Plain Language Summary Title:

How having suffered abuse can influence our body image

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Our childhood is important for the construction of our self-image. When people feel threatened in their trusting relationship, they can feel ashamed and guilty. These emotions can lead to the development of eating disorders and body image distortions. To explore this, we have set up a study of how adverse life experiences in childhood can affect the way we see our bodies. We ask participants with an eating disorder to close their eyes and feel their body. Then we ask them to choose a shape from a list of 9 shapes. Participants with childhood trauma tend to choose a distorted shape in relation to their actual figure. We believe that closing one's eyes connects people to our inner emotions and influences our body perception. It will be useful in helping patients to identify and treat negative emotions so that they feel more comfortable with their bodies.

INTRODUCTION

The World Health Organization defines child maltreatment (CM) as "all acts that result in probable or actual harm to a child's physical and mental health" (WHO, 2020). It can occur in the context of a relationship of trust and has been described in all social strata, economic classes and ethnic groups (WHO, 2020). Childhood physical abuse, childhood physical neglect, childhood emotional abuse, childhood emotional neglect and childhood sexual abuse have been described as different types of CM (WHO, 2020).

Low self-esteem, substance abuse, eating disorders, impulsivity, psychosis and suicide attempts have been reported in adults who were abused in childhood (McLaughlin et al., 2020; Ordóñez-Camblor et al., 2014). In addition, changes in body function and increased body sensitivity have been described in survivors of sexual abuse (Dyer et al., 2013). It has been reported how childhood exploration of the environment, pain, hunger and our relationship with our parents contribute to the construction of our body image (Troisi et al., 2006).

Body image is a complex construct that includes attitudinal, perceptual, emotional and cognitive aspects (Quick & Byrd-Bredbenner, 2014; Tylka & Wood-Barcalow, 2015). The emotional and cognitive component of body image is associated with body dissatisfaction, the perceptual dimension leads to body misperceptions, and the behavioral dimension determines eating attitudes (Quick & Byrd-Bredbenner, 2014; Tylka & Wood-Barcalow, 2015). Disordered eating and body image distortion (BID) can appear when people feel physically threatened (Dyer et al., 2013). Shame, body dissatisfaction and disordered eating in adulthood have been linked to the lack of warm experiences in childhood (Gois et al., 2018).

Eating disorders (ED) are serious illnesses with high psychiatric comorbidity (Treasure et al., 2020). BID and body dissatisfaction are associated with a worst outcome of the illness (Keel & Brown, 2010). Adverse life events (ALEs) like emotional and sexual abuse have been associated with concerns about body shape in bulimia nervosa, while physical abuse has been found in patients with bulimia and binge eating disorder with more concerns about weight (Guillaume et al., 2016). All types of abuse have been associated with high body mass index (BMI), but emotional abuse appears to be more prevalent in individuals with low BMI (Mason et al., 2015; Dunkley et al., 2010).

Features as impulsivity, perfectionism low self-esteem, anxiety and depression have been described in adolescent who develop an ED (Ordóñez-Camblor et al., 2014). Impulsivity has been associated with self-injurious behavior in both ED patients and patients with affective disorders who have experienced interpersonal ALEs (Armour et al., 2016). Generally, perfectionism, relationships problems, and introversion have been described in anorexia nervosa, while bulimia nervosa and anorexia purging patients use to present more impulsivity (Johnson et al., 2002; Fernández-Aranda et al, 2008). Also, impulsivity and perfectionism are associated to worst evolution in ED (Fernández-Aranda et al, 2008). Usually, impulsiveness is associated to more purging symptoms and suicidality (Fernández-Aranda et al, 2008). Moreover, ED patients with purging behavior tend to present more BID (Grunwald et al., 2002; Madowitz et al., 2015).

