. It includes behaviors such as cutting and burning (excluding) as well as behaviors to regulate emotions (to drink, take pills or drugs) and the basic impulse of burp. All the items concern the motivation to try to take the part of *me* that is considered toxic and disgusting/revolting. The burp is closely linked to the emotion of disgust and occurs when the body attempts to exclude something from the organism.

The *avoidance* subscale (4 items which explained 3.20% of the total variance) regards hiding and avoiding what is disgusting through dissimulation, inhibition, averting the gaze from one's body and trying not to expose to others. Basically, it regards hiding the *disgusting me* or attempting to show a different *me* that is not

revolting and shameful.

The study of internal consistency revealed very good Cronbach's coefficients in all subscales and high item-total correlations, providing evidence that the MSDS is a reliable instrument.

The convergent validity analysis also corroborated our hypothesis. All self-disgust subscales were positively correlated with experiential avoidance and inadequate self and hated self (self-criticism). These results suggest that individuals with high levels of self-disgust (cognitive-emotional subscale is the components with higher correlations with these constructs) tend to present more psychological inflexibility (attempts to suppress and eliminate unwanted private events) and are more self-critical (the self-to-self relation is characterized by pointing faults and flaws, condemning, accusing, hating and disgusting). Self-disgust components presented stronger correlations with the subscale hated-self (FSCRS) which was expected given that self-disgust is linked to more destructive and hateful feelings based on contempt and aversion. The hated-self is the factor of FSCRS more associated to depressive and anxious symptoms (Castilho, 2011).

In regard to depression and anxiety, as expected, all factors of self-disgust presented significant correlations. Recent studies (Overton et al., 2008; Powell, Simpson & Overton, 2013) have been supporting that self-disgust may be part of the fundamental aspects of depression and that self-disgust is a stable affective orientation that predicts depressive symptoms over time. Castilho (2011) also concluded that people with thoughts of despise, hate and contempt for the self have high depressive and anxious symptoms. Self-disgust, together with anxiety and depression are all defensive emotions related to the activation of the threat-protection system (Gilbert, 2009) which can explain their strong association.

Men and women differed only in the *exclusion* subscale, with men scoring higher. Thus, men seem to display more behaviors to regulate their self-disgust such as drinking and taking drugs. These findings suggest that being man may be a risk factor for adopting exclusion behaviors when feelings of self-disgust arise. Previous research has already found that men tend to have more alcoholic behaviors than women (Nolen-Hoeksema, 2004).

The multiple regression analysis revealed that self-disgust accounted for 40%, 37% and 52% of the variance of depression, anxiety and suicidal thoughts, respectively. Concerning depression, with the exception of avoidance, all components were important predictors which provides evidence that negative self-evaluations, the physiological activation and behaviors in order to exclude the disgusting parts of the self are important to explain depressive symptoms. Regarding anxiety, only *defensive activation* and *cognitive-emotional* subscales were significant predictors. This may be explained by the short-term relief of distressing feelings caused by behavioral strategies such as self-harm and avoid exposure. Regarding suicidality, all self-disgust components were important predictors. This suggests that this self directed emotion may be an important factor to target in therapy with people who have recurrent suicidal thoughts. Self-disgust may result in feelings of undesirability and loneliness that lead to a sense of an unworthy life.

This study has several strengths. First, to our knowledge, the MSDS is the first scale to measure self-disgust on a multidimensional way, providing information not only about self-evaluations but also about physiological activation and related behaviors. Although self-disgust has been recognized as a basic emotion towards the self, the response components have been set aside and understudied. Second, the scale

presented very good psychometric proprieties and convergent validity revealing to be a reliable and valid instrument to use in clinical practice and research. Third, the study explored the relationship with emotion regulation processes (including protective and risk factors) and conducted multiple regression analysis with depression, anxiety and suicidal ideation and results pointed that self-disgust is an important construct to be studied in the future.

Nevertheless, the limitations of this study should be taking into account. First, the cross-sectional design of the study does not allow to establish causal relationships between the variables. Second, the sample is not homogenous regarding gender which can limit the generalizability of the findings. Third, test-retest reliability was not assessed as well as divergent validity. Future research should confirm the factor structure of the MSDS in different samples either from the general population (adolescents and elderly) and from clinical settings (borderline borderline personality, eating disorder, major depression) these analyses and also conduct a confirmatory factor analysis to test the theoretical model of self-disgust. Also, it would be important to complement the self-report questionnaire with other measures (physiological measures and interview).

