

Shame proneness and eating disorders: a comparison between clinical and non-clinical samples

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Abstract

Purpose To explore the relationship between shame proneness, eating disorders outcomes and psychological aspects of patients with eating disorders (ED).

Methods Sixty-six girls applying for inpatient treatment for ED and 110 female undergraduate students were assessed using the Eating Disorder Inventory-3 and the Shame Proneness Scale of the Test of Self-Conscious Affect.

Results Shame proneness showed significant correlations with several ED components and psychological scales of EDI-3, with some variations across the subgroups. Shame proneness levels were significantly higher in the clinical group than in controls.

Conclusions Shame proneness can be an important component for the development and the maintenance of ED due to a strong correlation not only with ED symptoms but also with psychological aspects of this disease, in both clinical and non-clinical samples.

Keywords Shame proneness · Eating disorders · Subclinical

Introduction

The relationship between shame and eating disorders (ED) has been known since early case descriptions of ED sufferers, and has been identified both in general populations and in clinical populations with ED [1–4]. In particular, most of the recent literature has focused on deepening the relationship between shame and appearance-related aspects of the disease, such as body dissatisfaction and the drive for thinness [5–7]. Moreover, some studies found patients with ED reporting higher levels of shame than a non-clinical sample [1, 8]. Therefore, further investigations to explore the associations between characterological shame and different components of ED are needed [1].

The scientific literature suggests a useful distinction between shame as a transient emotional experience and shame as a personal proneness [9, 10]. The former interpretation leads to the feelings of helplessness, an escape from shameful elicitors, and avoidance of potential shameful situations. Whereas occasional or short-lived emotional states of shame help to protect social relationships by warning about the possibility of rejection [11], continuous experiences of shame can further exacerbate shame proneness, resulting in a global negative self-attribution [12]. As a psychological trait, shame proneness is linked to stable internal causes characterized by a sense of shrinking or of ‘being small’ and by a sense of worthlessness [11].

Within the research tradition related to ‘shame as pre-disposition’, there are further distinctions, such as the internal shame versus external shame described by Gilbert [3], or different perspectives related to the various aspects of experiences of which one might feel ashamed [13]. For the purpose of the current study, however, we were interested in considering shame proneness from the self-evaluative perspective provided by Lewis [14] and later

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supported by Tangney and colleagues [12]. The present model considered shame proneness as involving maladaptive, avoidant and concealing responses elicited by stable, global, and negative attributions about the self. Although a considerable number of instruments measure shame proneness from different points of view [12], the assessment tool that best fits Tangney's perspective of shame as personal proneness is the Test of Self-Conscious Affect (TOSCA) [15]. Empirical research of the last 15 years using the TOSCA has provided considerable evidence that encourages the adoption of this theoretical model in different contexts [10, 12, 16].

As excessive feelings of shame are generally recognised as one of the key emotional symptoms experienced by people with eating disorders [1], shame proneness should be correlated with psychological variables that are often prominent in ED.

Ascetic behaviour and perfectionism, often common in ED, could be reinforced by high shame proneness levels. They could be very effective for gaining control over an unsatisfactory body shape and reducing shameful feelings [17]. In a similar way, the unrealistic expectations, fear of others' scrutiny, and harsh self-criticism characterize that perfectionism can be easily linked with shame proneness [18]. Moreover, shame proneness can lead to low self-esteem, emotional avoidance, ambivalence, and unworthiness that are, respectively, linked with interoceptive deficits [19], emotional dysregulation [12], and low self-esteem [20]. All these aspects are often prominent in people with ED.

Shame proneness can lead to interpersonal alienation as a person may try to avoid triggers of potentially shaming situations. This tendency could be linked to pervasive feelings of loneliness and isolation typical of personal alienation and interpersonal insecurity [21]. Furthermore, maturity fears and social insecurity can be reinforced by shame proneness, as people with eating disorders sometimes feel that they are defective and are not able to meet the overwhelming demands of adulthood or to form social interactions with others [12]. Therefore, the recent literature [1, 21] has stressed the importance of analysing not only the relationship between shame proneness and behavioural variables with a direct effect on the body (such as drive for thinness, bulimia, and body dissatisfaction), but also that with psychological ones.

