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REVIEW

Binge eating and alcohol consumption: an integrative review

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Abstract

Objective To identify the relationship between binge eating and alcohol consumption.

Methods This is an integrative literature review of publications from 2015 to 2019, using the Pubmed, Cinhahl, Psynet, Lilacs, Embase and Web of Science virtual databases and the descriptors ("Binge-Eating" OR "Bulimia") AND Alcohol* in English, Spanish and Portuguese.

Results A total of 964 articles were found. After reading the titles and abstracts and excluding duplicates, 36 articles were included in the final sample (35 in English and one in Portuguese). They were grouped into three thematic categories: "sample profile and characterization", "genetic and environmental factors", and "emotions and behavior".

Conclusions The data indicate the existence of a relationship between binge eating and alcohol use, and some factors were associated with this comorbidity. Still, there were few publications on the theme at the national level, indicating the need for developing more research. These findings may support therapeutic actions and strategies for identification of cases, embracing approaches and more effective treatments to meet the individual's biopsychosocial demands.

Level of evidence Level V, narrative review.

Keywords Binge eating disorder · Binge drinking · Bulimia nervosa · Consumption of alcoholic beverages

Introduction

Eating disorders (ED) are defined as psychiatric conditions that cause changes in the diet and/or eating behavior and may affect the consumption or absorption of food. Their etiology is multifactorial and they are more prevalent in women and characterized by excessive concern with body and weight, compromising the physical health and biopsychosocial development of the individual [1].

Among ED, bulimia nervosa (BN) and binge eating disorder (BED) have similar characteristics in terms of recurrent episodes of high food intake within a short period of time associated with the feeling of loss of control and guilt. The main difference is that in BN, there are compensatory behaviors for the control of body weight such as self-induced vomiting, use of laxatives, diuretics, restrictive diets and excessive physical exercise [2].

Binge eating present in BN can start with a decrease in consumption of foods considered hypercaloric and prohibited to promote weight loss and body satisfaction. The occurrence of the binge eating/guilt/compensatory behavior cycle can become chronic and intermittent with periods of

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remission. Although the absence of compensatory behavior is evident in BED, the constant practice of restrictive diets in the development of binge eating in these people takes place frequently [1, 3].

Bulimia nervosa affects more young women and young adults, while BED prevails in adults, regardless of ethnicity and sex. People with BN usually have normal weight or are overweight while those with BED are overweight and obese and seek treatment to lose weight. Although obesity is not a diagnostic criterion for BED, this eating disorder is associated with the severity of obesity [4, 5].

Low self-esteem, childhood trauma by violence, childhood obesity, early pubertal maturation, genetic factors and social vulnerabilities predispose to greater risk for development of these conditions. In BN, there is a greater concern with body image than in BED, which generates the constant evaluation and distorted perception of body size and shape. However, people with BED use health services with more frequency [1, 5, 6].

These disorders are associated with several health problems such as depression, anxiety, post-traumatic stress, personality disorders, and abuse of psychoactive substances, especially alcohol [4, 7, 8]. Specifically, the search to regulate negative emotions and the tendency to act impulsively are behaviors that influence the occurrence of binge eating and excessive consumption of alcoholic beverages [9–11].

Studies demonstrate gaps in the relationship between alcohol consumption patterns and ED, as well as little understanding of the possible causes and consequences of ED and the use of alcohol [4, 11]. This evidence motivated further studies to explain the cause–effect relationship between ED and alcohol consumption, and added environmental, biological, personality and other behavioral factors as variables [12]. A Colombian survey of adolescents of both sexes with ED found that up to 50% of them were abusing alcohol or some illicit drug. Those who abused alcohol or other drugs were up to 11 times more likely to have ED [13].

The simultaneous occurrence of ED and alcohol consumption is still poorly elucidated in the literature, especially in Brazil. People with ED do not usually report this habit during clinical evaluations, or its relationship with life habits, even when questioned [14]. To contribute to the improvement of patient care, this study aimed to identify the relationship between binge eating and alcohol consumption.