To date, trauma exposure is considered a non-specific risk factor for ED patients, and studies reported prevalence rates of different ALEs between 5% and 66% (Kjaersdam Telléus et al., 2021; Backholm et al., 2013). Specific ALEs, mostly within a relationship of trust, have been assessed (Kjaersdam Telléus et al., 2021; Backholm et al., 2013; Lejonclou et al., 2014; Molendijk et al., 2017). However, it is not known whether the development of psychopathology is only due to the occurrence of ALEs or to some of its conceptualized dimensions such as the timing, number of traumatic experiences or chronic trauma (Russotti et al., 2021). Difficulties in cognitive functioning and emotion dysregulation have been reported in chronically maltreated children (Cowell et al., 2015; Warmingham et al., 2019). Poorer functioning, more depression and more concerns about shape and weight have been described in ED patients who experienced multiple traumas throughout their lives (Keel & Brown, 2010; Villarroel et al., 2012). Moreover, trauma exposure in ED has been associated to cognitive schema such us emotional deprivation and social isolation, the latter being possible mediating factor between ALEs and eating psychopathology (Meneguzzo et al., 2021)

Depending on the timing of trauma exposure, different psychopathological presentations have been described according to the period in which the maltreatment occurred (Dunn et al., 2018). Exposure to physical or sexual abuse in early childhood (2-6 years) has been associated with the onset of depression, post-traumatic symptoms and anxiety in adulthood (Warmingham et al., 2019; Capretto, 2020). In addition, trauma exposure before the age of six could influence the proper development of secure attachment or good emotion regulation (Kaplow & Widom, 2007). The early years of development are crucial for both neurobiological maturation and relational skills, and it has been reported poorer functioning in adults with early childhood maltreatment (Warmingham et al., 2019; Capretto, 2020).

Currently, few studies have assessed the age of onset of ALEs and its relationship with BID in ED patients. Most studies (Guillaume et al., 2016; Dunkley et al., 2010) examine different subtypes of childhood maltreatment and their relationship with bulimic symptoms or BMI, but few studies consider a specific age for analysis. Mason et al. (2015) describes how interpersonal ALEs before the age of eleven was correlated with high BMI and body dissatisfaction through the onset of binge eating.

As exposure to different types of maltreatment is the common pattern, analyzing other factors beyond the categories of absence and presence of trauma may improve our recognition of psychopathology and may be the way to develop new interventions (Jackson et al., 2019).

Our hypothesis is that ED patients who have experienced ALEs before the age of thirteen have more distorted BID.

The general aim of this study is to assess the presence of ALEs before the age of thirteen in patients with ED and to evaluate differences within groups.

Specific aims are:

a) To describe the relationship between interpersonal ALEs before the age of thirteen and BID,

b) To investigate the relationship of interpersonal ALEs before the age of thirteen with perfectionism and impulsivity.

METHOD

Study design and participants

This cross-sectional, retrospective study was approved by the Ethics Committee of the Hospital. Participants were adult outpatients consecutively admitted to the ED unit. Inclusion criteria for the study were age between 18 and 65 years, diagnosis of restrictive and purging anorexia nervosa, bulimia nervosa and binging disorder according to the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, fifth edition-DSM5 (APA, 2013), good knowledge of the Spanish language and provision of written informed consent. Individuals with a BMI < 15, high risk of suicide, psychotic symptoms or intellectual disability were excluded. It is suggested that association between ALEs and eating symptoms decrease with weight restoration (Sjögren et al., 2023), so we wanted to ensure that eventually associations were not due to a low weight. The final sample consisted of 79 ED patients. The 68.2% had a university degree and 59.5% were employed. All participants gave informed consent.

Measures and procedures

All participants were assessed with a clinical interview to obtain the following variables: Age, sex, ED diagnosis, duration of illness, years of treatment and number of hospitalizations. We also measured height and weight. To assess clinical features of ED, presence of ALEs and BID the following test were performed:

- *Traumatic Life Events Questionnaire (TLEQ):* This is a self-report questionnaire (Kubany et al., 2000) with 23 items (dichotomous answer YES/NO) to assess different ALEs. Subjects select the most traumatic experiences, marking the age of the trauma and the level of distress associated. It allows the analysis of common ALEs throughout life, beyond the patient's choice. It has been tested on different populations and has good psychometric properties (internal consistency between 0.74 and 0.91).