The present paper aims to explore connections between important psychological variables usually prominent in ED and shame proneness and specifically in terms of the following questions: (1) Do inpatients with ED demonstrate higher levels of shame proneness compared with the non-clinical population? (2) Is shame proneness associated with EDI-3 symptom subscales (drive for thinness, bulimia, and body dissatisfaction) across clinical and non-clinical participants? (3) Is shame proneness associated with specific

psychological variables of EDI-3 (low self-esteem, personal alienation, interpersonal insecurity, interpersonal alienation, interoceptive deficits, emotional dysregulation, perfectionism, asceticism, maturity fears, ineffectiveness, interpersonal problems, affective problems, overcontrol, and general psychological maladjustment) across clinical and non-clinical participants?

As it is more difficult to recruit a large number of ED inpatients than ED outpatients, it would also be interesting to observe correlations in small groups of anorexic (AN), bulimic (BN), and binge-eating (BED) inpatients as a first pilot study exploring the link between shame proneness and psychological ED variables in groups of people with different subclinical conditions.

Methods

Participants

Participants from a clinical population included 66 adult females applying for inpatient treatment for ED at the Casa di Cura Villa Margherita (age mean = 23.36, SD = 4.86). Diagnosis met DSM-V criteria for three subclinical groups: AN ($n = 35$), BN ($n = 18$), and BED ($n = 13$). Participants from a non-clinical population included 102 adult female undergraduate students from the University of Milan-Bicocca (age mean = 22.56, SD = 3.59).

Two separate recruitments were conducted, one from a clinical population and the other from a student population: similar procedures and measures were used. Participants were tested individually. All participants received an envelope in which they found a form for informed consent, personal information, and two self-reports, the EDI-3 [22], a widely used questionnaire for the assessment of eating disorders, and the TOSCA [15, 23], which yields scales for predisposition to self-conscious emotions. The order of the two questionnaires was counterbalanced.

Measures

Eating Disorder Inventory-3

The Italian version of Eating Disorder Inventory-3 (EDI-3) is a 91-item self-report questionnaire widely used both in research and in clinical settings to assess the symptoms and psychological features of ED [22]. The EDI-3 is a self-report measure composed of primary eating disorder risk scales (such as drive for thinness, bulimia, and body dissatisfaction) and psychological scales. Psychological scales are low self-esteem, personal alienation, interpersonal insecurity, interpersonal alienation, interoceptive deficits, emotional dysregulation, perfectionism, asceticism, and

maturity fear. Moreover, EDI-3 includes composite scales, such as the Eating Disorder Risk Composite (EDRC) scale calculated by adding primary scale *T* scores and Global Psychological Maladjustment (GPM) scores that consist of the summed *T*-scores of all nine of the psychological scales of the EDI-3.

Test of self-conscious affect

The shame proneness subscale of the Italian version of the Test of Self-Conscious Affect (TOSCA) was used [15, 23]. The TOSCA is a scenario-based measure that describes 15 hypothetical situations that the respondent can encounter in everyday life. The present self-report allows the assessment of shame disposition in such a way as to assess individual differences in the degree to which people are prone to experience shame across a range of situations involving failures or transgression.

Statistical analysis

Data collected from both samples were analysed using SPSS, the Statistical Package for Social Science (Version 17 for Mac). Descriptive statistics of Body Mass Index (BMI), symptom, and psychological eating disorders scales of EDI-3 and TOSCA shame proneness were calculated for the non-clinical and the three clinical conditions. One-way ANOVA was conducted between clinical and non-clinical groups to examine significant differences related to shame proneness levels. Several one-way ANOVAs were also conducted between subclinical and non-clinical groups to assess significant differences in terms of ED clinical symptoms (drive for thinness, bulimia, body dissatisfaction, and EDRC) and psychological outcomes (self-esteem, personal alienation, interpersonal insecurity, interpersonal alienation, interoceptive deficits, emotional dysregulation, perfectionism, asceticism, maturity fears, ineffectiveness, interpersonal problems, affective problems, overcontrol, and GPM).

