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REVIEW

Parental negative weight/shape comments and their association with disordered eating behaviors: A systematic review

Comentarios negativos paternos acerca de peso/forma corporal y su asociación con las conductas alimentarias de riesgo: Una revisión sistemática

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Abstract

The purpose of this study was to find the association between receiving negative parental weight and shape comments, and the presence of disordered eating behaviors (DEBs) in young adults. A systematic review was conducted answering the following PECO question: Population / young adults; Exposure / negative comments, criticism or teasing about weight and shape by parents; Comparison groups / not applicable; and Outcome / DEBs. Due to the use of different statistical measurements, a narrative was chosen to present the results. An association between negative comments and DEBs was found in male and female university students. Women reported more negative comments, higher body dissatisfaction and DEBs than men. Body dissatisfaction was found as a mediator of negative comments and DEBs, and sex as a moderator between body dissatisfaction and DEBs. The results have implications for the influence social pressure has on the internalization of the thin-ideal and on body dissatisfaction as risk factors for the development of disordered eating behaviours.

Keywords. Parental influences; Negative comments; Eating disorders; Disordered eating; Body image.

Resumen

El objetivo de este estudio fue examinar la asociación entre ser receptor de comentarios negativos paternos acerca del peso y la figura corporal, y la presencia de conductas alimentarias de riesgo (CAR) en adultos jóvenes. Se llevó a cabo una revisión sistemática respondiendo a la pregunta PECO siguiente: Población / adultos jóvenes; Exposición

/ comentarios negativos, críticas o ridiculización por parte de los padres por el peso y la figura corporal; Comparación / no aplicó; y Resultado / CAR. Debido a las diferentes medidas estadísticas utilizadas, se eligió un formato narrativo para presentar los resultados. Estos indicaron asociación entre los comentarios negativos paternos y las CAR en hombres y mujeres estudiantes universitarios. Las mujeres reportaron recibir más comentarios negativos, así como presentar mayor insatisfacción corporal y CAR que los hombres. Entre los comentarios negativos y las CAR se encontró como mediadora a la imagen corporal, y al sexo como un moderador entre la insatisfacción corporal y las CAR. Los resultados tienen implicaciones acerca de la influencia de la presión sociocultural en la interiorización del ideal estético de delgadez y de la insatisfacción corporal como factores de riesgo para el desarrollo de CAR.

Palabras clave. Influencias paternas; Comentarios negativos; Trastornos alimentarios; Conductas alimentarias de riesgo; Imagen corporal.

INTRODUCTION

Disordered eating behaviors (DEBs) are inappropriate behaviors similar to those that occur in eating disorders (ED), yet do not meet the diagnostic criteria. They include restrictive diets, use of laxatives, diuretics, anorexigenics or enemas, excessive exercise and self-induced vomiting, all with the aim of losing body weight, and binge eating (Unikel, Díaz de León & Rivera, 2017), which lead to deficiencies in psychosocial functioning and adverse long-term consequences for well-being and mental health (Kärkkäinen, Mustelin, Raevuori, Kaprio & Keski-Rahkonen, 2018; Solmi, Hatch, Hotopf, Treasure & Micali, 2014). Among university students, there are records of DEB rates ranging from 5.5% (Saenz, González & Díaz, 2011) to 61.1% in women (Fragkos & Frangos, 2013), and from 1.9% (Lugli-Rivero & Vivas-Peñalver, 2006) to 38.9% (Fragkos & Frangos, 2013) in men.

The etiology of ED has been defined as multiterminated, involving factors of an individual, social and familial nature (Garfinkel & Garner, 1982). According to the meta-analysis performed by Quiles, Quiles, Pamies, Botella and Treasure (2013), there is a positive relationship between familial influence on diets ($r = .22$), body dissatisfaction ([BD] $r = .22$) and bulimic symptoms ($r = .22$) in adolescents, either through behavioral modeling, motivation to lose weight or negative comments (NC). As reported by Bäck (2011), the mother models dietary eating behaviors and concerns about body weight, with the quality of the attachment relationship determining the development of DEBs. These behaviors are associated with the frequency of conversations about

body weight and NC during meals, poor family functioning or lack of enjoyment of family meals (Loth et al., 2015), and there is worse prognosis and response to ED treatment in families where there is high expressed emotion (Le Grange, Eisler, Dare & Hodes, 1992; Moulds et al., 2000; Rienecke, Lebow, Lock & Le Grange, 2017).