- *Contour Drawing Rating Scale (CDS)*: Developed and validated by Thompson & Gray, (1995). It consists of nine masculine and nine feminine drawings, graded in size from 1 to 9, according a progression of BMI from a low weight to obesity. Generally, the 3 central figures represent a normal weight (BMI: 18,5-24). People choose their ideal body and which drawing they think could represent their actual weight. It measures body dissatisfaction and the presence of a distorted BID and has good internal consistency (Cronbach's alpha coefficient: 0.92).

- *Eating Disorders Inventory (EDI-2):* This self-administered 91-item questionnaire (Garner, 1993) on a 6-point Likert scale (1=never; 6=always) explores various clinical characteristics of ED patients. Scores are divided into 11 subscales: Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears, Ascetism, Impulse Regulation and Social Insecurity. It allows differentiation between ED patients and the non-clinical population. Its internal consistency range is 0.83-0.93.

Recruitment took place between January 2021 and May 2022. Eligible patients were invited to participate in the study. Those who agreed were asked to attend a personal interview at the hospital, during which they signed the informed consent and completed questionnaires.

The study's primary outcome measure was the presence of ALEs. Based on previous research (Thomas et al., 2021), we categorized reported ALEs into two groups: 1) Interpersonal ALE, and 2) non-Interpersonal ALE. The interpersonal ALEs, were divided considering if they occurred within a trusting relationship (intrafamilial) or not (non-intrafamilial), except for the presence of sexual abuse (which included both intrafamilial and non-intrafamilial). Additionally, we conducted an analysis that took into account the presence of ALEs before the age of thirteen, and the sexual abuse as the latter being the most studied in ED (Madowitz et al., 2015).

Secondary outcomes measured included BMI, levels of perfectionism, impulse control, and the presence of BID as measured by the CDS. To investigate the latter, we segmented the body that patients "see" (visual BID) from the one they "sense" (non-visual BID). When the researcher presented the participants the 9 drawings shapes on CDS, the first instruction was *"choose the figure that you think that represent your body when you are looking at the mirror*" and, the second, *"shut your eyes and try to sense your body before selecting the figure you think reflect your actual shape"*. The actual BMI was taken from the researcher. The difference between the figure they chose and the actual shape according the BMI defined the BID. We performed three categories: 1) overestimation of silhouette, 2) underestimation of silhouette, and 3) absence of BID when the figure they choose was superior, inferior or the same as the actual BMI respectively.

Similarly, categories were identified for ED. The sample population was divided into: 1) Impulsive ED, encompassing bulimia nervosa, binging disorder, and purging anorexia nervosa (74.68%), 2) Perfectionist ED, consisting of atypical anorexia nervosa and restrictive anorexia nervosa (20.26%), and 3). ED Not Otherwise Specified (5.06%).

Statistical Analysis

All statistical analyses were performed using SPSS 24.0 (Statistics, I. S., n.d.). Continuous measures were evaluated for significant differences in psychopathological characteristics among ED patients using T-Student and Mann-Whitney tests, while Fisher's exact test was employed for ordinal measures. A chi-squared test was conducted to explore potential disparities between categorical variables, followed by linear regression models to investigate the predictive value of factors including experiencing an ALE before the age of 13, BMI, and number of hospital admissions on BID (assessed using CDS), alongside psychological factors of perfectionism and impulsiveness (assessed by EDI-2). All statistical tests utilized a 2-tailed approach, with statistical significance set at .05.

RESULTS

The global sample (79 participants) was composed of 96.2% women with a mean age of 37.6 years (range: 18-59, SD: 12.03). The mean disease duration was 17.1 years (range: 1-47; SD: 2.9) and 44.3% reported at least one hospital admission (mean: 0.81;

range: 0-5; SD: 1.1). 72 participants (91%) reported the occurrence of ALEs in their lives; among them, 76.5% reported experiencing severe or extreme distress. The mean duration of continuous trauma was 1.7 years (range=0-13; SD=3.2).