Correlations between the TOSCA shame scale and EDI-3 subscales were assessed with Pearson's *R* coefficient. All correlations were two-tailed. Group differences were assessed with the Kruskal–Wallis test, as the number of included participants for each subgroup was not sufficient for a parametric test. A *p* level of 0.05 was considered significant.

Results

Descriptive statistics of shame proneness, BMI, EDI-3 primary, and composite scales are reported in Table 1, which shows different mean levels consistent with the non-clinical, the clinical, and the three subclinical conditions.

One-way ANOVA evidenced significant differences related to shame proneness comparing non-clinical and clinical subjects ($F_{1,166} = 31.277$, $p < 0.001$) showing higher scores for the clinical one.

One-way ANOVA related to eating disorders symptoms evidenced significant differences for drive for thinness ($F_{3,164} = 40.360$, $p < 0.001$), bulimia ($F_{3,164} = 7.897$, $p < 0.001$), body dissatisfaction ($F_{1,164} = 38.172$, $p < 0.001$), and EDRC ($F_{1,164} = 38.172$, $p < 0.001$) showing higher scores for the three clinical subgroups than for the non-clinical participants ($F_{1,164} = 42.399$, $p < 0.001$).

One-way ANOVA related to psychological eating disorder variables evidenced significant differences related to low self-esteem ($F_{1,164} = 36.819$, $p < 0.001$), personal alienation ($F_{1,164} = 27.923$, $p < 0.001$), interpersonal insecurity ($F_{1,164} = 19.322$, $p < 0.001$), interpersonal alienation ($F_{1,164} = 36.819$, $p < 0.001$), interoceptive deficits ($F_{1,164} = 21.922$, $p < 0.001$), emotional dysregulation ($F_{1,164} = 13.318$, $p < 0.001$), perfectionism ($F_{1,164} = 5.238$, $p < 0.001$), asceticism ($F_{1,164} = 24.240$, $p < 0.001$), maturity fears ($F_{1,164} = 12.720$, $p < 0.001$), ineffectiveness ($F_{1,164} = 36.421$, $p < 0.001$), interpersonal problems ($F_{1,164} = 28.356$, $p < 0.001$), affective problems ($F_{1,164} = 28.296$, $p < 0.001$), overcontrol ($F_{1,164} = 18.712$, $p < 0.001$), and general psychological maladjustment ($F_{1,164} = 37.878$, $p < 0.001$).

Proneness to shame showed several correlations with EDI-3 subscales, although they were not always consistent across clinical conditions. Significant correlations between shame and all EDI-3 subscales were found in the non-clinical group, whereas jeopardised relationships were found in people with ED (cf. Table 2). No correlation between shame and BMI was found. Group differences were found for shame ($H = 22.78$, 3 *df*, $p < 0.001$). In particular, shame proneness was higher for clinical group (median values were 48 for AN, 45 for BN, and 47 for BED), than for non-clinical participants (median = 41). Higher shame proneness reported in TOSCA for clinical group evidenced a higher personal predisposition regarding negative global attribution towards a defective self that can trigger dysfunctional eating behaviours.

Discussion

The present pilot study aims to explore the relevance of shame proneness and its correlation with different components of eating disorders in an adult female group composed of inpatients with eating disorders and an adult female sample of students.