The literature shows that physical, sexual and emotional abuse are associated with the development of ED (Afifi et al., 2017; Caslini et al., 2016) and DEBs (Kent & Waller, 2000; Salwen, Hymowitz, Bannon & O'Leary, 2015; Taylor et al., 2006), and have the potential to encourage the formation of negative cognitive styles (Abramson & Alloy, 2004), characterized by feelings of failure, disability, inferiority, doubt and self-criticism (Blatt & Homman, 1992; Kaya Tezel, Tutarel Kışlak, & Boysan, 2015; Sachs-Ericsson, Verona, Joiner & Preacher, 2006). With verbal abuse, unlike other forms of abuse, negative cognitions are provided directly by the perpetrator, as a result of which a negative cognitive style is developed (Abramson, Metalsky & Alloy, 1989; Salwen et al., 2015). Moreover, positive attributions are disconfirmed through repeated abuse, creating negative inferences to generalize to other events, becoming a stable, negative inferential style (Gibb & Abela, 2008; Mac Giollabhui et al., 2018). People who report an experience of emotional abuse during childhood tend to adopt a severe, punitive position towards themselves (self-criticism), which –in turn– is associated with depressive symptoms, BD (Blatt & Homann, 1992; Kaya et al., 2015) and DEBs (Hund & Espelage, 2007; Salwen et al., 2015).

Several studies have indicated the relationship between NC about shape and body weight by relatives and DEBs (Keery, Boutelle, van den Berg & Thompson,

2005) and ED (Kent, Waller & Dagnan, 1999). Krug et al. (2013) found that criticism by the family affects the way patients with an ED eat, and is related to lower self-esteem, BD, greater feeling of loneliness, a sedentary lifestyle, bulimic symptoms, and suicidal thoughts and attempts (Eisenberg, Neumark-Sztainer & Story, 2003). Eisenberg, Berge, Fulkerson and Neumark-Sztainer (2012) report that 22% of men and 35.8% of women receive this type of comments from their family, and a total of 11% of adolescent women and 19.3% of men who have been criticized by their relatives begin to engage in DEBs five years later (Haines, Neumark-Sztainer, Eisenberg & Hannan, 2006).

Parents play a key role in raising children through behavioral modeling. Although negative messages from mothers have an influence on children's self-esteem because they play a central role in providing emotional support (Kent & Waller, 2000; Neumark-Sztainer et al., 2010), fathers' influence seems less clear. In many of the studies conducted, however the person who made the NC is not specified (Bailey & Ricciardelli, 2010; Eisenberg, Berge, Fulkerson & Neumark-Sztainer, 2011; Goldschmidt, Wall, Loth & Neumark-Sztainer, 2015; Jackson, Grilo & Masheb, 2000; Menzel et al., 2010; Quick, McWilliams & Byrd-Bredbenner 2013; Salwen et al., 2015). It is therefore necessary to determine the source of the NC in order to understand the type of influence they exert. Accordingly, the purpose of this paper was to conduct a systematic review to discover the association between having received NC from their parents about their bodies and shape, and the presence of DEBs in young adults' lives. This evidence could be used to support the inclusion of topics related to this type of verbal violence in DEB and ED prevention programs, and to complement knowledge about the etiology of these conditions.

METHOD

The question to be answered in the present study used the PECO (Population, Exposure, Comparison, Outcome) methodology: Population = young adults; Exposure = NC, criticism or teasing about weight and

shape by parents; Comparison groups = not applicable; and Outcome = DEBs. PRISMA (Preferred Reporting items for Systematic reviews and Meta-Analyses) declaration was followed (Urrútia & Bonfill, 2010).

Inclusion and exclusion criteria

Articles were included in the review if they met the following criteria: 1. Published in English or Spanish; 2. Quantitative; 3. Cross-sectional; 4. Published by December 2017; 5. The outcome variable included the measurement of DEBs; 6. The outcome variable occurred in the young adult population (ages 18 to 24); and 7. They specified that criticism, comments or teasing were received about the respondents' weight and/or shape from their parents. Articles were excluded if: 1. DEBs were not measured; 2. The population studied were children, adolescents or older adults; and 3. Data could not be extracted from them.