Methodology

This is an integrative literature review, where we sought to identify, analyze and synthesize the results of primary studies that provided evidence on factors associated with binge eating in BN and BED and alcohol consumption.

The integrative review presents a broad methodological approach of reviews, allowing the inclusion of studies with different designs so as to provide a thorough understanding of the studied theme [15]. This methodological strategy involves the following steps: identification of the theme and guiding question, establishment of inclusion and exclusion criteria, literature search, data organization, definition of the information to be extracted from the selected studies, analysis of the studies included in the review, interpretation of results, and synthesis of knowledge [16].

To formulate the guiding question of the study, the PICO strategy was applied, where P (population): women with binge eating disorder who consume alcoholic beverages; I (intervention): factors associated with alcohol consumption in women with binge eating disorder; C (control): it does not apply to integrative reviews; O (outcome): the main evidence found in the literature [17]. Based on this procedure, the following question was established: what are the factors associated with binge eating and alcohol consumption that are evident in the literature?

The studies came from journals indexed in the following electronic databases, from 2015 to 2019: Pubmed, Cinhahl, Psynet, Lilacs, Embase, and Web of Science. The Health Descriptors (DeCS) and Medical Subject Headings (MeSH) were consulted, and the descriptors that were identified and used in the search were: ("Binge-Eating" OR "Bulimia") AND Alcohol*, in Portuguese, English and Spanish.

We included original articles, conducted with human beings regardless of sex and age, with a quantitative and qualitative approach, experimental or non-experimental, with information on binge eating and alcohol consumption. On the other hand, editorials, books, or book chapters, dissertations or theses, case reports, letters, opinion articles, comments, abstracts in annals, essays, studies that reused data from previous works, and duplicate publications were excluded.

An instrument was prepared for the synthesis and analysis of the data including the following items: identification of the article, objective, study design, participants, main results, keywords and thematic categories.

Results

A total of 964 articles were found presenting information about alcohol consumption and binge eating: 160 articles in Pubmed, 80 in Cinahl, 147 in PsycINFO, 41 in Lilacs, 322 in Embase, and 214 in Web of Science.

At first, the titles and abstracts of the total sample were read, resulting in the exclusion of 776 articles. In a second moment, 134 of the 188 articles that remained were excluded because they were duplicated. In a third moment, 54 articles were read in full, and 18 were excluded, because they only

addressed alcohol use or binge eating, or drug use without specifying alcohol and ED other than BN and/or BED. Thus, the final sample was composed of 36 articles that were read in an exploratory way.

Among the selected articles, 35 were published in English and 1 in Portuguese. As for the origin of the studies, there was a concentration of scientific productions in the United States of America, with 21 articles, followed by Brazil, with 4, Italy with 2, and Finland, Spain, France, Australia, Russia, Korea and the United Kingdom, each 1 with 1 article. One article was carried out by researchers from Iraq and Afghanistan and another by the United Kingdom, United States of America and Finland.

Regarding the publication period, it was observed that the year of greatest dissemination was in 2015 with 12 articles. In 2016, six articles were published, seven articles in 2017 as well as in 2018, and four in 2019. Among the studies analyzed, 29 of them were found in more than 1 database, 1 exclusively at Pubmed, 1 at PsycINFO, 1 at Cinahl, 2 at Embase, 2 at Web of Science.

The critical reading and analysis of the articles made it possible to highlight the main results on binge eating (BN and BED) and alcohol use, with the identification of keywords. These keywords were then grouped into the following thematic categories: Sample profile and characterization, Genetic and environmental factors, and Emotions and behavior.

Category 1—sample profile and characterization

The articles that aimed to describe BN and BED characteristics related to alcohol use corresponded to a total of 15. Studies on the prevalence and incidence of ED and alcohol use stood out, and were associations with sociodemographic conditions (sex, age, ethnicity, marital status) and clinical aspects (binge eating practices, dieting, compensatory methods, concern with weight and image body) (Table 1).

Category 2—genetic and environmental factors

Genetic and environmental factors influence the appearance of BN and BED and the use of alcohol were addressed in seven studies. Genetic factors comprise types of twinning and races while environmental factors are determined by childhood experiences, traumatic and stressful experiences, sexual and physical abuse, violence, ideal body phenotype, weight stigma, social minorities and culture (Table 2).