In sum, this study provides preliminary evidence that MSDS is a reliable and valid measure of self-disgust and thus its use is encouraged in clinical and research settings.

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ARTICLE II

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The Toxicity of the Self: The Nature of Self-Disgust

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Abstract

Self-disgust is a maladaptive generalization of the adaptive response of disgust that arises when aspects of the self are perceived as a threat that needs to be avoided or expelled. Despite the growing interest on this subject, there are no studies to date regarding the nature of self-disgust. This study aimed to explore if early experiences of threat and submissiveness, external shame and experiential avoidance would play an important role in the development of self-disgust. Specifically, it was hypothesized that external shame and experiential avoidance would have a mediator role in the relationship between the recall of experiences of threat and subordination and the components of self-disgust (*defensive activation*, *cognitive-emotional*, *avoidance* and *exclusion*).

The sample of this study was composed by 604 participants. Structural Equation Modeling was conducted to analyze the theoretical hypothesized model bearing on the nature of self-disgust. The results suggested that memories of threat and subordination in childhood have an impact on all components of self-disgust through external shame and experiential avoidance. Also, being male may be a risk factor to adopt behaviors of *exclusion* (such as taking drugs, pills, drinking and self-harm).

Key-words: self-disgust, recall of perceived threat and subordination in childhood, external shame, experiential avoidance

Resumo

A auto-aversão é a generalização maladaptativa da resposta de aversão que surge quando aspetos do eu são percecionados como ameaças a ser evitadas ou expelidas. Apesar do crescente interesse neste tema, não existem estudos até ao momento em relação à natureza da auto-aversão. Este estudo teve por objetivo explorar se experiências precoces de ameaça e subordinação, vergonha externa e evitamento experiencial têm um papel importante no desenvolvimento da auto-aversão. Especificamente, foi hipotetizado que a vergonha externa e o evitamento experiencial teriam um papel mediador entre memórias de ameaça e subordinação e os componentes da auto-aversão (ativação defensiva, cognitivo-emocional, evitamento e exclusão). A amostra deste estudo foi composta por 604 sujeitos. Foi realizado um Modelo de Equação Estrutural para analisar o modelo teórico acerca da natureza da auto-aversão. Os resultados sugeriram que memórias de ameaça e subordinação na infância têm um impacto em todos os componentes da auto-aversão através da vergonha externa e do evitamento experiencial. Ser homem foi identificado como um possível fator de risco para a adoção de comportamentos de exclusão (por exemplo, tomar drogas, comprimidos, beber e auto-dano).

Palavras-chave: auto-aversão, memórias de ameaça e subordinação na infância, vergonha externa, evitamento experiencial

Introduction

Some studies have been suggesting that self-disgust is a new construct important to psychopathology. Some people may experience aspects of themselves (psychological features or parts of the body) as disgusting and something that needs to be avoided or expelled (Carreiras & Castilho, 2014; Overton et al., 2008; Power & Dalgleish, 2008 cit in Powell, Simpson & Overton, 2013).

Overton et al. (2008) found that self-disgust has a mediator role between dysfunctional cognitions and depressive symptomatology. The authors showed that self-disgust may be part of the fundamental aspects of depression. The dysfunctional thoughts, via self-disgust, may lead to depressive symptoms. In this study, Overton and colleagues suggested two components of self disgust: *disgusting self* consists of context-free evaluations of the self, and *disgusting ways* refers to evaluations of behavior. The authors added that feelings of shame were associated with the *disgusting self* component whereas feelings of guilt were more related to the *disgusting ways* component.

In 2013, Powell, Simpson and Overton developed a longitudinal study and argued that self-disgust is not an epiphenomenon of depression symptoms but rather a stable affective orientation that predicts depressive symptoms over time. Furthermore, it was found a reverse path between self-disgust and dysfunctional cognitions suggesting a relative reciprocal relationship between both variables.