Information sources and search strategies

The article search was conducted on January 18, 2018, using the PUBMED, Google Scholar, Cochrane Library, Lilacs, CONRICyT (Consortio Nacional de Recursos de Información Científica y Tecnológica/National Consortium of Scientific and Technological Information Resources) and Google Scholar databases. MESH words, free text words, and the Boolean operators AND and OR were used. Four search routes were developed: 1. Route used in PUBMED: "Rejection (Psychology)" [Mesh] OR "negative comments"[All Fields] OR "criticism"[All Fields] OR "teasing" [All Fields] OR "weight-related comments" [All fields] OR "shape-related comments" AND "disordered eating" AND "young adults" and "family" [Mesh]; 2. Route used in GOOGLE Scholar and CONRICYT: "negative comments", "criticism", "teasing", "weight-related comments", "shape-related comments", "disordered eating", "young adults", and "family"; 3. Route used in Cochrane Library: "Rejection (Psychology)" OR "negative comments" OR "criticism" OR "teasing" OR "weight-related comments" OR "shape-related comments" AND "disordered eating" AND "young adults" and "family"; and 4. Route used in LILACS: "negative comments" OR "criticism" OR "teasing" OR "weight-related comments"

OR “shape-related comments” AND “disordered eating” AND “young adults” AND “family”.

Selection of studies

Articles were selected through two filters. The first involved the selection of the articles by title and abstract, by two independent reviewers, and a Kappa inter-rater reliability test was performed. One of the reviewers holds a Ph.D. in psychology and the other a Master's Degree in Epidemiology, both of whom took part in the study. When there were discrepancies between the two reviewers, a third reviewer, who has a Master's degree in Public Mental Health and was not part of the study, was asked to make the selection. The second filter involved the selection of the articles by two independent reviewers by reading the complete text, and again discrepancies were resolved by a third reviewer.

Two articles were found in PUBMED: Eisenberg et al. (2012) and Chng and Fassnacht (2016). The search continued in the section of similar articles where 117 were obtained, together with two in Google Scholar and one in CONRICyT, which was eliminated because it was repeated. No articles were found in the Cochrane Library or LILACS databases. The references were also reviewed, and an article added. In other words, out of a total of 120 articles, 32 were selected for an abstract review.

Data extraction and quality confirmation process

The abstracts were reviewed by two independent reviewers. The reasons for excluding papers were as follows: a) the samples comprised adolescents, b) the negative comments were made by siblings, c) they did not specify whether the negative comments were made by parents or friends, and d) they were qualitative studies. When a discrepancy of opinion occurred, the evaluation of a third reviewer was requested. A Kappa test was carried out with the reviewers, whose value in the filter 1 was .85 ($p = .0001$).

A full text review was also performed by two independent reviewers. In this filter, papers were excluded because they failed to specify whether the negative comments came from the parents, they were cohort studies, data from a population reported in another

article were used or DEBs were analyzed as a co-variable rather than an output variable.

Data synthesis

The results of each of the articles provide different measures that are not comparable with each other, such as correlations and regressions, or proof of a model, or the odds ratios of the output variable were not reported. It was therefore decided that a narrative synthesis was the most appropriate means of presenting the results.

Quality of studies

The selection of participants within each study was not random or representative. However, a study sample was obtained in which all the participants met the age criteria and formed part of university student populations. Publication bias is difficult to control in systematic reviews, which is a factor that should be taken into account.

RESULTS

Inclusion and exclusion of studies

The papers by Ackard, Neumark-Sztainer, Hannan and Story (2001), Antoniou (2009), Berge et al. (2014), Cromley, Neumark-Sztainer, Story and Boutelle (2010), Forney and Ward (2013), Herbozo, Menzel and Thompson (2013), Loth, van den Berg, Eisenberg and Neumark-Sztainer (2008), Loth, MacLehose, Bucchianeri, Crow and Neumark-Sztainer (2014), Mangweth et al. (2005), Nerini, Matera and Stefanile (2016), Puhl and King (2013), Slane, Klump, McGue and Iacono (2014), Unikel, von Holle, Bulik and Ocampo (2012), and Vartanian, Smyth, Zawadzki and Heron (2014) were excluded on the basis of their abstracts (Figure 1).

The articles by Bailey and Ricciardelli (2010), Eisenberg et al. (2011), Eisenberg et al. (2012), Gan, Nasir, Zalilah and Hazizi (2011), Goldschmidt et al. (2015), Jackson et al. (2000), Kluck (2008), Lease, Doley and Bond (2015), Menzel et al. (2010), O'Hara, Tahboub-Schulte and Thomas (2016), Quick et al. (2013), Salwen et al. (2015), and Taylor et al. (2006), were excluded on the

basis of the full text. A total of five articles were eventually obtained for inclusion.

