ORIGINAL ARTICLE

Non-suicidal self-injury in patients with eating disorders: nuclear aspects.

Autolesiones no suicidas en pacientes con trastornos de la conducta alimentaria: Aspectos nucleares

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Palabras clave:

Trastorno de la conducta alimentaria, autolesiones no suicidas, autoestima, impulsividad, alexitimia, Bulimia nerviosa, Anorexia nerviosa, Bulimia, Anorexia, Perfeccionismo, Delgadez, Satisfacción personal, Pérdida de peso, Insatisfacción corporal, Comportamiento autolesivo, Trastornos alimentarios y de la conducta alimentaria, Comportamiento impulsivo, Comportamiento obsesivo, Comportamiento de alimentación.

Abstract

Background:

Through the culture of thinness, increasingly promoted in our society as a beauty canon, it is not surprising that the number of people affected by eating disorders is increasing.

Objective:

This research aims to study the relationship between non-suicidal self-injuries and nuclear aspects of eating disorders specified along with this article.

Methods:

The sample consisted of 60 women diagnosed with anorexia and bulimia. Questionnaires assessing impulsivity, body satisfaction, alexithymia, body attitude and self-esteem were administered. Participants with non-suicidal self-harm were compared with those without it, and participants with anorexia with and without self-harm and participants with bulimia with and without self-harm were compared.

Results:

Differences were found in body dissatisfaction= 5.71; p ≤0.01), body attitudes= 4.80; p ≤0.02), self-esteem= 14.09; p ≤0.00) and impulsivity (t= 3.39; p ≤0.01) between participants with and without non-suicidal self-harm.

Conclusions:

These are key factors for the clinical area in the treatment of eating disorders to prevent the presence of self-harm, as it allows focusing the treatment target on those aspects such as dissatisfaction and impulsivity, which are key in the development of self-harm.

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Conflict of Interest:

The authors declare that there is no conflict of interest.

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Resumen

Introducción:

A través de la cultura de la delgadez, cada vez más promovida en nuestra sociedad como canon de belleza, no es de extrañar que este aumentado el número de personas afectadas por Trastornos de Conducta alimentaria.

Objetivo:

Estudiar la relación entre las autolesiones no suicidas y aspectos nucleares del trastorno de conducta alimentaria que se especifican a lo largo de este artículo.

Métodos:

La muestra ha sido formada por 60 mujeres diagnosticadas de anorexia y bulimia. Se administraron cuestionarios que evaluaban la impulsividad, satisfacción corporal, alexitimia, actitud corporal y autoestima. Se compararon aquellas participantes que presentaban autolesiones no suicidas con las que no lo presentaban, además se compararon participantes con anorexia con y sin autolesiones y participantes con bulimia con y sin autolesiones.

Resultados:

Se encontraron diferencias en insatisfacción corporal = 5,71; $p \leq 0.01$), en actitudes corporales= 4.80; $p \leq 0.02$), autoestima= 14.09; $p \leq 0.00$) e impulsividad, (t= 3.39; $p \leq 0.01$) entre participantes con y sin autolesiones no suicidas.

Conclusiones:

Estos son factores clave para la clínica en el tratamiento de los trastornos de conducta alimentaria para prevenir la presencia de autolesiones, ya que permite enfocar el objetivo del tratamiento a aquellos aspectos como la insatisfacción e impulsividad, que son claves en el desarrollo de autolesiones.

Remark

1)Why was this study conducted?

The aim was to study the relationship between non-suicidal self-injuries and nuclear aspects of eating disorders specified.

2) What were the most relevant results of the study?

There are some key elements in non-suicidal self-harm such as body dissatisfaction, body attitudes, self-esteem and impulsivity.

3) What do these results contribute?

Discovering these key factors in patients with non-suicidal self-harm allows focusing the treatment target on those aspects.

