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REVIEW ARTICLE

Eating disorders and obesity in adolescents: Another challenge of our times

Trastornos de la conducta alimentaria y obesidad en adolescentes: Otro desafío de nuestros tiempos

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What do we know about the subject matter of this study?

In adolescence, due to biopsychosocial changes, there is an increasing risk of developing an eating disorder, however, patients with overweight/obesity are generally not accurately diagnosed, often ignoring the significant overlap between both pathologies, with their consequent complications.

What does this study contribute to what is already known?

This review advances the understanding of the complex associations between obesity and eating disorders and the urgent need for exploration of these issues, emphasizing the close and essential contribution between mental health and nutritional professionals.

Abstract

Obesity (OB) and feeding and eating disorders (FED) are complex and prevalent pathologies in adolescents. OB has been shown to be a risk factor for developing binge eating disorder and bulimia nervosa, and vice versa, these FED also develop OB. However, obese adolescents may present atypical or sub-threshold criteria for FED. The objective of this review is to describe the epidemiological, clinical, and therapeutic relationship between FED and OB in adolescents, with emphasis on the urgent need for research and collaboration among professionals in the fields of mental health and nutrition.

Keywords:
Obesity;
Feeding and Eating Disorders;
Adolescent;
Bariatric Surgery

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Introduction

Obesity (OB) and eating disorders (ED) are complex and prevalent pathologies[1-3]. Although both share biopsychosocial etiopathogenic aspects, they are generally focused separately and partially, ignoring a significant co-occurrence between them[4-6].

Before starting treatment[7], dietary restriction, and weight and shape concerns are frequent in overweight/OB youths, more often displaying unhealthy weight control behaviors[7], which constitute risk factors for developing ED; nevertheless, because they are overweight/OB patients, ~~they~~ are generally underdiagnosed and public health programmes have often ignored the significant overlap between OB and ED.

The aim of this article is to describe the epidemiological, clinical, and therapeutic relationship between ED and OB in adolescents and to propose strategies for a simultaneous prevention and treatment.

Epidemiological aspects

In Latin America, the percentages of binge eating disorder in obese people aged 14 to 52.9 years, who attend weight loss programmes range from 16% to 51.6%[ix]. In adult Americans, they fluctuate from 4% to 49%[x] and in adolescents from 15.4% to 41.7%. Also, the rate at which both pathologies ~~jointly~~ increase is significantly higher (4.5 times) than ~~the increase~~ in people with OB only (1.6 times) or with ED without OB (3.1 times)[12].

In Chile, a study of obese adolescents who started treatment reported that 19.6% of females and 12.2% of males developed ED, with higher rates in those with a higher body mass index (20.5%)[13].

Obesity and eating disorders

Obese adolescents usually display atypical or subthreshold criteria for ED, due to excess body weight, and despite a significant weight loss, their diagnosis and treatment are delayed because they do not reach a state of malnutrition[14].

Meierer et al[15] verified that in adolescents with anorexia nervosa and a history of overweight, the drop in weight was much greater than in those without a background of overweight (7 vs 3.8 points). They also showed that more than one-third had a history of being overweight, resulting in a delay between the recognition of anorexia nervosa and its full diagnosis. Kennedy et al[16] observed a higher percentage of weight loss (27.4% vs 16.2%) in patients with typical or atypical anorexia nervosa, overweight or premorbid obesity, and a longer duration of the disease than in patients without such a condition.

It should also be noted that binge eating disorder is the most frequent ED associated with overweight/OB, found in 10% to 25% of patients, so its systematic detection is essential.

Eating habits

He et al[19] estimated the prevalence of binge eating and uncontrolled eating in 22.2% and 31.2% of overweight/OB children and adolescents, respectively.

Food addiction has been associated with greater psychopathology in people with ED and OB, identifying three groups: 1) dysfunctional (higher prevalence of other ED and bulimia nervosa, greater severity of eating pathology, and more dysfunctional personality traits); 2) moderate (high prevalence of bulimia nervosa, personality disorder and moderate levels of eating psychopathology); and 3) adaptive (high prevalence of OB, binge eating disorder, low levels of eating psychopathology, and more functional personality traits)[20].