Participants and samples

The age of participants oscillated between 18 and 28, with mean of between 18.8 and 22.8 years. The body mass index, recorded in all the articles except the published by Gross and Nelson (2000), ranged from 14.65 to 44.06 kg/m² in women, and from 16.65 to 33.66 kg/m² in men; with a mean of 20.6 to 22.8 in females, and 22.5 in males. The five articles were about women, with only two of them also including men (Chng & Fassnacht, 2016; Rodgers, Paxton & Chabrol, 2009), all university students. Two of the articles were published in Australia (Hanna & Bond, 2006; Rodgers, Paxton & Chabrol, 2009), two in the United States (Gross & Nelson, 2000; Kluck, 2010), and one in Singapore (Chng & Fassnacht, 2016); see table 1.

The ethnic composition of the samples of three of the five studies was between 82% and 88% Caucasian, between 1% and 6.3% Hispanic, 5% African-American, 2.6% Asian-American, between 3% and 8% Asian, 3% Middle Eastern, 2% Indian, and 3% other. In the study by Chng and Fassnacht (2016), the sample was mainly of Asian origin (with 95% self-identifying as Asian), and this data was not reported by Hanna and Bond (2006).

Measurements

Four of the articles (Chng & Fassnacht, 2016; Gross & Nelson, 2000; Hanna & Bond, 2006; Rodgers, Paxton &

Chabrol, 2009) used the Eating Disorder Inventory-2 ([EDI-2]; Garner, 1991) for measuring DEBs. The Bulimia Test-Revised ([BULIT-R]; Thelen, Farmer, Wonderlich & Smith, 1991) was used in just one of the articles (Kluck, 2010), while the restrained eating restriction factor of the Clinical and Research Inventory for Eating Disorders Questionnaire ([CR-EAT]; Fassnacht, 2007) was used in the remaining study (Chng & Fassnacht, 2016). Gross and Nelson (2000) compiled the disordered eating index (DEI) from three subscales of the EDI-2: BD, drive for thinness, and bulimia. All the tests had previously been validated in the population studied.

The evaluation of NC was undertaken using various instruments. The Parental Eating and Weight Messages Survey ([PEWM]; Gross & Nelson, 2000) was used by these same authors. Both Gross and Nelson (2000) and Hanna and Bond (2006) measured daughters' perception of positive and NC from either parent. The instrument was applied in three ways: by asking about daughters' perception of the messages their parents gave them, messages between parents, and messages from parents about their own concerns about body weight. Kluck (2010) includes six questions about the frequency with which parents criticize daughters, tease them and encourage them to control their weight through diet, exercise and other behaviors. The Parental Comments' Scale ([PCS]; Rodgers, Faure & Chabrol, 2009), used by Chng and Fassnacht (2016) and Rodgers, Paxton and Chabrol (2009), measures three dimensions of parents' comments (analyzing those of the mother

Table 1. General description of articles included in the systematic review

Study	Sample			Age	Country	BMI		Instruments	
	W	M	Total*	Mean (DE)		W	M	DEBs (outcome)	NC
	Mean (DE)								
Chng and Fassnacht (2016)	265	118	383	21.2 (1.9)	Singapore	20.6 (3.5)	22.5 (3.3)	CR-EAT, RE	PCS
Gross and Nelson (2000)	221	-	221	20.0 (1.7)	United States	-	-	EDI-2, DEI	PEWM
Hanna and Bond (2006)	119	-	119	22.8 (3.7)	Australia	22.8 (3.7)	-	EDI-2	PEWM
Kluck (2010)	268	-	268	18.8 (1.2)	United States	22.5 (3.7)	-	BULIT-R	FIS
Rodgers, Paxton et al. (2009)	147	188	335	19.6 (1.0)	Australia	22.8 (2.9)	22.5 (3.2)	EDI-BD, EDI-DT, EDI-BU	PCS

Notes. BMI = Body mass index, BULIT-R = Bulimia Test-revised, CR-EAT = Clinical and Research Inventory for Eating Disorders, DEBs = Disordered eating behaviors, EDI-2 = Eating Disorder Inventory-2, EDI-BD = Body dissatisfaction subscale of the EDI-2, EDI-DT = Drive for thinness subscale of the EDI-2, EDI-BU = Bulimia subscale of the EDI-2, FIS = Family Influence Scale, NC = Negative comments about body and the figure, PCS = Parental Comments Scale, PEWM = Parental Eating and Weight Messages Survey, W = women, M = Men.