We describe the sample regarding ALEs characteristics and BID.

Characteristics of ALEs

The two most distressing ALEs reported by patients were the death of a loved one and sexual abuse. The remaining ALEs reported included physical abuse, intra-familial violence, car accidents, and serious illnesses. Seven participants (8,86%) did not report ALEs. Table 1 below describes ALEs categories, emotional impact, duration, and age at which ALE occurred in the sample that reported it. Interpersonal ALEs were reported in the 53% of the sample, with 26% of those involving sexual abuse. The 55.6% of ED patients with ALEs experienced it before the age of thirteen.

TABLE 1: Categories and characteristics of ALEs reported by participants (N: 72)

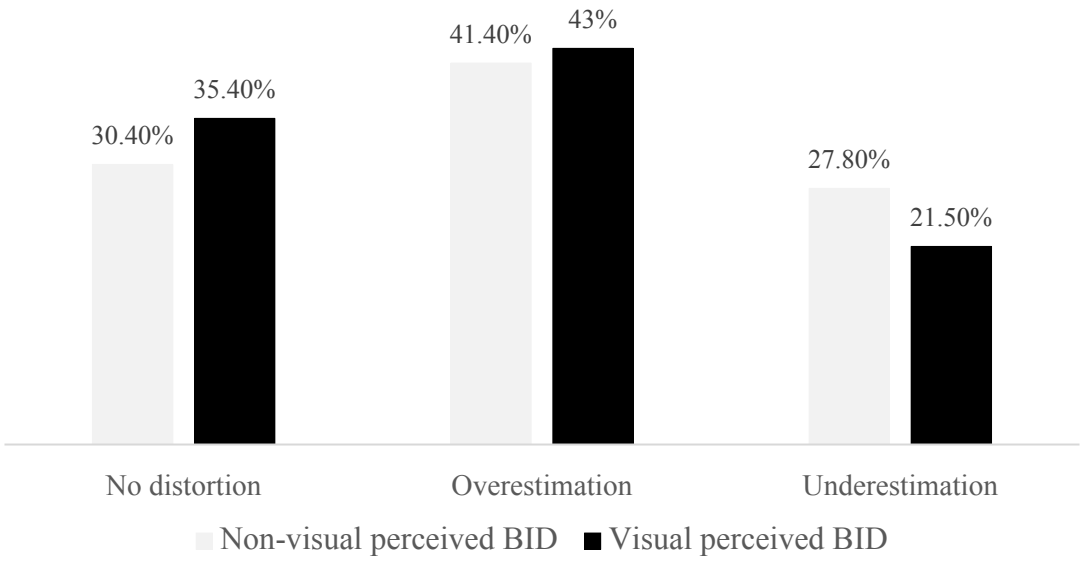
Categories of ALEs	**N**	**%**
Non-Interpersonal	34	47
Interpersonal:		
Sexual abuse (both intrafamilial and non-intrafamilial)	19	26,6
Other intrafamilial interpersonal ALEs	13	18
Other non-intrafamilial interpersonal ALEs	6	8,4
Emotional impact associated to the ALEs		
Mild	4	5,5
Moderate	13	18
Severe	24	33,3
Extreme	31	43,2
Duration of ALEs		
Single	43	59,7
Continuous	29	40,3
Age of ALEs		
Under age of thirteen	40	55,6
After age of thirteen	32	44,4

Abbreviations. ALEs: Adverse life event; N: Number participants

Description of BID in the sample

Figure 1 presents the BID of the participants who reported ALEs. They tend to overestimate their shape, both visually and non-visually. Although there were no significant differences, a higher percentage of patients exhibited non-visual BID (69.6%) compared to visual BID (64.5%).

Figure 1. Type of body image distortion of ED participants with trauma when looking at the mirror (visual under or overestimation) and after closing the eyes (non-visual under or overestimation)



Relationship between ALEs, impulsiveness, perfectionism and BID.

Findings revealed that patients who reported interpersonal ALE (p= .029) and ALEs before age thirteens (p= .038) had more BID.