Stojek et al[21] clasified adolescents with an uncontrolled emotional eating pattern as a subgroup with a particularly high risk of exacerbation of an ED and excessive weight gain. Rose et al[22] found that adolescents with severe OB, with more difficulties in impulsive control during negative mood states, exhibited mostly emotional eating and food addiction, related with lower quality of life. Interventions aimed at reducing negative affections, impulsivity, and reinforcing non-food-based coping skills, may contribute to optimizing the quality of life and they deserve an in-depth study.

Kass et al[23], found that overweight/OB youth who were secret eaters were more prone to depression, dietary restraint, and binging and purging, foreseeing a higher risk of weight gain and ED.

Predictors of risk

ED and OB share biological, environmental, and behavioral risk factors, as well as intermediate neurocognitive phenotypes. OB is a specific risk factor for both binge eating disorder and bulimia nervosa; also patients with these EDs often are OB[26]. A controversial theory postulates that both conditions belong to the same spectrum of eating and weight disorders[25]. Obese patients with EDs, mainly binge eating disorder, show more eating proneness[26], ~~and~~ general[27] and personality psychopathology[28], ~~aspects~~ considered predisposing factors to trigger EDs in overweight/OB individuals.

Opinions about weight and diet in the family, even if well-intentioned, may be perceived as hurtful by the adolescent and contribute to trigger both conditions[29-31]. In children, ~~both~~ family teasing and body dissatisfaction also predict the development of overweight, binge eating, and inadequate weight control behaviours[32,33].

An analysis from birth concluded that maternal chaotic eating, body dissatisfaction, and history of overweight, predicted an occurrence of secret eating in

the child during the first 5 years of life, which although not equivalent to a binge eating disorder, consists of eating alone due to the shame caused by the lack of control, and is therefore proposed as a risk index[34].

Child abuse is another predisposing factor for both pathologies. Victims may turn to food to relieve stress, manage trauma, block unwanted feelings and emotions, or express hatred towards their own body[35]. It would also play a protective role, as obese children would be less attractive to a potential abuser[36]. In female adolescents, abuse has been associated with depression, EDs, and low self-esteem. Some survivors of sexual abuse struggle to lose weight to deny their sexuality. Others become obsessed with dieting or purging to achieve bodily perfection, feel more powerful, invulnerable, and regain self-esteem[37]. Binge eating, purging, and starvation would imply self-punishment to mitigate their guilt. Consequently, the possibility of sexual abuse should be evaluated and included regularly in the study of patients with ED and/or overweight/OB, especially in the female gender[38].

Obesity, eating disorders, bariatric surgery, and post-surgical evolution

In adolescents, medical management of OB is the treatment of choice, but in severe conditions accompanied by comorbidity that do not respond to therapeutic measures, bariatric surgery is an option[39]. However, not everyone would benefit from it; therefore, selection, training for a lifestyle change, and long-term pre- and post surgery follow-up are essential.

Individuals seeking bariatric surgery usually show elevated rates of binge eating and other ED[40]. Although consumption of objectively large amounts of food is difficult post-surgery, those who persisted with uncontrolled eating, experience suboptimal weight loss or even weight regain. Currently, there are no conclusive studies on predictors of success post-surgery; however, patients with binge eating disorders could benefit from the addition of an emotion regulation intervention in ~~the~~ pre and post surgical periods[41].

There are almost no cases of anorexia nervosa pre-surgery, but there is some evidence for its development after the surgery[42-44]. Bulimia nervosa is relatively rare pre-surgery, reaching 3%, and there is little data on post-surgery changes. A possible reason may be its under-reporting due to the fear of being ineligible for this procedure[10]. Binge eating disorder is the most common pathology before surgery, with rates ranging from 4% to 49%[11] in adults and 15.4% to 41.7% in adolescents; with a short-term post-surgical decrease in all ages[41]. In a national follow-up, 3 years after gastric bypass surgery in adults, it was observed that there was no difference in the frequency of binge eating disorder among patients who underwent surgery and those who did not. Low quality of life post-surgery was also observed regarding mental health, particularly associated with mood and sexuality[42].

Initial improvements in binge eating have been demonstrated at 7 years post gastric bypass or banding surgery, but the proportion of patients with long-term binge eating disorder increases: 4.8% reported the onset of binge eating disorder that they did not have previously, 3.8% had a recurrence of this pre-existing condition, and 9.2% reached remission; nevertheless, in this group, 46.6% maintained uncontrolled eating, which may lead to a negative or suboptimal surgical outcome[41].