Category 3—emotions and impulsivity

The understanding of binge eating and alcohol use from an emotional and behavioral point of view was addressed in 14 of the studies showing emotional dysregulation, perfectionism, impulsivity, anxiety, depression, negative effects and risk of suicide (Table 3).

The 19 articles in the final sample were read in an exploratory manner. Of these, 16 were published in English and three in Portuguese. Regarding the origin of the studies, there was a concentration of scientific productions from the United States, with 12 articles, followed by three publications in Brazil, two in Sweden, one in Finland and one in England.

Regarding the time of publication, it was observed that three articles were published in 2013, and only one in 2014. In turn, 2015 was the year with more publications, with a total of seven articles. Five articles were published in 2016, and three in 2017. Among the studies analyzed, 13 were present in more than one database, three were exclusively in Pubmed, 2 in the Web of Science, and one in PsycINFO.

The reading and critical analysis of the articles made it possible to group the data into three thematic categories: sample profile and characterization, genetic and environmental factors, and emotions and impulsivity.

Discussion

Regarding the category 1—sample profile and characterization, due to the fact that females have a higher incidence of ED when compared to males [4], some researchers investigated the occurrence of these conditions only in women [11, 27, 29]. Those who investigated in both sexes confirmed the predominance in women [28, 30, 31]. A study in Russia found that the prevalence of BED and BN was similar between the sexes [23]. Another found a relatively higher proportion of BED among men [18, 20]. Notwithstanding the shortage of studies involving men demonstrated by these data and the low prevalence of ED in this sex, greater knowledge about the epidemiological aspects can be useful to outline prevention and treatment strategies.

Regarding age, there was a higher frequency of ED and alcohol consumption in young adults aged up to 38 years [29–31]. Only one study revealed that the probability of binge episodes was present in older individuals, aged 34–54 years [28]. An average age of 27 years was observed for BN and 30.9 years for BED [30]. A study with women with ED identified that more than 80% of them tried alcohol at age 16 and experienced excessive intake until loss of consciousness, and 13.8% did so throughout life [11].

Regarding ethnicity, there was a predominance of ED in white women who consumed alcoholic beverages [14, 29, 30]. Differing from these findings, a study in Brazil found a higher prevalence in brown/black people [18]. These data may be explained by miscegenation in the country.

As for marital status, a study involving 2458 individuals of both sexes showed that those with BED were more likely

Table 1 Characteristics of the studies addressing "Sample profile and characterization" ($n = 15$)

References	Country	Study design	Population	Results
Mustelin et al. [11]	Finland	Longitudinal	182 twin women with eating disorders	Alcohol consumption is more common among women with ED. The risk of increasing alcohol use seems to persist after recovering from the eating disorder
Freitas et al. [18]	Brazil	Longitudinal	785 teenagers enrolled in the second year of high school	The presence of symptoms suggestive of binge eating increased the prevalence of alcohol abuse by 10%
Rolland et al. [19]	France	Cross-sectional	1872 university students	The severity of compulsive eating was significantly correlated with the severity of compulsive drinking
Mitchell et al. [20]	United States of America	Longitudinal	2458 individuals at least 18 years old who underwent bariatric surgery	There was an association between symptoms of alcohol use disorder and BED (alcohol use disorders implied a 65% greater chance of BED)
Solmi et al. [21]	United Kingdom, United States of America and Finland	Cohort study	United Kingdom, $n = 1608$; United States, $n = 3504$; Finland, $n = 2306$	In the three countries, purging was associated with excessive alcohol consumption
Chapa et al. [22]	United States of America	Longitudinal	Participants meeting all the criteria for BN ($n = 77$) and partially meeting the criteria for NB ($n = 48$)	There were no significant differences in terms of drug or alcohol use between the group meeting all criteria for BN and the group partially meeting the criteria for BN
Stickley et al. [23]	Russia	Cross-sectional	2892 teenagers	Many teenagers in Russia reported problematic eating attitudes and behaviors, and eating problems were associated with excessive alcohol consumption
Slane et al. [24]	Iraq and Afghanistan	Cross-sectional	298 veteran men and 364 veteran women	Women who engaged in ED had higher rates of alcohol abuse than veterans without the disorder
Castañeda et al. [25]	United States of America	Cohort study	1149 college freshmen from eight American universities	Bulimia, dietary restriction and exercise significantly predicted the frequency of excessive alcohol consumption
Freire et al. [26]	Brazil	Retrospective cohort study	46 patients (33 women and 13 men) undergoing Roux-en-Y gastric bypass surgery in na outpatient service	The presence of BED before surgery did not predict the use of alcohol and BED after surgery
Łowińska and Ziółkowska [27]	United States of America	Cross-sectional	60 women (30 with alcohol dependence and 30 healthy volunteers)	Women diagnosed with alcohol dependence were more likely to develop compulsive eating behaviors, including binge eating and emotional behavior
Souza da Silva et al. [28]	Brazil	Cross-sectional	15,105 civil servants from 6 higher education institutions, active or retired	Binge eating was common and was associated with overweight and/or obesity, and with a compulsive pattern of alcohol consumption