* University students.

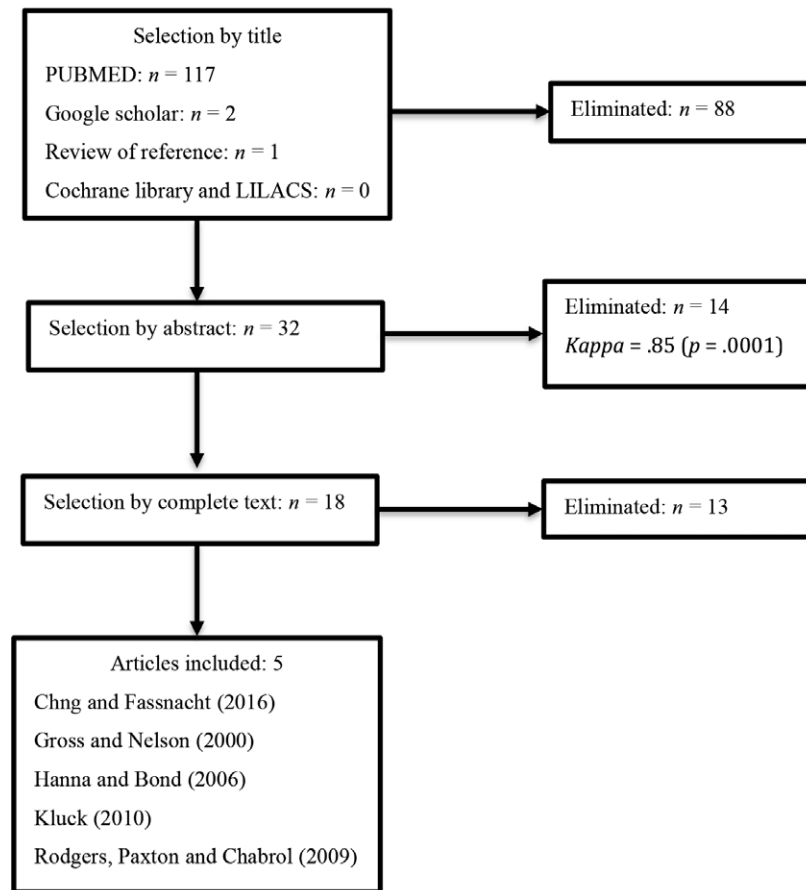


Figure 1. Literature review flow chart.

and father separately) on shape, body weight and eating habits (negative, positive, importance, and comparison). Three studies used indirect measurements for measuring the influence of the comments: Hanna and Bond used the Family Environment Scale ([FES]; Moos, 1974), which evaluates the amount of overt expressions of anger, aggression and conflict in the family environment for the indirect measurement of messages to daughters. Kluck used the Family Influence Scale ([FIS]; Young, Clopton & Bleckly, 2004), which measures family attitudes towards physical appearance and the emphasis the family places on appearance and physical attractiveness, while Gross and Nelson (2000) used the indirect questions included in the PEWM.

Disordered eating behaviors

In the studies reviewed, an association between NC and DEBs was found in both young male and female

university students (Table 2). In all the studies, there is an association with the output variable measured as restrictive symptoms, bulimic symptoms or DEI. The influence of the messages was measured either directly (Chng & Fassnacht, 2016; Rodgers, Paxton & Chabrol, 2009); in other words, through direct comments by parents, such as criticism or teasing, or indirectly, through the influence of the family environment (Gross & Nelson, 2000; Hanna & Bond, 2006; Kluck, 2010).

The study conducted by Hanna and Bond (2006) on a sample of 119 female university students studying psychology at a university in Adelaide (Australia), found that explained variance for BD was 8.9%, together with 14.8% for drive for thinness, and 31.6% for bulimic symptoms ($\beta = .49, p < .001$). The authors confirmed the association between verbal criticism and DEBs, whether they are engaged in directly or indirectly, as happens in the case of family conflict.

In a sample of 268 female psychology students (age: 16-24 years), Kluck (2010) found that NC from parents were significantly associated with the indirect indicator called Family appearance focus; this is, when family members value a person mainly on the basis of their weight and body shape. Comments from the family and the FIS scores were significantly associated with BD and bulimia symptoms. The more frequent the comments, the more difficulties were experienced by the daughters. FIS scores significantly predicted BULIT-R scores ($\beta = .47, p < .01$), indicating that greater attention by the family to appearance is associated with greater BD and bulimic symptoms. Just over 20% of the variance in bulimic symptoms was explained by a family environment focused on appearance. This relationship was partially mediated by BD, which makes it possible to understand one of the mechanisms where-by an environment focused on appearance operates.