Introduction

Eating disorders are serious disorders that affect both the mental and physical health of a person. Anorexia nervosa and bulimia nervosa are types of eating disorders, that can be defined according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) as the restriction of food intake due to excessive fear of gaining weight leading to significant weight loss and eating behaviour characterized by binge eating and inappropriate and frequent compensatory behaviours to avoid weight gain, respectively. It should be noted that these disorders show a multifactorial etiology ranging from biological to psychological and sociocultural factors [1,2]. In addition, eating disorders have the highest mortality rates of all psychiatric disorders, with suicide being the second cause of death after medical complications of the disease [3,4]. It should also be mentioned that the incidence rate of anorexia nervosa and bulimia nervosa is variable and difficult to quantify due to its variability according to the region, but it can be highlighted that there is a higher risk of these disorders occurring in women who are in late adolescence. According to Nichols et al. [5] the incidence rate for bulimia nervosa for ages 10-19 years was 35.8/100,000 person-years while for ages 15-19 years we have figures of 56.4/100,000 person-years [6].

According to the Centers for Disease Control and Prevention [7], suicide is a growing public health problem, especially in young people aged 15 to 24 years, but in addition, individuals with eating disorders have suicide rates that are up to 18 times higher than in the general population [8].

One of the most powerful predictors of suicidal behaviour in adolescents is the so-called non-suicidal self-harm [9,10], which is defined as deliberate behaviour aimed at causing harm to the surface of the body without suicidal intent, including methods such as cutting the skin, burning, stabbing, beating, scratching, scraping, or carving, among others [11,12]. Such is the importance of this phenomenon that the APA [1] has included it in the DSM-V 1, increasing awareness of the problem and allowing to have the first incidence and prevalence rates, being the rates of non-suicidal self-harm for anorexia nervosa between 13.6% and 42.1% and between 26.0% and 55.2% for bulimia nervosa [13,15]. Traditionally, self-harm has been considered frequent in binge eating disorders [16]; however, current scientific information rejects this hypothesis, showing the lack of knowledge on this issue [17,18].

On the other hand, a factor that seems to be common between eating disorders and non-suicidal self-harm is body dissatisfaction, which is characterized by negative attitudes towards the body and self-image, and the view of the body as an object of contempt, which could lead to the presence of self-harm [19-21].

Similarly, other characteristics that are present in eating disorders are high perfectionism, alexithymia, low self-esteem, obsessions and rigidity [22,23], which can be considered as predisposing and precipitating factors and/or maintainers of eating disorders. Among all of them, alexithymia has been postulated as a hypothesis to underline the high prevalence of self-injurious thoughts and behaviours in this population, leading in turn to non-suicidal self-harm [13,20]. However, evidence on the relationship between the other characteristics and nonsuicidal self-harm is not abundant.

Therefore, the aim of this research was to verify the influence of non-suicidal self-harm in patients with eating disorders, specifically in women who have already developed anorexia nervosa and bulimia nervosa, and the relationship with certain characteristics of eating disorders such as body dissatisfaction, impulsivity, alexithymia and self-esteem. Through this study we will be able to improve and develop effective treatments for these disorders.

Materials and Methods

Participants

The sample was composed of women belonging to the ABB Center of Seville (Spain) specialized in hospitalizations of adults with feeding problems.

The inclusion criteria were to be over 18 years of age, to be diagnosed with anorexia nervosa or bulimia nervosa, and to have given informed consent to participate in the study. As exclusion criteria, comorbidity with any other psychological disorder was taken into account.

G*Power (version 3.1.9.2, Universität Düsseldorf, Düsseldorf, Germany, 2007) was used to confirm that the number of participants was high enough to ensure 95% power and $\alpha \leq 0.05$ for all analyses. Taking into account the existence of two groups, G*Power determined that the total number of participants needed was 56 (effect size d= 0.90 - high).