Sexual abuse was significantly more prevalent in patients with bulimic symptoms (p=.018); although, we found no association with a BID.

Impulsive ED patients presented more visual BID compared with restrictive ED patients (Chi-square p=.045). Furthermore, interpersonal ALEs were linked to impulsivity (p= .049) and perfectionism (p= .041).

Patients with ALEs before the age of thirteen exhibited more non-visual BID compared with patients that reported ALEs after this age (p=.038). No significant differences were observed in other psychopathological variables, including BMI, as detailed in Table 2.

Table 2. Psychopathological differences between ED patients with ALEs before age of 13 and ED patients with ALEs after age of 13 (N: ALE* 72)

Variable	ALEs before thirteens	N	M	SD
Years of illness evolution	Yes	40	16,25	11,54
	No	32	18,37	11,12
Number of hospitalizations	Yes	40	,97	1,27
	No	32	,65	1,00
Years of treatment	Yes	40	7,42	6,32
	No	32	9,78	7,16
BD (CDS)	Yes	40	3,20	2,19
	No	32	2,70	2,26
Visual BID	Yes	40	,82	1,60
	No	32	,39	1,47
Non- visual BID*	Yes	40	,85	1,85
	No	32	-,01	1,75
EDI-DT	Yes	40	12,25	6,69
	No	32	15,03	26,85
EDI-B	Yes	40	2,37	3,63
	No	32	4,18	4,63
EDI-BD	Yes	40	17,85	10,95
	No	32	16,59	10,95
EDI-In	Yes	40	8,77	6,63
	No	32	8,00	5,85
EDI-P	Yes	40	7,40	4,11
	No	32	6,68	4,40
EDI-ID	Yes	40	5,32	3,51
	No	32	5,50	4,38
EDI-IA	Yes	40	10,20	8,69
	No	32	11,68	8,86
EDI-MF	Yes	40	5,97	4,38
	No	32	5,56	5,11

Variable	ALE before thirteens	N	M	SD
EDI-A	Yes	40	5,85	4,54
	No	32	5,81	3,78
EDI-I	Yes	40	5,05	5,94
	No	32	4,25	4,91
EDI-SI	Yes	40	6,80	4,83
	No	32	6,90	5,02
Debut illness BMI	Yes	40	20,62	6,50
	No	32	22,23	6,70

Abbreviations. ALEs: Adverse life events; N: Number of participants; M: Media; SD: Standard deviation; BD: Body Dissatisfaction; CDS: Contour Drawing Scale; BID: Body image distortion; EDI-DT: *Eating Disorder Inventory,* subscale drive for thinness; EDI-B: *Eating Disorder Inventory,* subscale bulimia; EDI-BD= *Eating Disorder Inventory,* subscale body dissatisfaction; EDI-In= *Eating Disorder Inventory,* subscale ineffectiveness; EDI-P: *Eating Disorder Inventory* subscale perfectionism; EDI-ID: *Eating Disorder Inventory* subscale interpersonal distrust; EDI-IA: *Eating Disorder Inventory* subscale Interoceptive Awareness; EDI-MF: *Eating Disorder Inventory* subscale Maturity Fears; EDI-A: *Eating Disorder Inventory* subscale Ascetism; EDI-I: *Eating Disorder Inventory* subscale Impulse Regulation; EDI-SI: *Eating Disorder Inventory* subscale Social Insecurity; BMI: Body Mass Index. * p value significant <.05

We conducted a linear regression analysis to examine the correlation between interpersonal ALEs before the age of thirteen and BID. We tested various models, with other variables included as possible predictors of BID beyond ALE before the age of thirteen. The first model featured only BMI at the onset of illness, the second incorporated ALEs before thirteens, and the third comprised interpersonal ALEs before thirteens, BMI, and the number of hospitalizations.

In addition, we examined the impact of ALEs before thirteens on impulsivity and perfectionism. Table 3 shows that experiencing ALE before the age of thirteen is an indicator of visual BID in adulthood.