Sex differences

In the two studies in which comparisons were made for sex (Chng & Fassnacht, 2016; Rodgers, Paxton & Chabrol, 2009), women reported perceiving more negative comments than men. Chng and Fassnacht found that women reported higher BD ($M_{women} = 2.81, SD = 1.12; M_{men} = 2.45, SD = 1.07$) and DEBs than men ($M_{women} = 2.71, SD = 0.76; M_{men} = 2.45, SD = 0.76$). Significant differences were observed between the combined variable composed of BD and disordered eating, and NC made by parents ($F_{(8,354)} = 4.82, p < .001$). In both sexes, significant correlations were found between NC and BD and disordered eating, with no significant differences by sex.

Rodgers, Paxton and Chabrol (2009) studied a sample of 338 men and women students (age: 18-21 years). Significant positive correlations were found between NC and BD ($r = .33$ and $.30$), drive for thinness ($r = .30$ and $.15$), and bulimic symptoms ($r = .29$ and $.09$) for women and men, respectively. The structural model they used had a moderately good fit in women. Additional pathways were therefore created between NC and BD, and between comparison and internalization and drive for thinness. Direct paths were found from

Table 2. Association of negative comments and disordered eating behaviors

Study	Association measure
Chng and Fassnacht (2016)	$r_{maternal/women} = .26^*$ $r_{maternal/men} = .37^*$ $r_{paternal/women} = .18^*$ $r_{paternal/men} = .25^*$
Gross and Nelson (2000)	$\beta_{mothers} = .40^*$ $\beta_{fathers} = .96^*$
Hanna and Bond (2006)	$\beta_{negative\ messages/BMI/family\ conflict} = .43^{***}$
Kluck (2010)	$r_{criticism} = .37^{***}$ $r_{teasing} = .36^{***}$
Rodgers, Paxton et al. (2009)	$r_{drive\ for\ thinness} = .30^{**}$ $r_{bulimia} = .29^{**}$

Notes. * $p < .01$, ** $p < .005$, *** $p < .001$

NC to BD, and between the latter and drive for thinness and bulimic symptoms. In men, after various modifications had been made to the original model, such as pathways between NC and BD, and between comparison and internalization and drive for thinness, and the pathway between NC and comparison and internalization, and between BD and bulimia were removed. A model with the right fit was found ($X^2_{(12)} = 10.9, p < .05, RMSEA = .0001, CFI = 1.00$). As with women, direct pathways were found from negative comments to BD and from the latter to drive for thinness and bulimia ($X^2_{(10)} = 24.4, p < .007, RMSEA = .09, CFI = .96$).

Negative comments from mothers

It was observed that the greatest influence on the development of DEBs was NC by mothers about the weight and shape of their daughters in three of the studies (Gross & Nelson, 2000; Hanna & Bond, 2006; Kluck, 2010).

In the study by Chng and Fassnacht (2016), sex and NC emerged as the only significant predictors, indicating that being a woman and receiving more negative comments from the mother are associated with greater BD ($\beta = .37, p < .001$). NC by the mother emerged as a predictor of BD and DEBs for both sex, although it had a greater effect on BD in women than men ($\beta = -.42, p < .05$). BD partially mediated the relationship between NC from mothers and DEBs, with sex being a moderator between BD and DEBs ($\beta_{men} = .02, 95\% CI = .02-.03; \beta_{women} = .02, 95\% CI = .01-.02$).

Gross and Nelson (2000) found that the perception of NC from mothers to daughters is a predictor of DEBs ($r = .33, p < .01$), explaining 10.74% of DEI variance. Mothers have a greater influence than fathers on the development of attitudes and behaviors related to eating and body weight in daughters, while direct comments from mothers to daughters have a greater impact than direct and indirect messages from fathers.

Negative comments from fathers

In comparison with mothers, direct comments from fathers have little or no influence on the DEBs of daughters. Indirect comments from fathers to mothers do have an influence, however, as do the family environment.

The study conducted by Chng and Fassnacht (2016) found that women received more NC from their fathers than men did from their mothers ($F_{(8, 354)} = 4.32, p < .001$), with no effect being found when controlling for body mass index. It would appear that in Asian societies, the influence of fathers is less linked to the gender of their children because in the sample of young men in Singapore, it was found that they were more heavily influenced by their mothers ($r_{men} = .37, r_{women} = .26$) than their fathers ($r_{men} = .25, r_{women} = .18$).