Instruments

A psychological evaluation was conducted using the following instruments:

Body Shape Questionnaire (BSQ). Self-applied questionnaire that measures dissatisfaction with one's own body, self-devaluation due to physical appearance [24,25], fear of gaining weight, desire to lose weight or avoidance of situations where physical appearance could attract the attention of others. It consists of 34 items that are scored on a Likert-type scale from 1 to 6 points and whose sum of scores allows obtaining an overall score whose cut-off point has been established at 105, where higher than 105 indicated a high degree of dissatisfaction. In the Spanish version, the internal consistency index has a Cronbach's α of 0.97.

Body Attitude Questionnaire (BAT). It evaluates the alteration of attitudes towards the body [26,27]. It consists of 20 items that are grouped into three main factors: negative appreciation of body size, loss of familiarity with one's own body, and general body dissatisfaction. Each item is rated at a maximum of 6 points on a Likert-type scale from "never to always" (0 to 5). The maximum score obtained can be 100 points, with 36 being the cut-off point for distinguishing between the clinical population and the general population. The Cronbach's alpha coefficient of the Spanish version is 0.93.

Rosenberg Self-Esteem Scale, 10-item version. (RSE). It evaluates the degree of self-esteem through 10 items that address feelings of self-respect and self-acceptance [28,29]. With a 4-point Likert-type response format (1= strongly agree, 2= agree, 3= disagree, 4= strongly disagree) and with a total score between 10 and 40, the following cut-off points have been established: self-esteem will be low if it is < 25, medium self-esteem between 26 and 29, and high self-esteem between 30 and 40. In the Spanish version, the internal consistency index has a Cronbach's α 0.82.

Barratt Impulsivity Scale, version 11 (BIS). It evaluates impulsivity through 30 items with four response options (o, rarely or never [30,31]; 1, occasionally; 3, often; 4, always or almost always). From the clinical point of view, the quantitative value of the total score is more relevant. The Spanish adaptation shows adequate psychometric characteristics, presenting an internal consistency index of Cronbach's α 0.81.

Toronto Alexithymia Scale (TAS-20). It is a self-administered questionnaire designed to evaluate alexithymia, or difficulty in identifying and expressing emotions [32,33]. It consists of 20 items, each of which is answered using a five-point Likert-type response scale. The range of possible scores is 0-100. The authors indicated the following scores to interpret the results: ≤51 Absence of alexithymia, between 52 and 60 Possible alexithymia and ≥61 Alexithymia. It has good psychometric indices, with Cronbach's alpha being 0.82.

Procedure

First of all, it was necessary to obtain the acceptance and permission to carry out the study from the Board of Directors of the ABB Center in Seville, where the sample collection was to take place. To this end, a dossier was prepared and an informative meeting was arranged with the director of the center, at which the objectives of the study were explained. After acceptance from the center, the participants were recruited according to their diagnosis. They were informed of the study and their consent to participate was requested, according to the Organic Law 3/2018 on Personal Data Protection and guarantee of digital rights, and following the guidelines established by the Declaration of Helsinki (revised in Fortaleza, 2013), where they were informed that all data provided would be kept in maximum anonymity. Those participants who agreed to participate signed the informed consent form and were assigned a code after which their data would be processed from that moment on. After obtaining the code, they filled out a booklet that included all the psychological instruments previously described.

Data analysis

First, a descriptive statistical analysis was performed to determine the study sample, divided into participants with anorexia nervosa with and without non-suicidal self-harm and participants with bulimia nervosa with and without non-suicidal self-harm. In turn, a Ji^2 test was performed to check whether there were differences between anorexia nervosa and bulimia nervosa in the presence or absence of non-suicidal self-harm.

Next, to test whether there were differences in the main psychological variables (body dissatisfaction, altered attitudes towards the body, alexithymia and self-esteem) between participants with and without non-suicidal self-harm, different chi-square tests were performed (Ji^2), the dependent variable being the presence or absence of non-suicidal self-harm, and the independent variables were the scores on the *Body Shape Questionnaire (*greater or less than 105), *Body Attitude Questionnaire* (greater or less than 36), *Toronto Alexithymia Scale (*greater than 61 presence of alexithymia, between 52 and 50 possible alexithymia, less than 51 absence of alexithymia) and *Rosenberg Self-Esteem Scale* (between 30 and 40 high self-esteem, between 26 and 29 medium self-esteem, or less than 25 low self-esteem).