Table 1 (continued)

References	Country	Study design	Population	Results
Martin et al. [29]	United States of America	Cross-sectional	153 undergraduate female students	White women reported more problems related to alcohol, ED, anorexia nervosa and BN; Those who engaged in diet, fasting or purging were at higher risk for alcohol use
Fouladi et al. [30]	United States of America	Cross-sectional	2966 patients	Patients who exhibited compulsive eating and purging behavior were at increased risk for substance use, which may have important treatment implications
Freita et al. [31]	Brazil	Cross-sectional	780 patients	The was a prevalence of females (59%), and the most frequently diagnosed ED were anorexia nervosa (47.6%) and BN (21.8%), and the most used drug was alcohol (42.8%)

to be single or to get married and divorce afterwards. In addition, they were twice as likely to report symptoms of alcohol use disorder [20]. Corroborating these findings, a study of women who abused psychoactive substances found that most of them were divorced or single [14].

The survey of the current study indicated that there is a simultaneous occurrence of alcohol consumption and ED, in greater proportion in the presence of episodes of binge eating such as BN [19, 22, 29, 30], BED [19, 22, 30], and compulsive-purgative type of anorexia nervosa [30]. However, users of alcohol and other drugs from a Psychosocial Care Center had more symptoms of anorexia nervosa than those typical of BN [31]. This finding was corroborated by another study with 153 university students where it was identified that participants with symptoms of anorexia nervosa and BN consumed more alcoholic beverages, while this consumption was not found in the probable cases of BED [29].

In the United States, a study with 122 women undergoing treatment for psychoactive substance use revealed that 21% of them had ED, and of these, 20% reported one or more episodes of binge eating in the last 28 days [53]. Another study identified an association between the use of alcohol and BED, showing a 65% greater chance of developing BED in people who use alcohol [20].

The Longitudinal Study on Adult Health (ELSA-Brazil) interviewed 15,074 people and found that 6.5% reported 2 or more episodes of binge eating per week and were more likely to have a pattern of high alcohol intake over short periods of time, once or twice a week (8.9%) [28].

A study evaluated the prevalence of alcohol use and BED after Roux-en-Y gastric bypass surgery in 46 patients (33 women and 13 men) and found that alcohol use was frequent throughout the lives of these people and that BED and alcohol use were frequently associated, although no statistical significance was found [26].

The type of psychoactive substance most consumed by patients with ED was alcohol [24, 30, 31]. However, in the results of Killeen et al. [53], cocaine was identified as the most consumed drug, followed by alcohol. Purging was also linked to smoking and excessive consumption of alcohol, marijuana and other drugs in the United Kingdom, United States and Finland [21].

Other relevant factors were physical inactivity and obesity. People with recurrent binge eating episodes are more likely to be sedentary (64.6%) and obese (45.9%) [28]. In contrast, a study of women who abused psychoactive substances showed that 18.7% of them performed excessive physical exercise as a way to control weight [53]. Excessive physical exercise [25, 29], restrictive diets [25, 29], fasting and purging were more subject to problematic alcohol use [29].