Carreiras & Castilho (2014) suggested that self-disgust has four main components. The *defensive activation* component regards a physiological activation that involves shivers, tachycardia, tingling, shortness of breath and vomit, which is directly linked to the Sympathetic Nervous System so the individual can escape from or expel

the toxic stimulus. The *cognitive-emotional* subscale concerns thoughts and feelings such as a deep grief for the self, a desire to escape, critical thoughts, feeling inferior and small and hate or repugnance, suggesting that self-disgust recruits anger, hate and contempt. The *exclusion* factor consists of ways to exclude, eliminate and get rid of what is perceived as disgusting such as cutting and burning as well as behaviors to regulate emotions (to drink, take pills or drugs). The last subscale, *avoidance*, regards dissimulation, inhibition, averting the gaze from one's body and trying not to expose to others. Furthermore, this study showed that self-disgust is an important predictor of depressive and anxious symptoms and suicidal thoughts. The author hypothesized that self-disgust arises when one is seen as toxic and repulsive and engages in a hostile relationship with the self, adopting strategies of subordination and submission.

Ille et al. (2014) studied self-disgust in patients with several mental disorders and concluded that they presented higher levels of self-disgust than the general population. The authors also suggested that experiences of physical and/or sexual abuse in childhood result in higher levels of self-disgust.

Although self-disgust has been associated with psychopathology it still remains understudied and unexplored and no studies have looked into the origin and nature of self-disgust and its underlying processes.

Gilbert (1993) and Sloman and Atkinson (2000) argued that individuals who grow in an environment where parents are not able to be reassuring but are threatening, fearful and stressful, the self-other schema will be developed with the idea that the self is inferior, submissive, fragile, is looked down by others. Accordingly, children who recall being forced into unwanted subordinate positions by parents seen as critical and dominant tend to adopt a variety of submissive and "low rank" defensive behaviors,

which are associated with inhibited assertive behaviors, withdraw when challenged, poor initiation and lowered positive affect (Gilbert, 2000; Gilbert et al., 2002). This scared submissive experience had been highly associated with depression (Gilbert & Allan, 1998) and self-critiscism (Irons, Gilbert, Baldwin, Baccus & Palmer, 2006).

Social rank theory (Gilbert, 1989; Prince & Sloman, 1987) argues that submissive and acquisitive behaviors are related to the desire to be valued and loved in the mind of others and to the fear of rejection. When individuals believe they are not attractive or desirable (believe to be inadequate, flawed and inferior), which can lead them to be rejected or to lose social status, the emotion shame is triggered (Gilbert, 1998; 2000). Shame is an involuntary reaction of submission to protect the self from descending in the social ranking, inhibiting others' attacks to oneself and to one's social identity (Michail & Birchwood, 2013). Gilbert (1998) distinguished two types of shame: internal shame occurs when the individual sees himself as inferior and inadequate focusing on one's mistakes and flaws; external shame is experienced when one thinks he is negatively evaluated in the mind of others. More and more studies have been suggesting that shame is a very important emotion in psychopathology (Gilbert, 1998; 2000; Martin, Gilbert, McEwan & Irons, 2014; Tangney & Dearing, 2002; Webb, Heisler, Call, Chickering & Colburn, 2007).

Early shame experiences such as being criticized, abused or rejected may function as central reference points to one's identity such that the person may define himself as defective, inferior and negatively evaluated by others. Such centrality of shame memories may increase the vulnerability to self-criticism, negative affect (e.g. anger, disgust, shame) and submissive behaviors (e.g. avoidance, appeasement; Pinto-Gouveia, Castilho, Matos & Xavier, 2013; Pinto-Gouveia & Matos, 2011).

When an individual engages in negative evaluations about unwanted private events (thoughts, feelings, memories, sensations) and is unwilling to experience them (by deliberately controlling or escaping them) their frequency is likely to increase (Hayes, 1994). This process is called experiential avoidance and when applied rigidly to manage, control and struggle against unwanted private events may become a source of suffering In fact, experiential avoidance is strongly correlated with general psychopathology such as depression, anxiety, trauma and low quality of life (Cribb, Moulds & Carter, 2006; Hayes et al., 2004).

People usually try to suppress or avoid difficult thoughts and feelings because they classify them as “negative”, “to avoid”, “not good”. This is because the human language permits to categorize sets of private events as “good” or “bad”. So that, for instance, thoughts associated to the classification “disgusting” can be actively avoided or suppressed (Hayes, 1994). The danger about experiential avoidance lies on the fact that private events are often unresponsive or increase in frequency when one tries to control them (Hayes et al., 1996).

The aim of this study was to explore the role of recall of perceived threat and submission in childhood, external shame and experiential avoidance in the development of self-disgust. We hypothesized that shame and experiential avoidance would have a mediator role in the relationship between early experiences of threat and subordination and the components of self-disgust (*defensive activation*, *cognitive-emotional*, *avoidance* and *exclusion* subscales).