Table 3. Factors influencing visual BID in ED patients with ALEs

Model		Non-standardized coefficients		Standardized coefficients	T	p-value
		B	SE	Beta		
1	Debut BMI	-,084	,026	-,344	-3,21	,002
2	Debut BMI	-,087	,025	-,357	-3,43	,001
	Interpersonal ALEs before thirteens	,829	,351	,246	2,36	,021
3	Debut BMI	-,084	,025	-,342	-3,34	,001
	Interpersonal ALE before thirteens	,783	,345	,232	2,27	,026
	Number of hospitalizations	,283	,138	,209	2,04	,044

a. Dependent variable: visual BID

Furthermore, a higher number of hospitalizations and a higher BMI at the onset of illness are associated to more BID.

This model is also effective in predicting non-visual BID (p= .021), and both impulsiveness (p= .001) and perfectionism (p= .021), being ALEs before thirteens the independent variable.

DISCUSSION

To the best of our knowledge, this is the first study to evaluate how the age of trauma influence BID in ED patients. Generally, studies focus on the affective or attitudinal aspect of BID and they evaluate specific ALEs such as emotional or sexual abuse, without references to perceptual BID (Guillaume et al., 2016; Molendijk et al., 2017). Mason et al. (2015) examined a sample of children under the age of 11, but their findings only indicate CM as a risk factor for high BMI in adulthood, without any reference to BID. Generally, ED patients reporting ALEs during childhood present more body dissatisfaction, being the binges or post-traumatic symptoms the mediating factors between the trauma and the body dissatisfaction (Backholm et al., 2013; Mitchison et al., 2019).

The general aim was to assess the presence of ALEs before the age of thirteen in ED patients. Additionally, we aimed to examine group differences regarding BID and

evaluate its relationship with impulsivity and perfectionism. As hypothesized, our findings showed that ED patients who reported ALEs before age of thirteens had greater BID compared to those with ALEs after this age; they tend to overestimate their body shape both visually and non-visually. However, the difference between the groups was only significant for non-visual BID.

ALEs have been linked to body dissatisfaction and emotion dysregulation (Backholm et al., 2013; Dyer et al., 2013; Molendijk et al., 2017). Otherwise, positive familial relationships are crucial in constructing our self-image during middle childhood (Castañeda-García et al., 2021; Gois et al, 2018). Dunn et al., (2013) highlighted the negative effects of interpersonal ALEs during early childhood (ages 6 to 12) on emotion regulation. Parents, by interacting with their children, touching them, calming their emotions, and helping them to recognize when they are unwell, promote the construction of their body image (Troisi et al., 2006).

To investigate this, we segmented the body that patients "see" at the mirror from the one they "perceive" when they close their eyes. It is possible that negative emotions associated with childhood ALEs influence body image perception when patients close their eyes. Maybe the BID is represented by an "wounded soul" to whom we should address our interventions. As an example, although not yet supported because of inconsistent data, new approaches could come from movement therapy trough which we can try to reach emotions that patients could not express verbally (Kleinman & Hall, 2006).

When examining other categories of ALEs beyond the timing, the presence of interpersonal ALEs, particularly those occurring before age 13, has been found to be associated to both visual and non-visual BID. No other comparable examples have been reported in the literature to our knowledge. One hypothesis suggests that there is a relationship between BID in ED patients and brain function changes in the parietal cortex when they engage in visual self-assessment (Grunwald et al., 2002). These regions have also been linked to emotional expression and show neurobiological changes in adults who suffered abuse during childhood (Nishitani et al., 2021). Previous studies have reported interpersonal ALEs among ED patients with posttraumatic stress disorder, bulimic symptoms and more body dissatisfaction (Mason et al., 2015; Monell et al., 2018). Chemisquy and Helguera (2018) propose that individuals with high perfectionism are sensitive to stressful relationships. Perhaps children who have experienced interpersonal familial ALEs develop coping strategies to manage negative emotions, such as exerting control over their bodies. This may impact the accuracy of their self-evaluation when looking in the mirror due to the influence of their perfectionist traits. This idea is supported by our results that find how interpersonal ALEs are associated to perfectionism.