Another aspect found in this category concerns body image. Women who used alcohol were dissatisfied with

Table 2 Characteristics of the studies addressing "genetic and environmental factors" ($n = 07$)

References	Country	Study design	Population	Results
Cronce et al. [32]	United States of America	Longitudinal	1067 women self-declaring to belong to a sexual minority	Binge eating emerged as a significant symptom on post-traumatic stress (alcohol use was unrelated)
Baker et al. [33]	United States of America	Longitudinal	Twins of both sexes between 16 and 17 years old; 219 male and 229 female monozygote pairs; 157 male and 175 female dizygotic pairs	The involvement of alcohol and BN showed a phenotypic and genetic association
Brewerton et al. [34]	United States of America	Longitudinal	3006 women > 18 years old	Among the women who had already been involved in the three forms of purging (vomiting, laxatives, diuretics), 64% made abusive alcohol consumption, 56% had alcohol dependence, and 40% post-traumatic stress disorder
Mason and Lewis [35]	United States of America	Cross-sectional	436 self-declared lesbian women between 18 and 30 years old	5% of the sample was characterized by ED and alcohol consumption for amusement; BN symptoms were associated with alcohol use
Munn-Chernoff et al. [36]	United States of America	Longitudinal	3232 female, young adult twins of European descent (55.38% monozygotic) and 549 of African-American descent (42.81% monozygotic)	Genetic and environmental factors were correlated with alcohol abuse behaviors and BN symptoms among women with European and African-American descent
Munn-Chernoff et al. [37]	United States of America	Longitudinal	3540 young adult women (3034 European-American and 506 African-American)	BN behaviors increased among women who tried alcohol or any substance before age 15
Baker et al. [38]	United States of America	Cross-sectional	422 male and 453 female same-sex monozygotic twins and 306 male and 339 female same-sex dizygotic twins	Phenotypic correlations indicated statistically similar associations between bulimic symptoms and alcohol involvement in girls and boys

Table 3 Characteristics of the studies addressing "emotions and impulsivity" ($n=14$)

References	Country	Study design	Population	Results
Vaz-Leal et al. [39]	Spain	Case–control cross-sectional	70 female BN patients and 70 healthy controls	The study confirmed the implications of the clinical factors for alcohol misuse in BN patients, but the results suggested that depressive symptoms and hypercortisolism could lie behind these relationships
Fazzino et al. [40]	United States of America	Longitudinal	103 college freshmen	Fourteen participants engaged in both heavy drinking and binge eating, 32 engaged in heavy drinking only, and seven engaged in binge eating only
Elmquist et al. [41]	United States of America	Cross-sectional	108 men in an abstinence-based residential treatment center	After controlling for alcohol use and problems with drugs and, experiential avoidance was significantly associated with bulimic symptoms.
Trojanowski et al. [42]	United States of America	Cross-sectional	776 undergraduates	The findings suggested that binge drinking in addition to binge eating may not imply more psychological impairment and supported the importance of assessing the motives for eating/drinking among undergraduates and trying to challenge these motives through early intervention
Sysko et al. [43]	United States of America	Case–control	Patients with BN, including women with BN only ($n=18$), BN and current/past alcohol use disorders ($n=13$), and healthy controls ($n=12$)	Contrary to the hypotheses in the study, there were no differences in meal behavior or impulsivity between women with BN with and without an alcohol use disorders
Wakefor et al. [44]	Australia	Cross-sectional	563 university students	Anger rumination was not significantly associated with at-risk alcohol use, but was present in individuals reporting both binge eating and at-risk alcohol use.
Becker and Grilo. [45]	United States of America	Cross-sectional	347 patients who met DSM-IV research criteria for BED	Mood and substance use disorders co-occur frequently among patients with BED
Pompili and Laghi [46]	Italy	Cross-sectional	302 adolescents	The results support the argument that the reasons underlying binge eating and binge drinking in adolescents may be similar
Kim et al. [47]	Korea	Cross-sectional	463 undergraduate female students (346 normal weight and 117 overweight)	Women with BED had more emotional and external eating, more extreme alcohol consumption, and higher levels of neuroticism than women without BED
Elmquist et al. [48]	United States of America	Retrospective	68 young adult men	Symptoms of ED were significantly associated with treatment rejection among young adult men in residential treatment for substance use disorders after controlling for alcohol and drug problems
Pisetsky et al. [49]	United States of America	Longitudinal	133 adult women with BN	Self-reported alcohol intoxication in individuals with BN was reinforced by decreases in negative affect following drinking episodes. These episodes appeared to be preceded by decreases in positive affect and followed by increases in sadness
Mole et al. [50]	United Kingdom	Case–control	30 obese subjects with BED, 30 without BED and 30 abstinent alcohol-dependent subjects and age- and gender-matched controls	There was a dissociation in contrasting subtypes of impulsivity between disorders related to food and drug use