Indirect measurement

When the measurement is indirect, in other words, daughters observe fathers' comments about the mothers' body weight (Gross & Nelson, 2000), greater influence was found on the daughter's DEI values ($\beta = .96, p < .05$). Hanna and Bond (2006), Kluck (2010), and Rodgers, Paxton and Chabrol, (2009) found that the family environment influenced BD and the motivation to lose weight, according to the tripartite model (Keery, van den Berg & Thompson, 2004).

DISCUSSION

The main results of the present systematic review were firstly that there is a positive association between having received comments, teasing or criticism about their weight and shape from parents, and the probability of

engaging in DEBs in early adulthood (regardless of the statistical approach used), thereby answering the PECO question. It was also found that women receive more NC than men, and that a greater influence was exerted when the comments were made by the mother in both sex. The family environment also indirectly influences DEBs and BD. Lastly, it was found that BD and sex serve as mediators and moderators, respectively, between NC and DEBs.

In order to understand the relationship between NC about the body and shape and the presence of DEBs, it is useful to refer to the sociocultural theory proposed by Stice (2002). This theory presents a three-component model that includes: 1. The transmission of the message through the family, peers and media; 2. The internalization of values concerning appearance and the ideal of beauty, and the emergence of behaviors designed to achieve this (Thompson & Stice, 2001); and 3. The negative effects of being faced with the impossibility of reducing the discrepancy between the ideal body and the real body such as BD, negative affect and DEBs. This study observes the influence of family comments, their internalization, and the development of DEBs.

The family environment plays a crucial role in the development of problems related to eating. Children and adolescents learn from their parents by modeling attitudes and behaviors related to all the practices concerning nutrition, physical activity and BD (Carbet, Brussoni, Geller & Mâsse, 2018; Davison & Birch, 2001). An authoritarian parenting style, in which NC are included, can have harmful consequences for children and adolescents, such as depression (Blatt & Homann, 1992; King, Vidourek & Merianos, 2016), DEBs and BD (Golan & Crow, 2004).

Emotional abuse is a risk factor for the development of a wide range of physical and mental health problems in adulthood, including depression, anxiety, substance abuse, obesity and suicide attempts, as well as ED (Kent & Waller, 2000; McLaughlin et al., 2010). Emotional abuse is a direct attack on the person in which limits are violated (Rorty & Yager, 1993), damaging self-esteem, a significant factor in the development

of ED (Heatherton & Polivy, 1990; Meno, Hannum, Espelage & Low, 2008; Vartanian et al., 2014). There seems to be a unique relationship between emotional abuse and low self-esteem, negative self-evaluation being the result of the internalization of parents' criticism for a prolonged period of time (Briere & Runtz, 1990; King et al., 2016). According to Fairburn, Shafran and Cooper (1999), restrictive behavior is an attempt to gain control over a particular aspect of life by providing a coherent organizing principle, whilst bulimic symptoms function as a coping mechanism for handling feelings of anger and impotence (Amianto, Siccardi, Abbate-Daga & Marech, 2012; Root & Fallon, 1988).

In this study, as has been observed elsewhere (Eisenberg et al., 2012), it was found that women receive more negative comments than men, and that being a woman implies a worse prognosis when NC are received. Since the reification of a woman's body implies that this is the center of its value, it is supervised more closely (Fitzsimmons-Craft et al., 2012) and associated with beauty, as a result of which women are expected to pursue this stereotype in order to be socially accepted and fulfill their feminine role (Ferreira, Pinto & Duarte, 2013; Striegel-Moore & Bulik, 2007). Other characteristics of this stereotype include devoting oneself to others and being assertive yet vulnerable. Achieving all this means a woman would be able to achieve success in the social sphere (Ferreira et al., 2013; Striegel-Moore, 1993).

Comments by the mother had a greater influence on DEBs in both women and men (Chng & Fassnacht, 2016), as well as more influence than the father's comments. Conversely, Kluck (2010) found that the best predictors of BD were the mother's encouragement to control weight or shape through restricted diets, exercise and other weight control behaviors rather than NC or teasing. The sex of the perpetrator can act as a moderator of DEBs, probably due to the disruption of gender role modeling at a certain stage of development (Mullen, Martin, Anderson, Romans & Herbison, 1996). Comments on one's weight and shape by the mother have been consistently associated with DEBs, while those from the father have not resulted in a stable pattern.