With regards to sexual abuse, we did not find association with body dissatisfaction or BID. However, we found a correlation with bulimic symptoms. This differs from the findings reported in other studies, where sexual abuse is reported in ED patients displaying more body dissatisfaction and BID (Madowitz et al., 2015). Typically, greater concerns about body shape are linked to bulimia, and greater perceptual distortion is associated with anorexia (Grunwald et al., 2002; Madowitz et al., 2015). Nevertheless, our study found that impulsive ED patients (bulimia, binge eating disorder, and purging

anorexia) have higher levels of visual BID. Central coherence is the ability to process global information despite minor details, and it is supported by visual perception (Happé & Frith, 2006). Individuals with impulsive ED usually report deficit in central coherence (Darcy et al., 2015). This deficit may hinder their ability to evaluate shapes accurately.

Linear regression demonstrated how interpersonal ALEs experienced before the age of 13 predicted both visual and non-visual BID. BID was previously considered an independent factor for predicting low weight in anorexia or fasting in bulimia (Stice et al., 2017). Our findings suggest that BID is a dependent variable which can be modulated by interpersonal ALEs during middle childhood and a high BMI at the onset of illness. Furthermore, no discrepancies were observed for the remaining psychopathological characteristics of the disorder regarding to the timing of exposure to trauma.

Finally, our findings suggest that the presence of interpersonal ALEs before the age of thirteen, are linked to higher levels of perfectionism and impulsivity. Studies have reported instances of dissociation and emotion dysregulation in patients with an ED who have experienced bullying or sexual abuse (Madowitz et al., 2015). Impulsivity and perfectionism are two key psychopathological dimensions of ED patients, and they can influence disease progression (Fernández-Aranda et al, 2008). In our study increased hospitalizations are associated with greater BID, consistent with prior research indicating that patients with a severe illness course tend to report more hospitalizations (Keel & Brown, 2010). Experiencing interpersonal ALEs in childhood may prompt individuals to manage negative emotions through body control, because of unrecognized feelings such as shame (Gois et al., 2018; Madowitz et al., 2015). The need to exert control on these emotion after having suffered ALEs can lead to the adoption of coping strategies like fasting so to prevent feelings of insecurity. When these strategies fail because of the presence of impulsivity, binge eating may occur, which also aids the patient in managing negative emotions.

In conclusion, experiencing trauma exposure before the age of 13 can be a risk factor for developing BID, impulsivity, and perfectionism in adulthood:

a) These traits are important for the development of an ED;
b) Binge eating and fasting could be features of emotion dysregulation;
c) Bulimic symptoms may present as a phenotype of the impulsivity associated to the ALEs;
d) People with perfectionist traits after a trauma could use the starvation to control emotions associated to the ALEs;
e) Interventions during childhood aimed at identifying stressful relationships or preventing CM may prove effective in modifying BID.

Therapeutic efforts should then be redirected to identify patients with ALEs in childhood in order to apply more appropriate interventions based on the reconstruction of a secure attachment through the therapeutic relationship so that patients can develop a positive body image (Tylka & Wood-Barcalow, 2015).

Strengths and Limitations

To the best of our knowledge, this is the first study to separate the perceptual component of BID into visual and non-visual silhouette, in order to improve our understanding of it. Specific interventions focused on the "body approach" could help improve the perceptual component of a distorted BID, and could also aid in the course of the illness. Our study has addressed this issue by using DSM5 (APA, 2013) criteria with current patients. Furthermore, the method is easily replicable. Additionally, we were unable to identify any other studies in the literature that report the effects of trauma timing exposure on BID.

Limitations arise from using a retrospective assessment approach and cross-sectional design. Furthermore, in investigating trauma exposure through self-report questionnaires, participants may not disclose all relevant information. Nevertheless, studies suggest that there are only a few false positive cases (Pinto & Maia, 2013), and our participants provided anonymous responses, enabling honest reporting. Additionally, our study had a relatively small sample size and no control group. However, ED investigations often have insufficient samples unless data collection is employed.

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