Another 5-year post-surgery analysis found that mental health problems persist in adolescents despite considerable weight loss, and while this may improve many physical parameters, the relief of psychological complications is unclear, and the bariatric team must offer long-term post-surgery support[40].

Prevention and inclusive treatment of both pathologies

Understanding the knowledge and beliefs of those interested in the prevention and treatment of OB and ED, it is crucial to developing effective interventions in addition to integrated health promotion efforts that focus on shared risk (low self-esteem and body dissatisfaction) and build on protective factors (healthy eating and regular exercise), targeting young children, adolescents, and parents, which can show positive results[5].

Most adolescents with ED were not previously OB, nonetheless, in some obese patients, they may emerge in an attempt to lose weight. The focus should be on a healthy lifestyle rather than weight. Available evidence suggests that OB prevention and treatment, properly implemented, do not predispose to ED[41], demonstrating that structured, professionally administered OB treatment is associated with a reduction in the prevalence, risk, and symptoms of ED. Recent data shows that family and cognitive-behavioral therapies for child and adolescent OB are effective in reducing weight and body shape concerns, ~~and~~ discouraging an ED[42,43].

Analysis and conclusions

This review highlights the relevance of a multidisciplinary approach, mainly from the mental health and nutritional perspectives, and a combined diagnosis of binge eating, emotional and personality disorders in obese adolescents, for better prevention and outcome of both pathologies. The need to include early detection of an ED (especially binge eating disorder), along with the implementation of integrated thera-

peutic programmes, are essential for a better outcome, though, health professionals tend not to identify them in obese people, and their symptoms are more difficult to recognize if they are not routinely and specifically checked for.

If OB prevention and treatment are successfully accomplished, OB does not predispose to EDs[42]; on the contrary, such programmes, which include the family, show a reduction in self-induced vomiting and other pathological compensatory strategies of weight control[43].

Other approaches based on clinical experience that encourage parents to include greater availability of nourishing and beneficial foods, less screen time, more family home-cooked meals, with fewer distractions, and conversations about weight, shape, and diet, can promote a healthy body image[41].

In adolescents, medical treatment of OB is recommended, but in severe cases in which serious medical complications co-exist and do not respond adequately to lifestyle interventions, they may benefit from surgical treatment. However, not everyone would improve from surgery, so its selection and long-term pre- and post-surgical follow-up are essential to obtain good therapeutic results[52]. If an obese adolescent has needed to undergo surgery, it is imperative to take into account the principles and foundations of the "Chilean Consensus on Mental Health for Patients Undergoing Bariatric Surgery"[53], aimed at ensuring the success of the intervention.

Conflicts of Interest

Authors declare no conflict of interest regarding the present study.