Table 3 (continued)

References	Country	Study design	Population	Results
Racine and Martin [51]	United States of America	Cross-sectional	313 female college students	Negative urgency was significantly associated with dysregulated eating, depressive symptoms, and problematic alcohol use
Pompili and Laghi [52]	Italy	Cross-sectional	1000 adolescents (608 females and 392 males)	Disordered eating and alcohol use similarly contributed to drunkorexia in male and female adolescents, even though there were important sex-related differences

their weight (36%) and their body (34%) due to their feelings of guilt while eating (45.5%), fear of losing control over their diet (30%), and a strong desire to lose weight (50%) [54]. Among women, excessive alcohol use was associated with dissatisfaction with weight and compulsive eating, and among men, with excess weight, vomiting and use of laxatives [23].

With regard to category 2—genetic and environmental factors, the genetic influence on the development of bulimic symptoms and alcohol consumption is clear and recognized in the literature [1, 5, 38]. Genes can predetermine a person's characteristics that directly or indirectly lead to risk behaviors such as disordered eating and alcohol consumption, and it is believed that both conditions have common neural pathways [38].

A study carried out in the USA with adolescents between 16 and 17 years old of both sexes identified phenotypic and genetic correlations between involvement of alcohol use, desire for a lean body and body dissatisfaction, which were significantly higher in females. It was also observed that these environmental and phenotypic correlations were not exclusive between alcohol use, binge eating and/or compensatory behaviors [33].

Another study found different results, where the association between alcohol use and bulimic symptoms was almost twice as high in monozygotic twins as in dizygotic twins. It also demonstrated a significant association between alcohol use and bulimic symptoms in males [38]. These findings suggest that genetic factors have a strong influence on binge eating and alcohol consumption [33, 38].

A study of 3540 twins evaluated the use of nicotine, alcohol and cannabis and found that those who started drinking alcohol early (before 15 years of age) were more likely to develop binge eating and compensatory methods when compared to those who had this experience later on [37].

To identify ethnicity as a genetic factor, a study compared Afro-descendant twins with American twins and observed that the latter group was more predisposed to binge eating and alcohol consumption, although without statistically significant difference [36].

Regarding environmental factors, it is known that experiences of parents are significantly associated with the development of ED and propensity to use psychoactive substances in children [33]. The literature confirms this finding by demonstrating that depression and the use of psychoactive substances in parents increase the risk of involvement of children with alcohol consumption, eating difficulties or both [54, 55].

Another environmental factor is the history of trauma, specifically as a result of cases of violence and post-traumatic stress [34]. A study carried out with 429 self-reported sexual minorities (lesbian and bisexual people) evaluated binge eating and alcohol use as potential aggravating

symptoms of post-traumatic stress, with only binge eating showing a significant association [32]. Still unexpectedly, there was no relationship between a stressful event and alcohol use, since another study with sexual minorities identified this relationship [35]. In general, people in these groups who use alcohol and binge eating report more discrimination, stressful situations, less positive affect and less social support [35].