Method

Participants and Procedure

The present sample is composed by 604 subjects, 251 university students (41.6%) and 353 workers (58.4%), between 18 and 60 years old. 408 participants are females (67.5%) and 196 are males (32.5%) with mean age of 29.36 years (*SD* = 10.87). Men (*M* = 31.89, *SD* = 10.23) are statistically significant older ($t_{(602)}$ = -4.019, $p < .001$) than women (*M* = 28.14, *SD* = 11.71). The participants have a mean of 13.51 years of schooling (*SD* = 3.17) and 68.5% is single (414 subjects).

This was a convenience sample collected in social networks, blogs and informal contexts. 487 participants responded to the questionnaires via online (81%) and 117 in paper form (19%). The questionnaire was preceded by a page to inform the subjects about the study aims and importance of their participation and confidentiality. All participants provide their written informed consent.

Measures

The Acceptance and Action Questionnaire II (AAQ II; Bond et al., 2011) is a very used 7-items measure to evaluate experiential avoidance and psychological inflexibility, two main constructs in ACT (e.g. *I'm afraid of my feelings*). Subjects rate each statement on a Likert-style scale of 7 points (1 = *never true*; 7 = *always true*). The higher the scores, the higher the levels of psychological inflexibility and experiential avoidance. This measure has better psychometric properties than AAQ and AAQ-I versions: the Cronbach's coefficient is .84 and test-retest reliability .81 (3 months) and .79 (12 months). Portuguese version (Pinto-Gouveia, Gregório, Dinis, & Xavier, 2011)

has also a good Cronbach's coefficient (.90) and good convergent and discriminant validity. In this study the AAQ-II has a Cronbach's coefficient of .91.

The Early Life Experiences Scale (ELES; Gilbert, Cheung, Grandfield, Campey & Iron, 2003) was designed to measure recall of personal feelings of perceived threat and subordination in childhood. The 15 items are rated on a 5-point Likert-scale (1 = *completely untrue*; 5 = *very true*) focusing on recall of perceived threat (6 itens, α = .89) and feeling subordinate and acting in submissive way (9 itens, α = .85). The total scale has a good Cronbach's coefficient (.92). Portuguese version (Lopes & Pinto-Gouveia, 2005) is composed by 16 items and subject rate the scale on a 5-point Likert-scale. In this study we used the total of scale whose Cronbach's alpha was .92.

The Multidimensional Self-Disgust Scale (MSDS; Castilho, Pinto-Gouveia, Pinto & Carreiras, *submitted manuscript*) was designed to measure self-disgust (the feeling of disgust towards the self) on its components. This measure has 32 items rated on a 5-point Likert scale (0 = *Never*; 4 = *Always*). The items are grouped in 4 factors: the *defensive activation* (α = .95) regards the physiological component (e.g. *My heart beats fast*), *cognitive-emotional factor* (α = .97) is related to thoughts and emotions (e.g. *I feel diminished, inferior and small*), *exclusion* (α = .77) consists of ways to exclude and eliminate what is perceived as self-disgusting (e.g. *I feel like cutting, burning or excluding that part of me*) and *avoidance* (α = .84) regards hiding and avoiding it (e.g. *I avoid exposing myself to others*). This measure has good convergent validity.

The Other As Shamer (OAS; Goss, Gilbert & Allan, 1994) original version is a scale designed to evaluate external shame (how individuals feel other people see them). This measure is composed by 18 items and subjects should specify the frequency of their own feelings and experiences of external shame on a 5-point Likert-scale (0 =

never; 4 = *almost always*). Cronbach's coefficient of this scale is good (.93). To this study was used the Other As Shamer Brief-Version (OASB; Matos, Pinto-Gouveia & Duarte, *submitted*) which consists of an 8-itens scale where the subjects rate the statements on a 5likert-point (0 = never; 4 = almost always). The scaled revealed good internal consistency (α = .85) and good concurrent and divergent validity. In this study the internal consistency was .94.

Analytic Procedure

Data was analyzed using SPSS (Statistical Package for the Social Sciences), version 20 (IBM Corp, Armonk, NY, USA) and AMOS version 20. Descriptive statistics were conducted to explore the sample's characteristics and independent samples t-tests were analyzed were used to test for gender differences.

Pearson's Product-moment correlations were conducted to analyze the correlation between the variables. Regarding the magnitude and according to Cohen (1988), correlation coefficients between .10 and .30 were considered low, between .30 and .50 were considered moderate and above .50 were considered high.