References

1. Olivares S, Zacarías I. Estudio para revisión y actualización de las guías alimentarias para la población chilena. Santiago de Chile: Gobierno de Chile, Ministerio de Salud. Instituto de Nutrición y Tecnología de los Alimentos (INTA), Universidad de Chile; 2013. Disponible en: http://web.minsal.cl/alimentos_nutricion.
2. Vio F. Aumento de la obesidad en Chile y el mundo. Rev Chil Nutr. 2018;45(1):6-6.
3. JUNAEB. Mapa Nutricional de la Junta Nacional de Auxilio Escolar y Becas. https://www.junaeb.cl/wp-content/uploads/2013/03/Mapa-Nutricional-2019-1.pdf
4. Q da Luz F, Hay P, Touyz S, et al. Obesity with comorbid eating disorders: Associated health risks and treatment approaches. Nutrients. 2018;10(7):829.
5. Bullivant B, Denham A, Stephens C, et al. Elucidating knowledge and beliefs about obesity and eating disorders among key stakeholders: Paving the way for an integrated approach to health promotion. BMC Public Health. 2019;19(1):1681-91.
6. Hay P, Mitchison D. Eating disorders and obesity: The challenge for our times. Nutrients. 2019;11:1055-59.
7. Goldschmidt A, Aspen V, Sinton M, et al. Disordered eating attitudes and behaviours in overweight youth. Obesity. 2008;16(2):257-64.
8. Lampard A, Maclehose R, Eisenberg M. Adolescents who engage exclusively in healthy weight control behaviours: Who are they? Int J Behav Nutr Phys Act. 2016;13:5-9.
9. Palavras M, Kaio G, Mari J, et al. A review of Latin American studies on binge eating disorder. Braz J Psychiatry. 2011;33:81-94.
10. Opolski M, Chur-Hansen A, Wittert G. The eating-related behaviours, disorders and expectations of candidates for bariatric surgery. Clin Obes. 2015;5(4):165-97.
11. Carriere C, Michel G, Féart C, et al. Relationships between emotional disorders, personality dimensions, and binge eating disorder in French obese adolescents. Arch Pediatr. 2019;26(3):138-44.
12. Darby A, Hay P, Mond J, et al. The rising prevalence of comorbid obesity and eating disorder behaviours from 1995 to 2005. Int J Eat Disord. 2009;42(2):104-8.
13. Marín V, Sommer K, Agurto P, et al. Eating disorders risk among obese adolescents Rev Med Chil. 2014;142(10):1253-8.
14. Taylor S, Ditch S, Hansen S. Identifying and preventing eating disorders in adolescent patients with obesity. Pediatr Ann. 2018;47(6):232-7.
15. Meierer K, Hudon A, Sznajder M, et al. Anorexia nervosa in adolescents: Evolution of weight history and impact of excess premorbid weight. Eur J Pediatr. 2019;178(2):213-9.
16. Kennedy G, Forman S, Woods E, et al. History of overweight/obesity as predictor of care received at 1-year follow-up in adolescents with anorexia nervosa or atypical anorexia nervosa. J Adolesc Health. 2017;60(6):674-9.
17. McCuen-Wurst C, Ruggieri M, Allison K. Disordered eating and obesity: Associations between binge eating-disorder, night-eating syndrome, and weight-related comorbidities. Ann N Y Acad Sci. 2018;1411(1):96-105.
18. Bohon C. Binge eating disorder in children and adolescents. Child Adolesc Psychiatric Clin N Am. 2019;28:549-55.
19. He J, Cai Z, Fan X. Prevalence of binge and loss of control eating among children and adolescents with overweight and obesity: An exploratory meta-analysis. Int J Eat Disord. 2017;50(2):91-103.
20. Jiménez-Murcia S, Agüera Z, Paslakis G, et al. Food addiction in eating disorders and obesity: analysis of clusters and implications for treatment. Nutrients. 2019;11(11):2633.
21. Stojek M, Tanofsky-Kraff M, Shomaker L, et al. Associations of adolescent emotional and loss of control eating with 1-year changes in disordered eating, weight, and adiposity. Int J Eat Disord. 2017;50(5):551-60.
22. Rose M, Nadler E, Mackey E. Impulse control in negative mood states, emotional eating, and food addiction are associated with lower quality of life in adolescents with severe obesity. J Pediatr Psychol. 2018;43(4):443-51.
23. Kass A, Wilfley D, Eddy K, et al. Secretive eating among youth with overweight or obesity. Appetite. 2017;114:275-81.
24. Villarejo C, Fernández-Aranda F, Jiménez-Murcia S, et al. Lifetime obesity in patients with eating disorders: increasing prevalence, clinical and personality correlates. Eur Eat Disord Rev. 2012;20(3):250-4.
25. Wilson G. Eating disorders, obesity and addiction. Eur Eat Disord Rev. 2010;18:341-51.
26. Fassino S, Leombruni P, Piero A, et al. Mood, eating attitudes, and anger in obese