Regarding category 3—emotions and impulsivity, it is known that binge eating and alcohol consumption are behaviors that are linked to emotional dysregulation [49], impulsivity [43], or both [10, 56]. This comorbidity may be associated with suicide ideation and suicide attempts, anxiety and mood disorders.

Pisetsky et al. [49] evaluated positive and negative emotions in 133 women with BN before and after drunkness and 33.8% of them self-reported at least one episode of alcohol intoxication during the studied period. The results indicated that sadness was stable before drinking alcohol, and a few hours later, this feeling was augmented, suggesting that alcohol did not serve as a mechanism of emotional regulation. Researchers also noted that alcohol and/or food consumption could be a strategy of emotional regulation for coping with suffering, and acting impulsively was a strategy to avoid or divert such negative emotions [56].

A study carried out in Spain with 70 women undergoing treatment for BN showed the association of this condition with alcohol abuse when compared to a non-clinical sample of 70 controls, and also confirmed associations with symptoms of depression, impulsivity, severe traits of borderline personality and self-destructive behaviors for abuse of alcohol in patients with BN. These findings suggest that depressive symptoms and increased cortisol levels could be behind these relationships [39].

Negative emotions and a tendency to act impulsively are common behaviors related to binge eating and heavy drinking [40, 47]. In fact, individuals who drink alcohol are more likely to adopt hasty actions, such as binge eating, when they feel negative emotions [40, 47]. A study examined the use of alcohol and binge eating among adolescents of both sexes and revealed that dysregulation of emotion was a predictor for excessive use of alcohol only in males, mainly due to the difficulty in controlling impulses or reacting before negative emotions [56]. Men are more likely to use emotional regulation strategies in attempts to control impulsivity or change a situation that is believed to drive their emotions than women [52]. However, other results investigating impulsivity in BN patients with and without alcohol consumption did not identify differences between the groups when assessing meal intake and other forms of impulsivity [43].

Symptoms of BN were significantly associated with treatment rejection among young adult men under treatment for psychoactive substance use after controlling problems related to alcohol. A possible reason for the association between symptoms of BN and rejection of treatment is that people with BN who use alcohol and other drugs have high levels of impulsivity and more difficulties with tolerance, distress and emotional regulation [48].

The main limitation of this study is the heterogeneity of the methodologies of the included studies, as they used different diagnostic criteria for BN, BED and alcohol use, and also diverse research instruments and number of participants. The results were discussed considering the multifactorial approach to ED and alcohol use. However, gaps remained as to whether BN, BED and alcohol use share more characteristics and associated factors, because only 18 of the 36 studies in this review compared BN and alcohol use, or BED and alcohol use, or BN, BED and alcohol use.

This review identified that most studies were published in English and only one in Portuguese, in peer-reviewed journals indexed in the selected databases. Studies published between 2015 and 2019 were explored to obtain more up-to-date data, and an increase in research in this area was observed. Longitudinal investigations and randomized clinical trials are needed to better understand the causes and long-term consequences of the relationship between BN, BED and alcohol use that may provide subsidies for the treatment of these serious mental problems.

What is already known on this subject?

Little was known about the association between binge eating and alcohol use before conducting this study, characterizing a gap in knowledge about the factors involved and demonstrating the need for further research to elucidate this question.

What your study adds?

After this investigation, a relationship was identified between binge eating and alcohol use determined by multifactorial characteristics involving sociodemographic (age, sex, marital status), nutritional (dieting, purging and body dissatisfaction), genetic and environmental (traumas, sexual minorities), and emotional (emotional deregulation and impulsive behaviors) factors.

Final considerations

The results of the present study indicated that there is a relationship between binge eating and alcohol use, which is not influenced by a single variable. The investigation showed that sociodemographic, nutritional, genetic, environmental and emotional characteristics of the analyzed samples proved to be relevant in this phenomenon. However, there are few publications on the theme addressed, and therefore further

research is needed. These findings may support therapeutic actions and strategies for the identification of cases, embracing approaches, and more effective treatments to meet the individuals' biopsychosocial demands.

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Compliance with ethical standards

Conflict of interest The author declares no conflicts of interest.

Ethical approval This article does not include studies conducted with human beings of animals.

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