To test the mediator effect of acceptance (AAQ-II) and shame (OAS) in the relationship between recall of experiences of personal feelings of perceived threat and subordination in childhood (ELES) and the four components of self-disgust a path analysis with a dual mediator model was conducted.

The Maximum Likelihood method was used to analyze the significance of the model's path coefficients and to compute fit indices. Bootstrap resampling procedure (2000 cases) was conducted to analyze the significance of the effects. The results were considered significant at the .05 level if the 95% CI did not include the zero (Kline,

2005).

Results

Descriptive Statistics

The means and standard deviations for the total sample were analyzed and independent samples t-tests were conducted to explore the differences between men and women in all the variables (Table 1). We found that men (M = 1.35, SD = 2.39) and women (M = .95, SD = 2.01) differed in the factor exclusion, $t_{(602)}$ = -2.142, p = .033, with men scoring higher.

Table 1.
Means (M) and standard deviations (SD) for the total sample (N=604) and student's t-test differences between males (N=196) and females (N=408)

Variables	Total (N=604)		Males (N=196)		Females (N=408)			
	M	*SD*	*M*	*SD*	*M*	*SD*	*t*	*p*
Defensive activation	8.86	10.26	7.88	9.74	9.33	10.48	1.65	.10
Cognitive-emotional factor	7.39	9.76	7.15	9.24	7.51	10.00	.43	.67
Avoidance	3.30	3.50	2.94	2.39	3.48	3.56	1.75	.08
Exclusion	1.08	2.15	1.35	2.39	.95	2.01	-2.14	.03
AAQ-II	22.70	9.24	22.31	9.46	22.89	9.14	.73	.47
OAS	7.06	6.23	6.95	5.92	7.11	6.38	.30	.76
ELES	33.12	12.93	32.49	12.47	33.43	13.15	.83	.41

Note. Defensive activation, cognitive-emotional factor, avoidance and exclusion = subscales of the Multidimensional Self-Disgust Scale, AAQ-II = Acceptance and Action Questionnaire II, OAS = Other As Shamer, ELES = Early Life Experiences Scale.

Correlations

Pearson's correlations between recall of personal feelings of perceived threat and subordination in childhood, external shame, experiential avoidance and the four

components of self-disgust (*defensive activation*, *cognitive-emotional*, *exclusion,* and *avoidance* subscales) were conducted (Table 2). All correlations were positive and significant ($p < .001$). Specifically, recall of perceived threat and subordination in childhood was highly associated with external shame ($r = .51$) and moderately with *experiential avoidance* ($r = .40$), *defensive activation* ($r = .44$), *cognitive-emotional* subscale ($r = .48$), *exclusion* ($r = .30$) and *avoidance* ($r = .44$). External shame showed high correlations with experiential avoidance ($r = .57$) *defensive activation* ($r = .61$), *cognitive-emotional* subscale ($r = .70$), *avoidance* ($r = .60$) and a moderate correlation with *exclusion* ($r = .45$). Finally, experiential avoidance had high correlations with *defensive activation* ($r = .52$), *cognitive-emotional* subscale ($r = 61$) and *avoidance* ($r = .50$) and moderate with *exclusion* ($r = .34$)

Table 2.
Pearson's product moment correlations between all the variables in study

Variables	1	2	3	4	5	6	7
1. Defensive activation	1	-	-	-	-	-	-
2. Cognitive-emotional factor	.64**	1	-	-	-	-	-
3. Exclusion	.58**	.49**	1	-	-	-	-
4. Avoidance	.69**	.72**	.47**	1	-	-	-
5. ELES	.44**	.48**	.30**	.44**	1	-	-
6. OAS	.61**	.70**	.45**	.60**	.51**	1	-
7. AAQ-II	.52**	.61**	.34**	.50**	.40**	.57**	1

Note. Defensive activation, cognitive-emotional factor, avoidance and exclusion = subscales of the Multidimensional Self-Disgust Scale; AAQ-II = Acceptance and Action Questionnaire II; OAS = Other as Shamer; ELES = Early Life Experiences Scale.
** $p < .001$

The Mediator Effect of External Shame and Experiential Avoidance in the Relationship between Recall of Perceived Threat and Subordination in Childhood and Self-Disgust

Structural Equation Modeling (SEM) was conducted to analyze the structural theoretical hypothesis bearing on the nature of self-disgust. The mediation model was tested through a path analysis that allows us to examine structural relationships and the direct and indirect effects between exogenous (latent variables whose changes are not explained by the model) and endogenous variables (latent variables that are influenced by the exogenous variables in the model), controlling errors (Byrne, 2010; Maroco, 2010; Shumacker & Lomax, 2010). In this model, recall of personal feelings of perceived threat and subordination in childhood is considered an independent exogenous variable, external shame and experiential avoidance are considered endogenous mediators and finally, the components of self-disgust are dependent endogenous variables.