The present data must be viewed with caution for several reasons. A major limitation in this investigation is the cross-sectional design, which does not allow the

Table 1 Descriptive statistics of BMI, TOSCA shame proneness, and EDI-3 primary and secondary scales

NC		Clinical	AN	BN	BED
BMI					
Mean	19.73	20.98	18.81	22.00	24.91
SD	3.06	9.27	5.25	12.24	10.8
Shame proneness					
Mean	39.12	47.79	49.60	45.00	46.77
SD	10.1	9.35	8.04	9.14	12.27
Drive for thinnes					
Mean	41.82	80.73	81.49	83.09	75.46
SD	24.26	19.15	19.04	18.77	20.48
Bulimia					
Mean	45.54	67.06	64.46	64.61	77.46
SD	29.56	28.84	30.98	30.70	17.47
Body dissatisfaction					
Mean	46.90	83.92	84.83	79.56	87.54
SD	25.04	16.00	14.76	21.52	8.19
EDRC					
Mean	45.75	82.58	82.20	81.67	84.85
SD	23.43	15.10	15.13	18.48	9.74
Low self-esteem					
Mean	45.27	82.20	83.23	83.11	78.15
SD	24.83	17.32	18.30	12.58	20.72
Personal alienation					
Mean	40.27	79.74	83.80	71.28	80.54
SD	25.33	18.41	14.10	24.17	17.04
Interpersonal insecurity					
Mean	42.80	72.21	77.97	67.28	63.54
SD	27.77	21.49	17.10	24.61	24.47
Interpersonal alienation					
Mean	41.03	74.70	81.31	64.33	71.23
SD	25.64	22.61	15.08	27.95	26.77
Interceptive deficits					
Mean	49.68	80.88	82.89	77.56	80.08
SD	26.69	20.21	22.17	20.85	13.19
Emotional dysregulation					
Mean	43.76	69.50	70.89	69.72	65.46
SD	26.63	24.41	22.48	22.21	32.74
Perfectionism					
Mean	47.95	66.44	69.60	62.56	63.31
SD	29.47	31.32	30.40	36.65	26.99
Asceticism					
Mean	43.73	76.76	77.57	76.94	74.31
SD	25.13	23.26	23.26	23.12	25.11
Maturity fears					
Mean	39.18	65.44	64.69	63.33	70.38
SD	26.80	27.29	26.65	29.44	27.57

Table 1 continued

NC		Clinical	AN	BN	BED
Ineffectiveness					
Mean	42.50	78.83	83.51	74.39	72.38
SD	23.76	17.67	13.60	20.68	20.55
Interpersonal problems					
Mean	41.25	75.58	81.51	68.00	70.08
SD	26.20	21.29	14.19	26.93	25.23
Affective problems					
Mean	47.53	79.77	82.03	76.56	78.15
SD	25.18	16.49	15.17	18.44	17.28
Overcontrol					
Mean	46.92	76.62	78.23	76.61	72.31
SD	26.28	23.14	23.11	23.90	23.47
GPM					
Mean	46.36	83.68	86.36	80.61	79.38
SD	25.85	15.14	12.98	16.33	17.94

establishment of causal directions. The causal standing of each underlying relationship requires, therefore, a more definitive investigation. Second, the aetiology of these disorders is presumably complex [21], and although shame proneness may be a contributing factor, there are probably many other mediating variables yet to be explored [24]. Moreover, the sample size was sufficient for the analysis but was nonetheless relatively small, especially regarding inpatients with binge-eating disorder. Nonetheless, the binge-eating disorder subgroup was included in the analysis, because the present data represented an interesting starting-point for a pilot study. In addition, as no male participants were recruited to the study, the results cannot be generalised to men with eating disorders. Finally, the use of adult female inpatients alone does not make it possible to generalise the results to outpatients, men, or younger patients.

Whereas BMI descriptive statistics evidenced intermediate values for non-clinical group and bulimia subgroup, the anorexia subgroup showed restricted BMI in line with their more pervasive eating restricted behaviours and the binge-eating participants showed the highest BMI level in line with their overeating behaviours.

Comparing clinical and non-clinical groups, one-way ANOVA results evidenced that shame proneness level for patients with eating disorder is significantly higher than for non-clinical participants. This is consistent with the previous results [1], and it confirms a greater presence of shame proneness in inpatient treatment for ED.