After this, to check if there were differences in impulsivity between participants with and without non-suicidal self-harm, a mean difference analysis was performed with Student's *t-test*, where the dependent variable was the presence or absence of non-suicidal self-harm, and the independent variable was the total score on the Barratt Impulsivity Scale. Finally, the same analyses were repeated differentiating between participants with anorexia nervosa and those with bulimia nervosa.

Statistical analyses were performed with Statistical Package for Social Sciences 22.0 (SPSS, Armonk, NY).

Results

Description of the sample

Out of the 108 people who at that time were admitted to the ABB clinic in Seville (Spain), 90 were women, 17 were men and 1 person was in the process of changing gender. The 90 women aged between 18 and 57 years were asked about their willingness to participate in the study; 11 of them were unwilling to participate in the study and 19 were suffering from another psychological disorder and were therefore excluded from the study.

Finally, the sample consisted of 60 women aged 18-37 years (M= 20.05; SD= 4.09) belonging to the ABB Center of Seville (Spain) specialized in hospitalizations of adults with eating problems. The participants were divided according to whether they were diagnosed with anorexia nervosa (n= 36) or bulimia nervosa (n= 24) and according to the presence of non-suicidal self-harm (n= 30) or absence of non-suicidal self-harm (n= 30).

Among the participants with anorexia nervosa, 73.5% were in university or already had university studies, and the remaining 26.5% were in high school. In the case of bulimia nervosa, 74.7% were in university, and the remaining 25.3% were in high school. In addition, the mean body mass index for participants with anorexia nervosa was 15.4 kg/m^2 (SD= 1.77), while for participants with bulimia nervosa it was 18.9 kg/m^2 (SD= 1.44).

Difference between Eating Disorders with and without non-suicidal self-harm

First, the differences between the two types of Eating Disorders studied, anorexia nervosa and bulimia nervosa, were analyzed according to the presence or absence of non-suicidal self-harm. Statistically significant differences (Ji^2 = 10.00; p <0.01) were found between both groups (anorexia nervosa vs BN). Non-suicidal self-harm was present in 12 of the 36 participants who were diagnosed with anorexia nervosa, whereas in the case of BN, 18 of the 24 had experienced non-suicidal self-harm.

Difference in the main characteristics of Eating Disorders and the presence or absence of non-suicidal self-harm

Differences were explored between the main characteristics of Eating Disorders , body dissatisfaction, body attitudes, alexithymia, self-esteem and impulsivity, and the presence or absence of non-suicidal self-harm. Statistically significant differences were found in body dissatisfaction through the BSQ (Ji^2 = 5.71; p ≤0.01), in body attitudes with the BAT (Ji^2 = 4.80; p ≤0.02), self-esteem through RSE (Ji^2 = 14.09; p ≤0.00) and impulsivity, measured through the BIS-11 (t= 3.39; p ≤0.01). The main differences in the core aspects of Eating Disorders in both groups can be found in Table 1.

Alexithymia Scale; RSE = Rosenberg Self-Esteem Scale; BIS-11 = Barrat Impulsivity Scale.

Difference in the main features between anorexia nervosa and bulimia nervosa in the main features of Eating Disorders

For patients with anorexia nervosa, statistically significant differences were found in body dissatisfaction (Ji^2 = 3.56; p ≤0.05) and self-esteem (Ji^2 = 5.625; p ≤0.01) as a function of the presence or absence of non-suicidal self-harm. For participants showing bulimia nervosa, statistically significant differences were found in self-esteem (Ji^2 = 7.407; p ≤0.05) and impulsivity (t= 2.251; p ≤0.05). These results can be found in Table 2.

Table 1. Differences in the main characteristics of eating disorders between participants with and without nonsuicidal self-harm.