Given that there are statistically significant differences between men (M = 1.35, SD = 2.39) and women (M = .95, SD = 2.01) in *exclusion* ($t_{(602)}$ = -2.142, p = .033) the variable gender was controlled in the model. The correlation between gender and exclusion was positive, significant and low (r = .09, p = .033).

The initial hypothesized model was tested through a fully saturated model (with zero degrees of freedom), revealed a perfect fit. All the paths were statistically significant, so model fit indices were not examined. The saturated model is presented on figure 1.

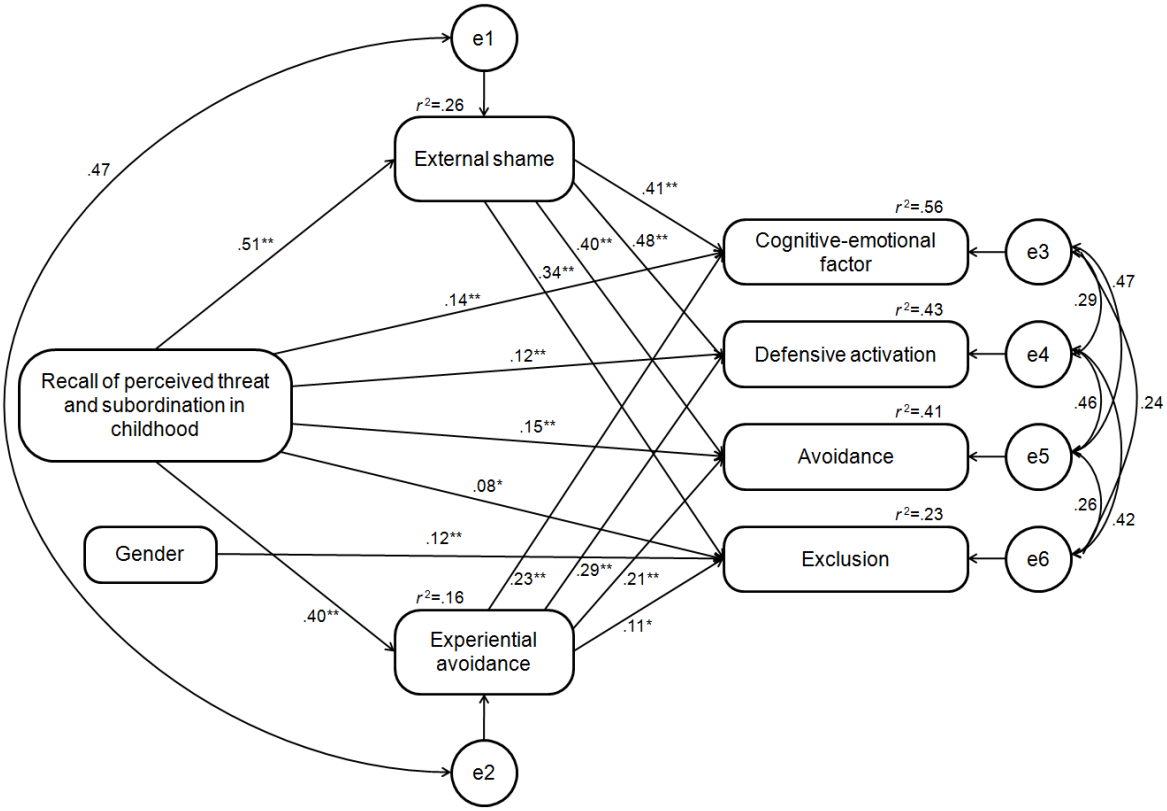

*Figure 1.*Mediator effect of external shame and experiential avoidance on the relationship between recall of perceived threat and subordination in childhood and the components of self-disgust