One-way ANOVA evidenced significantly different EDRC mean levels between the non-clinical and clinical

Table 2 Correlations between TOSCA shame proneness scale and EDI-3 primary and secondary scales

	NC	C	AN	BN	BED
<i>N</i>	102	66	35	18	13
BMI	0.117	0.08	0.205	0.011	0.200
EDI-3 primary scales					
Drive for thinness	0.295**	0.075	0.329	−0.235	−0.053
Bulimia	0.231*	−0.067	−0.165	−0.038	0.227
Body dissatisfaction	0.355**	0.120	0.126	−0.083	0.588*
Low self-esteem	0.546**	0.455**	0.406*	0.495*	0.564*
Personal alienation	0.394**	0.421**	0.365*	0.371	0.497
Interpersonal insecurity	0.356**	0.541**	0.370*	0.686**	0.553*
Interpersonal alienation	0.277**	0.558**	0.078	0.782**	0.755**
Interceptive deficits	0.489**	0.495**	0.462**	0.530*	0.652*
Emotional dysregulation	0.267**	0.059	−0.165	0.221	0.208
Perfectionism	0.199*	0.401**	0.460**	0.375	0.316
Asceticism	0.260**	0.390**	0.344*	0.306	0.585*
Maturity fears	0.207*	0.214	0.122	0.088	0.559*
EDI-3 composite scales					
Ineffectiveness	0.486**	0.401**	0.319	0.445	0.359
Interpersonal problems	0.348**	0.573**	0.182	0.754**	0.735**
Affective problems	0.418**	0.373**	0.220	0.535*	0.376
Overcontrol	0.259**	0.505**	0.430**	0.517*	0.669*
General psychological maladjustment	0.478**	0.593**	0.442**	0.600**	0.742**
EDRC	0.340**	0.130	0.253	−0.054	0.216

NC non-clinical, C clinical, AN anorexia nervosa, BN bulimia nervosa, BED binge-eating disorder

* $p < 0.05$

** $p < 0.01$

groups, showing higher risky conditions for the clinical group. The non-clinical sample mean suggested a contained risk for eating disorder related to participants from the general population. Conversely, all the mean levels of the clinical conditions were above 68, which are usually considered as the cut-off point between the clinical and non-clinical subjects for the EDRC scale. More specifically, comparison analyses reported significantly more severe eating disorder symptoms in the three clinical subgroups in terms of drive for thinness, bulimia, and binge eating compared to the non-clinical group. These data are consistent with the clinical subgroups composed of patients that were undergoing medical treatment for eating disorders. Similarly, the three clinical subgroups showed more severe ED-related psychological symptoms than the non-clinical group. Correlations found suggest that neither in the clinical group nor in the non-clinical group shame proneness showed correlation with BMI, which is consistent with the previous results [25]. In the non-clinical group, all the eating disorder symptoms and all the psychological variables showed a strong correlation with shame proneness. As found by Troop and Redshaw [7], shame was strongly associated with excessive concern about body weight and body shape. In a non-clinical

population, high scores on most of these variables are usually related to a significant risk of eating disorders. Although it is not possible to provide any casual inferences, consistent with the previous study [1, 25], these data suggest that shame proneness is related to eating disorders symptomatology.

Differently from non-clinical participants, eating disorder symptom variables did not show correlations with shame proneness in the general clinical group and in three different subclinical groups. The only exception was the association with shame proneness and body dissatisfaction for binge-eating subgroup. These data confirmed that the relation between shame proneness and eating disorder is likely to be complex, dynamic, and variable [7]. It is possible that fluctuations and changes in symptomatology and physical variables correlate in different ways with personal predisposition to shame in different stages of illness/treatment.