	Self-harm n(%)/M(DT)		Non self-harm n(%)/M(DT)		test*	*p*
BSQ	> 105	23 (76.7)	14 (53.3)	5.71	0.01	
	< 105	7 (23.3)	16 (46.7)			
BAT	> 36	24 (80.0)	16 (53.3)	4.80	0.02	
	< 36	6 (20.0)	14 (46.7)			
TAS-20	> 61	7 (23.3)	6 (20.0)	1.97	0.37	
	52-60	9 (30.0)	5 (16.7)			
	< 51	14 (46.7)	19 (63.3)			
RSE	30-40	2 (6.7)	10 (33.3)	14.09	0.00	
	26-29	2 (6.7)	8 (26.7)			
	< 25	26 (68.4)	12 (40.0)			
BIS-11			57.7 (13.5)	45.8 (13.6)	3.39	0.00

Note: *Ji^2 statistic for categorical variables, t-student for quantitative variables.
BSQ = Body Shape Questionnaire; BAT = Body Attitude Questionnaire; TAS-20 = Toronto Alexithymia Scale; RSE = Rosenberg Self-Esteem Scale; BIS-11 = Barrat Impulsivity Scale.

Table 2. Differences in anorexia nervosa and bulimia nervosa in the main characteristics of eating disorders between participants with and without self-harm.

		Self-harm n(%)/M(DT)		Non self-harm n(%)/M(DT)	Test*	*p*
	BSQ	>105	9 (75.0)	10 (41.7)	3.567	0.04
		<105	3 (25.0)	14 (58.3)		
	BAT	>36	9 (75.0)	11 (45.8)	2.756	0.09
		<36	3 (25.0)	13 (54.2)		
Anorexia nerviosa	TAS-20	>61	2 (16.7)	5 (20.8)	0.380	0.87
		52-60	3 (25.0)	4 (16.7)		
		<51	7 (58.3)	15 (62.5)		
	RSE	30-40	1 (8.3)	8 (33.3)	14.09	0.01
		26-29	1 (8.3)	6 (25.0)		
		<25	10 (41.7)	10 (41.7)		
	BIS-11	48.3 (12.7)	44.6 (12.2)	0.828	0.413	
	BSQ	>105	14 (77.8)	4 (66.7)	0.296	0.61
		<105	4 (22.2)	2 (33.3)		
	BAT	>36	15 (83.3)	5 (83.3)	0.000	0.99
		<36	3 (16.7)	1 (16.7)		
Bulimia nervosa	TAS-20	>61	7 (38.9)	4 (66.7)	1.400	0.49
		52-60	6 (33.3)	1 (16.7)		
		<51	5 (27.8)	1 (16.7)		
	RSE	30-40	1 (5.6)	2 (33.3)	7.407	0.02
		26-29	1 (5.6)	2 (33.3)		
		< 25	16 (88.9)	2 (33.3)		
	BIS-11		64.0 (10.1)	50.7 (18.7)	0.307	0.03

Note: *Ji² statistic for categorical variables, t-student for quantitative variables.
BSQ = Body Shape Questionnaire; BAT = Body Attitude Questionnaire; TAS-20 = Toronto Alexithymia Scale; RSE = Rosenberg Self-Esteem Scale; BIS-11 = Barrat Impulsivity Scale

Discussion

Eating disorders, due to their prevalence and mortality rate, are a global problem [4], and, in addition, when combined with phenomena such as non-suicidal self-harm, the problem is aggravated. Therefore, the aim of this research was to check the rate of non-suicidal self-harm in two types of eating disorders, anorexia nervosa and bulimia nervosa, as well as to check whether there are components of eating disorders, such as body dissatisfaction, impulsivity, alexithymia and self-esteem, present in non-suicidal self-harm.