The literature indicates two forms of maternal influence also seen in the research. The first is that mothers directly influence the development of problems with body image and eating by making explicit negative comments about their children's weight and figure either in the form of criticism, teasing or by encouraging them to lose weight (Neumark-Sztainer et al., 2010; Thompson, Heinberg, Altabe & Tantleff-Dunn, 1999). The other is that mothers indirectly influence their children's body image and diet by expressing their negative beliefs about body image and diet behaviors, as found by Rodgers, Paxton and Chabrol (2009). The daughters of women who make more NCs about their appearance and weight, and go on diets have greater weight and BD than women who do not make these comments. These behaviors determine the value daughters place on thinness (Handford, Rapee & Fardouly, 2018), since daughters see their mothers as appropriate models and learn the underlying rules and expectations about gender behavior (Bandura, Ross & Ross, 1963). The parent of the same sex has a greater impact on the behavior of the child, which can be attributed to the perception of similarities and the socialization of body image attitudes through modeling and reinforcement (Arroyo, Segrin & Andersen, 2017).

Two forms of relationship between variables are mediation and moderation (Kraemer, Stice, Kazdin, Offord & Kupfer, 2001). In the paper by Chng and Fassnacht (2016), the model presented shows the mediation of BD between comments and DEBs, and the moderation of sex between BD and DEBs. Regarding BD, there are different forms of interaction with ED, either as a risk factor (Polivy & Herman, 2002), or as a moderator (Unikel, Aguilar & Gómez-Peresmitré, 2005). BD can be one of the mechanisms whereby adversities at early ages have an effect on DEBs (Vartanian et al., 2014). Receiving criticism can cause a person to follow a restrictive diet to avoid weight-related stigmatization, which can lead to binge eating, weight gain and obesity. NC operate directly or indirectly through dissatisfaction with the body/appearance, encouraging the use of restrictive diets and other DEBs, which, in turn, leads to an increased risk of developing EDs (Haines & Neumark-Sztainer, 2006).

Strengths and limitations

The strengths of this study lie in the fact that a rigorous, exhaustive search of articles was carried out, providing an overview of the research conducted on the population of young university students regarding the influence of NC on the development of DEBs.

The limitations were that these articles did not cover populations of young people not enrolled in school, the fact that the university students observed in the three studies were pursuing degrees in psychology, the small size of the samples, and the fact that only two studies considered men. The way verbal violence was measured varies, while parental influence was also measured differently, since it may involve teasing, criticism or NC, or take place indirectly in the family environment. Likewise, in no case was the age at which the abuse took place mentioned, even though stage of development is an important factor in the effects it causes. Lastly, the different ways of measuring and the lack of reporting prevalences did not allow for more sophisticated analyses.

Future implications

The results of this review have several implications for future research and ED prevention and treatment. One can conclude from the results that although the family is a factor that exerts an influence it is not the only one. The statistical models performed explained a small percentage of the variance, meaning that the remainder can be attributed to the environment.

Emotional abuse should be covered in all the interviews with cases at risk of ED, since it has a potential role as a risk factor. As part of this interview, the evaluation of cognitive (self-esteem) and affective (anxiety and depression) consequences, the sex of the person and the perpetrator, and the age of abuse should also be included (Kent & Waller, 2000). The latter is important, because it is not yet known whether parental emotional abuse has a greater effect when committed at early ages, or whether emotional abuse during childhood predisposes for maltreatment at later ages, such as, for example, dysfunctional relationships with classmates (Gibb et al., 2004; Zhang, Cecil, Barker, Mori

& Lau, 2018). Moreover, since there may be a bias in the definition of emotional abuse, clinicians must be thorough in the interviews.

The results of this study have implications about how body weight is discussed in the family; parents should not reinforce media messages about losing weight quickly or having a certain body shape. Considering that NC from the mother may reflect her personal concerns with weight and figure, it is therefore important to challenge one's own beliefs about weight and shape and seek help for any DEB indicator. In agreement with Maine (2004), we consider that there is a gender bias in the samples studied, research approaches, instruments used and the theory on the basis of which the analyses were conducted. It is therefore important to conduct more studies on men, both in their role as perpetrators and victims of verbal or emotional violence; and lastly to take the importance of indirect influence into account. Involving parents in the prevention and treatment of EDs is important since it is they who will presumably be responsible for looking after their offspring.

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