women with and without binge eating disorder. J Psychosom Res. 2003;54:559-66.
27. Zeeck A, Stelzer N, Linster HW, et al. Emotion and eating in binge eating disorder and obesity. Eur Eat Disord Rev. 2011;19(5):426-37.
28. Nasser J, Gluck M, Geliebter A. Impulsivity and test meal intake in obese binge eating women. Appetite. 2004;43:303-7.
29. Berge J, MacLehose R, Loth K, et al. Parent-adolescent conversations about eating, physical activity and weight: Prevalence across sociodemographic characteristics and associations with adolescent weight and weight-related behaviours. J Behav Med. 2015;38(1):122-35.
30. Loth K, Neumark-Sztainer D, Croll J. Informing family approaches to eating disorder prevention: perspectives of those who have been there. Int J Eat Disord. 2009;42(2):146-52.
31. Berge J, Maclehose R, Loth K, et al. Parent conversations about healthful eating and weight: Associations with adolescent disordered eating behaviours. JAMA Pediatr. 2013;167(8):746-53.
32. Eisenberg M, Berge J, Fulkerson JA, et al. Associations between hurtful weight-related comments by family and significant other and the development of disordered eating behaviours in young adults. J Behav Med. 2012;35(5):500-8.
33. Neumark-Sztainer D, Paxton S, Hannan P, et al. Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviours in adolescent females and males. J Adolesc Health. 2006;39(2):244-51.
34. Stice E, Agras W, Hammer L. Risk factors for the emergence of childhood eating disturbances: a five-year prospective study. Int J Eat Disord. 1999;25(4):375-87.
35. Behar R, Arancibia M, Sepúlveda E, et al. Chapter 9. Child sexual abuse as a risk factor in eating disorders. In: Morton N, editor. Eating disorders in the 21st century. Eating disorders: Prevalence, risk factors and treatment options. New York: Nova Science Publishers. 2016;149-72. ISBN: 978-1-53610-062-4.
36. Ackard D, Neumark-Sztainer D, Hannan P, et al. Binge and purge behaviour among adolescents. Child Abuse & Neglect. 2001;25(6):771-85.
37. Rayworth BB, Wise LA, Harlow BL. Childhood abuse and risk of eating disorders in women. Epidemiology. 2004;15(3):271-8.
38. Opydo-Szymaczek J, Jarząbek-Bielecka G, Kędzia W, et al. Child sexual abuse as an etiological factor of overweight and eating disorders - considerations for primary health care providers. Ginekol Pol. 2018;89(1):48-54.
39. Paulus G, de Vaan L, Verdam F, et al. Bariatric surgery in morbidly obese adolescents: a systematic review and meta-analysis. Obes Surg. 2015;25(5):860-78.
40. Childerhose J, Alsamawi A, Mehta T, et al. Adolescent bariatric surgery: A systematic review of recommendation documents. Surg Obes Relat Dis. 2017;13(10):1768-79.
41. Benzerouk F, Djerada Z, Bertin E, et al. Contributions of emotional overload, emotion dysregulation, and impulsivity to eating patterns in obese patients with binge eating disorder and seeking bariatric surgery. Nutrients. 2020;12:3099-114.
42. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. Fifth Edition (DSM-5). Washington, DC: American Psychiatric Association; 2013.
43. Deitel M. Anorexia nervosa following bariatric surgery. Obes Surg. 2002;12:729-30.
44. Conceição E, Orcutt M, Mitchell J, et al. Eating disorders after bariatric surgery: A case series. Int J Eat Disord. 2013;46:274-9.
45. Järvholm K, Bruze G, Peltonen M, et al. 5-year mental health and eating pattern outcomes following bariatric surgery in adolescents: A prospective cohort study. Lancet Child Adolesc Health. 2020;4(3):210-9.
46. Leiva M, Fuentealba C, Boggiano C, et al. Calidad de vida en pacientes operadas de bypass gástrico hace más de un año: Influencia del nivel socioeconómico. Rev Med Chil. 2009;137:625-33.
47. Smith K, Orcutt M, Steffen K, et al. Loss of control eating and binge eating in the seven years following bariatric surgery. Obes Surg. 2019;29(6):1773-80.
48. Golden N, Schneider M, Wood C, et al. Preventing obesity and eating disorders in adolescents. Pediatrics. 2016;138(3):2016-1649.
49. Jebeile H, Gow M, Baur L, et al. Treatment of obesity, with a dietary component, and eating disorder risk in children and adolescents: A systematic review with meta-analysis. Obesity Reviews 2019;20:1287-98.
50. Hayes J, Fitzsimmons-Craft E, Karam A, et al. Disordered eating attitudes and behaviours in youth with overweight and obesity: Implications for treatment. Curr Obes Rep. 2018;7(3):235-46.
51. Balantekin K, Hayes J, Sheinbein D, et al. Patterns of eating disorder pathology are associated with weight change in family-based behavioural obesity treatment. Obesity. 2017;25(12):2115-22.
52. Stice E, Desjardins C. Interactions between risk factors in the prediction of onset of eating disorders: exploratory hypothesis generating analyses. Behav Res Ther. 2018;105:52-62.
53. Leiva M, Cruz M, Díaz P, et al. Manejo psicológico del paciente sometido a cirugía bariátrica. Consenso Núcleo de Psicólogos de Cirugía de la Obesidad de Chile. Rev Med Chil. 2020;148:518-27.