** $p < .001$

* $p < .05$

The results revealed that recall of perceived threat and subordination in childhood significantly predicts 26% of external shame and 16% of experiential avoidance. The three variables together explain 56% of the *cognitive-emotional* factor variance. Memories of subordination and threat in childhood revealed a significant total effect of β = .475, CI [.288; .430], p = .001. The indirect effect of external shame was β = .245 (.512 x .478) which suggests that part of the effect of the early memories on the *cognitive-emotional* component of self-disgust is explained by external shame. This indirect effect represented 52% (.245 / .475) of the total effect of memories of threat and subordination on *cognitive-emotional* subscale. There was also an indirect effect of

experiential avoidance, β = .114 (.399 x .286), which represents 24% (.114 / .475) of the total effect of recall of perceived threat and subordination in childhood on the *cognitive-emotional* subscale. These results suggest that experiential avoidance also plays a role in the relation between memories of threat and subordination and this component. The indirect effect was significant according to the bootstrap resampling method 95% CI [.223; .329], *p* = .001. There was also a significant direct effect of recall of perceived threat and subordination in childhood on *cognitive-emotional* subscale, β = .116, 95% CI [.033, .142], *p* = .002.

Regarding *defensive-activation*, the model explains 43% of variance. The recall of perceived threat and subordination in childhood presented a significant total effect of β = .444, CI [.282; .424], *p* = .001. The mediation by external shame was β = .209 (.512 x .408) showing that part of the effect of childhood memories on *defensive activation* is explained by external shame. This indirect effect corresponded to 47% (.209 / .444). We also found a mediation by experiential avoidance of β = .092 (.399 x .230) corresponding to 21% (.092 / .444) of the total effect of recall of perceived threat and subordination in childhood on the component *defensive activation*. The indirect effect was significant according to the bootstrap resampling method 95% CI [.191; .293], *p* = .001. There was also a significant direct effect of recall of perceived threat and subordination in childhood on *defensive activation* (β = .143, 95% CI [.051, .176], *p* = .001).

Concerning the component *avoidance*, the model explains 41% of the variance. The total effect of memories of subordination and threat in childhood on this component was significant (β = .443, CI [.097; .144], *p* = .001). External shame had an indirect effect on this relationship of β = .205 (.512 x .400) corresponding to 46% (.205 / .443)

of the total effect. This suggests that external shame plays an important role in the relationship between memories of perceived threat and subordination in childhood and behaviors in order to hide or avoid the disgusting parts of the self. Experiential avoidance also presented a mediation effect on this relationship of β = .085 (.399 x .212) what represents 19% (.085 / .443) of the total effect. The indirect effect was significant according to the bootstrap resampling method 95% CI [.063; .096], *p* = .001. Data showed a significant direct effect of recall of perceived threat and subordination in childhood on avoidance (β = .154, 95% CI [.019, .068], *p* = .001).

Finally, the model explained 23% of the component *exclusion*. Recall of perceived threat and subordination in childhood revealed a significant total effect on exclusion of β = .304, CI [.036; .066], *p* = .001. The indirect effect mediated by external shame was β = .177 (.512 x .345) and consists of 58% (.177 / .304) of the total effect, suggesting that part of the effect of the early memories on the *exclusion* component of self-disgust is explained by external shame. There was also an indirect effect through experiential avoidance of β = .043 (.399 x .109) corresponding to 14% (.043 / .304). The indirect effect was significant according to the bootstrap resampling method 95% CI [.026; .050], *p* = .001. Results also revealed the direct effect of recall of perceived threat and subordination in childhood on *exclusion* was not significant (β = .084, 95% CI [-.001, .028], *p* = .065).

Discussion

Some authors have been highlighting the importance of disgust when directed to the self and suggesting that future research should continue to study this subject (Carreiras & Castilho, 2014; Ille et al., 2014; Overton et al., 2008; Powell, Simpson &

Overton, 2013; Power & Dalgleish, 2008 cit in Powell, Simpson & Overton, 2013). More and more evidence has been showing strong associations between self-disgust and depressive symptomatology, anxiety and suicidality. Powell, Simpson and Overton (2013) argued that self-disgust is a stable affective orientation that can predict depression over time. Overton et al. (2008) suggested that self-disgust has two main components (*disgusting self* and *disgusting ways*) linked to evaluations whereas Carreiras and Castilho (2014) advocate four components (*defensive activation*, *cognitive-emotional*, *exclusion* and *avoidance* subscales) including physiological activation, recruited emotions and behaviors. Both studies provide evidence that self-disgust is a complex and multidimensional construct.