Considering the general clinical group, almost all the psychological EDI-3 primary scales show significant correlations with shame proneness. First, shame proneness is strongly related to the general psychological maladjustment variable: as previously reported, higher scores in this composite scale indicate the presence of psychological

maladjustment and suggest a dysfunction in both personal and interpersonal psychological domains. As found by Robinaugh and McNally [26], the present data evidenced the link between shame proneness and psychological variables related to eating disorders beyond the different subclinical conditions. Consistent with the previous findings [19], shame proneness correlated with low self-esteem and ineffectiveness in the general clinical group. One explanation for this association suggests that eating disorder individuals with low self-esteem and ineffectiveness could try to cope with negative events through emotional eating behaviours [1]. Moreover, shame proneness was correlated with both interpersonal problems and personal alienation in the general clinical group. This suggests that eating disorders sufferers' sense of being small and unattractive could be related to the low quality of their relationship with other people and with the desire to escape judgment by hiding themselves [10].

As regard the psychological aspects of eating disorders in the three different subclinical conditions (AN, BN, and BED), data shared some similarities.

Interestingly, although in all the three subclinical groups, shame proneness showed strong correlations with interoceptive deficits, and this relation was particularly strong in the anorexia subgroup: for these patients, the tendency to experience pervasive feelings of worthlessness elicited by shame proneness was correlated with greater difficulties in consciously perceiving signals arising from the body. This link seems to be crucial to understanding the processes related to starvation and food denial typical of anorexic patients. In a similar way, the anorexia subgroup showed the strongest associations between shame proneness and perfectionism. Consistent with the previous results [18], unrealistic expectations elicited by perfectionism were linked with the perceptions of oneself as inadequate and flawed typical of shame proneness. Within this perspective, higher shame proneness for anorexic participants corresponded to higher rigidity and persistence in pursuing unrealistic success.

Although in all the three subclinical groups, shame proneness showed strong correlations with interpersonal insecurity, and this relation was particularly strong in the bulimia subgroup: the desire to hide (typical of shame proneness) is perhaps owed to a greater incidence of vomiting and compensatory behaviours immediately after meals or in the middle of social situations. Consistent with the previous results [20], this tendency could easily lead to pervasive feelings of loneliness and isolation typical of interpersonal insecurity. Interestingly, the presence of high shame proneness was significantly correlated with interpersonal problems and interpersonal alienation in the binge eating and in the bulimia subgroups. Within this

perspective, a shame–blame sequence is likely to be destructive of interpersonal relationships and estrangement. Defensive shame-based blame and anger may subsequently lead either to withdrawal (by either party or both parties) or to escalating antagonism, blame, and counterblame [12], and this negative pattern could be particularly pervasive for binge-eating and bulimic patients.

Instead of relating to interpersonal variables, in anorexic participants, the correlation with shame proneness was more focused on personal variables, such as personal alienation, asceticism, and overcontrol. As expected from the previous results [17], in the anorexic subgroup, shame proneness is strongly linked to a greater degree of self-control and impulse control. Within this perspective, it is possible that the strong sense of inferiority elicited by shame proneness is linked to a strong urge to gain control over their own lives through food restriction and certain eating behaviours.

The findings of the study provide support for the view that shame proneness is related to eating disorder symptomatology because of a strong correlation with psychological variables. Therefore, shame proneness not only correlates with body shame or drive for thinness as confirmed by the previous results [1], but is also associated with many psychological aspects related to very different domains of eating disorders.

This interpretation of the findings might have practical applications in suggesting that shame proneness could usefully be a key factor of attention in therapeutic contexts [27, 28]. As proposed by Ferreira and colleagues [29], clinicians should give more thought to the assessment of self-conscious affects in their ED patients and to the exploration of the possible origins and significance of these affects in the presentation of each case. It would be interesting for future research to confirm the present correlations in a larger sample of eating disorder inpatients comparing TOSCA data with those of tools specialised in analysing internal shame and external shame [30, 31] and observe which eating disorder psychological variables are more related to one or the other. Nevertheless, these data seem to be particularly promising for future experimental studies examining the efficacy of psychological intervention programmes for psychological features of eating disorders targeted at reducing shame proneness.

Compliance with ethical standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest. The authors contributed equally to this work.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964

Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

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