First, a higher number of participants presenting non-suicidal self-harm were found with bulimia nervosa versus anorexia nervosa, indicating that the likelihood of self-harm is higher for those diagnosed with bulimia nervosa. This result is in agreement with the first prevalence data, which placed bulimia cases above those of anorexia in the context of self-harm [13-15]. This fact may be due to the very nature of both disorders, while anorexia is mostly focused on a restrictive eating pattern, bulimia is largely characterized by a purgative pattern in which a ritual of bodily "injury" such as vomiting is carried out 1.

Secondly, the main characteristics of nervous behaviour disorders, including body dissatisfaction and attitudes towards the body, alexithymia, self-esteem and impulsivity were analyzed to check whether they were present to a greater or lesser extent in patients with non-suicidal self-harm. In relation to body dissatisfaction and attitudes towards the body, both characteristics were present in the participants with non-suicidal self-harm, who had greater body dissatisfaction and worse attitudes towards their own body. Body dissatisfaction and feeling one's own body as an object of contempt could explain why this aspect is found to a greater extent in patients with non-suicidal self-harm [19-21]. However, causal relationships cannot be established between the two, since being the two main characteristics of eating disorders, they could be equally altered regardless of the presence or absence of self-harm [34].

Regarding alexithymia, no major symptoms were found in patients with non-suicidal self-harm. Alexithymia is in turn closely related to body dissatisfaction, having been proposed as a possible predisposing factor for this dissatisfaction, but without any relation to non-suicidal self-harm in eating disorders [35,36]. Other authors postulate that alexithymia can lead to other types of problems, unrelated to eating disorders, which could explain these results [37].

Also closely related to body dissatisfaction is self-esteem, which is lower in the presence of non-suicidal self-harm, which again could be explained by the presence of greater body dissatisfaction. The results are consistent with those found by Svirko and Hawton [20] who postulated low self-esteem as a risk factor for the presence of eating disorders.

Furthermore, with regard to impulsivity, different authors have stated that non-suicidal self-harm is not impulsive, but planned [38]. Contrary to this statement, our results found greater impulsivity in those participants who presented non-suicidal self-harm, making impulsivity a differential characteristic in eating disorders with or without the presence of non-suicidal self-harm. This fact makes it possible to give an important weight to impulsivity in interventions for this population.

Finally, when differentiating between the two entities (anorexia and bulimia nervosa), it was found that participants with anorexia and self-harm had lower body satisfaction and lower self-esteem, whereas participants with bulimia had lower self-esteem and greater impulsivity. These results are in line with the definition of anorexia and bulimia, since patients with anorexia usually present high body dissatisfaction [20], whereas patients with bulimia (a disorder more associated with purging) present high levels of impulsivity. These results seem to indicate that psychological treatments for this population should be different, focusing on improving self-esteem in both disorders, and in the case of anorexia, working on body satisfaction, and on impulsivity in the case of bulimia.

Despite these novel results, research continues to seek a better understanding of the phenomenon of non-suicidal self-harm in eating disorders [12]. This phenomenon should be further explored, including aspects that have not been considered in this research, such as the typology and frequency of non-suicidal self-harm. In addition, another probable limitation is the size of the sample: 60 participants is an acceptable number considering the characteristics, but caution should be exercised with regard to the generalization of the results. It would be interesting to increase this sample in order to be able to perform secondary analyses between the different disorders. In addition, the results presented differentiating between anorexia and bulimia should be taken with caution, due to the low sample size. They can be considered as preliminary results, so we hope to further deepen this differentiation. In future research we would also like to address the same issue in male participants, whose incidence and prevalence rate is increasing day by day [39]. The results found provide important conclusions and clinical implications for the treatment of eating disorders. Special attention should be paid to factors such as impulsivity in patients with eating disorders, in order to try to prevent the occurrence of non-suicidal self-harm. Finally, interventions should also focus on addressing ideas and cognitions related to harming one's own body and the negative view towards it. This opens up a wealth of psychological content to treat and add to interventions for eating disorders, regardless of the presence or absence of non-suicidal self-harm. Only in this way, we will be taking a step towards an early detection and prevention of non-suicidal self-harm, or even to avoid its recurrence.

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