Nevertheless, the nature and precedents of self-disgust have remained unknown as no studies so far focused on what may lead to this self-directed emotion. At this point, the objective of this study emerged: to build a theoretical model to understand the roots and nature of self-disgust and what may contribute to its development hypothesizing the role of early experiences of threat and subordination, external shame and experiential avoidance.

The results obtained with the product-moments Pearson's correlations were expected based on previous research. The recall of perceived threat and subordination in childhood, external shame and experiential avoidance were significantly associated with each other and with the four components of self-disgust.

Based on the pattern of correlations found between the variables, and in order to better understand their individual contribution to the explanation of self-disgust, a dual mediation model where external shame and experiential avoidance mediate the relationship between memories of threat and subordination in childhood and the four

components of self-disgust (*defensive activation*, *cognitive-emotional*, *avoidance* and *exclusion* subscales) was tested.

The model revealed a perfect fit and all paths were statistically significant. The results suggested that the relationship between memories of perceived threat and subordination in childhood (e.g. having parents who are not able to reassure, calm and tranquilize the child) and the components of self-disgust is mediated by external shame (seeing the self as inferior and undesirable in the mind of others) and experiential avoidance (trying to control unwanted private events).

Cognitive-emotional subscale revealed to be the outcome better explained by the model. Specifically, memories of threat and subordination either directly and through external shame and experiential avoidance explained more than fifty percent of this component. These results suggest that feeling inferior in the mind of others and attempts to suppress private events may help explain how a childhood marked by submissiveness may lead to self-disgust thoughts (deep grief for the self, a desire to run away from it, critical thoughts).

External shame and experiential avoidance also revealed to be important mediators between memories of subordination and threat in childhood and the other components of self-disgust, namely physiological activation (shivers, tachycardia, tingling, shortness of breath and vomit), avoidance (to avoid exposing those parts or trying to dissimulate them) and exclusion behaviors (ways to exclude, eliminate and get rid of those aspects). The effect of these internal processes represented a large proportion of the association between early experiences of threat and subordination and self-disgust, with the exception of the *exclusion* component in which such processes accounted for the total effect.

In sum, the results point to the important role of negative experiences in childhood with significant others in the development of self-disgust. In fact, early exposure to threats in the form of abuse, criticism, rejection, overprotection and neglect is known to be associated with a range of psychological difficulties in adulthood (Perris, 1994; Richter et al., 1994; Rutter et al., 1997). Moreover, and according to Baldwin (1992, 2005) individuals may internalize their relationships with significant others in relational schemas which will influence their subsequent relationships and also their sense of self and self-to-self relationship. Thus, children who have been criticized, shamed or rejected by others may come to think about and treat themselves in the same way (Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006). For instance, if experiences of being despised and diminished become internalized one may develop disgust for the self or particular aspects of the self (behaviors, traits, physical appearance).

Although all these contributing findings, some constrained limitations should be pointed. Given that this study had a cross-sectional design, no causal conclusion can be drawn from the results. However, as suggestion to future research, a longitudinal design study would be useful to better understand the causal relationship between the variables. Protective factors should also be explored such as compassion, acceptance and mindfulness. These constructs seem to be important to people who feel they are undesirable, disgusting and unwilling to experience these feeling and thoughts (Gilbert, 2010). Also, the sample recruited for this study had more women than men which can limit the generalizability of these findings. It would be important to confirm this model in other samples, specifically people with depressive symptoms, with personality and eating disorders or people who have been abused in childhood. The retrospective character of ELES, where participants are asked to recall memories of events in

childhood, risks leading to answers influenced by selective memory which undermines the exactitude of the information and context where those events occurred. Thus, future studies should involve other informants to confirm the self-reported data.

The findings of the present study provide a great contribution to the literature and clinical practice, alerting to the need of early interventions (e.g. parenting early intervention) and preventive programs. A more reassuring, confident and caring environment between parents and children may prevent people from engaging in hostile and critical relationships with themselves and in evaluations of the self as inferior and undesirable. On the other hand, acceptance and defusion of one's negatives thoughts and feelings (as opposed to experiential avoidance) may be important protective factors against self-disgust. This study identified crucial variables to the development of self-disgust which is strongly associated with psychopathology and suicidality. Therapies focused on decreasing levels of shame and experiential avoidance (promoting psychological flexibility and acceptance) should be essential to people with high levels of self-disgust (e.g. Compassion-Focused Therapy, Acceptance and Commitment Therapy).

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