Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity (2021) 26:1357–1363
https://doi.org/10.1007/s40519-020-00943-2

ORIGINAL ARTICLE

The relationship between childhood maltreatment and problematic eating behaviors in bariatric surgery candidates

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Received: 19 February 2020 / Accepted: 8 June 2020 / Published online: 13 June 2020

Abstract

Purpose It is known that childhood maltreatment and problematic eating behaviors are higher in bariatric surgery patients compared to over- and normal-weight persons. The aim of the study is to investigate the relationship between childhood maltreatment and problematic eating behaviors such as restraint, eating concern, weight concern, shape concern, and emotional eating in bariatric surgery patients.

Materials and methods 112 consecutive obese individuals seeking bariatric surgery at a University Hospital were administered asset of scales, including Childhood Trauma Questionnaire (CTQ), Dutch Eating Behavior Questionnaire-Emotional Eating subscale (DEBQ-E), and Eating Disorder Examination-Questionnaire (EDE-Q) and sociodemographic form, cross-sectionally. After descriptive statistics, a regression analysis was conducted to understand the relationships of CTQ scores with EDE-Q total, and subscale scores and DEBQ-E.

Results In the Pearson correlation analysis, a statistically significant positive correlation was found between CTQ total score with EDE-Q total score and all subscales scores. In linear regression analyses, it was found that emotional abuse ($\beta = 0.39$, $p = 0.02$) and physical abuse ($\beta = 0.36$, $p = 0.01$) predicted increased DEBQ-E scores. In addition, sexual abuse was found to significantly predict weight concern ($\beta = 0.26$, $p = 0.04$) and shape concern ($\beta = 0.31$, $p = 0.01$).

Conclusion Our findings showed that the dynamics of problematic eating behaviors may differ depending on the type of childhood trauma. Psychiatric evaluation of bariatric surgery patients is important in understanding the relationship between childhood maltreatment and problematic eating behaviors.

Level of evidence Level V, cross-sectional descriptive study.

Keywords Adverse life events · Bariatric surgery · Childhood maltreatment · Emotional eating · Obesity · Problematic eating behaviors

Introduction

Childhood traumatic experiences cause intentional or unintentional behaviors performed by an individual or community that negatively affect the physical, emotional, mental, and social development of the child. Childhood traumas are generally examined under four headings: physical, sexual, and emotional abuse and neglect [1]. Childhood traumatic experiences such as neglect, physical abuse, and sexual abuse have been shown to be significantly associated with psychiatric disorders in childhood, adolescence, and adulthood [2]. In studies, many disorders such as psychotic, mood, anxiety, somatoform and dissociative disorders, substance use disorder, personality disorders, and eating disorders have been associated with childhood maltreatment [3].

The article is part of the Topical Collection on Obesity Surgery and Eating and Weight Disorders.

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Childhood maltreatment is an important predictor of eating disorders. It is believed that problematic eating behaviors are effective in escape and avoidance of negative cognitions related to trauma. In addition, problematic eating attitudes may be associated with other trauma-related pathologies such as depression and posttraumatic stress disorder [4]. However, it is thought that this behavior pattern enables both problematic eating behaviors and traumatic cognitions to continue [5]. In the meta-analysis of Caslini et al., the relationship of physical, sexual, and emotional abuse with bulimia nervosa and binge eating disorder was shown, while contradictory results were obtained regarding the relationship with anorexia nervosa [6]. In another systematic review of 32 studies, it was reported that between 30 and 50% of eating disorders were found in victims of childhood physical and sexual abuse [7].

Emotional regulation is the ability to regulate and maintain emotions, behaviors, and physiological responses that create a feeling. Individuals with adverse life events in childhood may experience impairments in emotional regulation due to stress and are at risk of developing maladaptive coping strategies, including emotional eating [8]. In a study of 1110 healthy volunteers, it was shown that childhood traumatic experiences predicted emotional eating behavior by increasing depression symptoms and emotional dysregulation [9].

Bariatric surgery is used as a method to reduce weight loss and metabolic complications associated with obesity in morbidly obese people. Although preoperative psychiatric conditions receive little attention, mental health problems are prevalent in individuals seeking and undergoing bariatric surgery than in the normal population [10]. Exposure to childhood traumatic events has also been shown to be associated with increased lifetime risk of obesity [11]. Many studies in obese and morbidly obese individuals have demonstrated a strong relationship between childhood traumatic experiences and obesity [12]. In addition, childhood trauma has been shown to be higher in obesity surgery candidates. It was found that bariatric surgery candidates with body mass index (BMI) > 40 had more childhood trauma history than individuals who were included in the weight-loss program with BMI > 30 [13]. In another study, it was shown that childhood physical, emotional, and sexual abuse, and physical and emotional neglect were more frequent in bariatric surgery candidates than in the normal population [14].

The fact that the presence of comorbid psychiatric disorders is associated with suboptimal weight losses, postoperative complications, and less positive psychosocial outcomes in obese individuals seeking bariatric surgery increases the importance of psychiatric evaluation at the surgery period from baseline to follow-up [15]. Although there is a growing body of evidence that childhood traumatic experiences are associated with problematic eating behaviors and obesity, psychopathological explanations for the cause-and-effect relationship are still insufficient [3]. In addition, the number of studies examining the relationship between childhood trauma types and problematic eating behaviors is low for the pre-surgery obese population. As far as we know, there has been no study in our country that examines this situation [16]. The aim of this study was to investigate the relationship between childhood maltreatment and problematic eating behaviors such as restraint, eating concern, weight concern, shape concern, and emotional eating in pre-surgery obese individuals.

Method

Participants and procedures

This study was conducted using a cross-sectional survey model to investigate the problematic eating behaviors and childhood trauma of individuals with obesity. The population of the study consists of individuals who applied for bariatric surgery to University Hospital between the dates June 2017 and November 2017. The measurement tools were used on 118 people. However, two people discontinued the study and four people were excluded from the study due to incomplete answers to the forms. The data of the remaining 112 participants were obtained by filling the sociodemographic form, CTQ, DEBQ-E, and EDE-Q forms with the self-report method. Informed consent forms were obtained from the participants about their voluntary participation in the study. To carry out the study, permission was obtained from The Non-Invasive Ethical Committee of Bezmialem Vakıf University, Faculty of Medicine (The decision number: 22.06.2017/11,376).

Individuals who were agreed to participate voluntarily were included in the study. In our country, psychiatric evaluation is performed on patients who apply for a compulsory psychiatric consultation before bariatric surgery. Patients with psychiatric disorders such as emotional disorders, psychotic disorders, substance use disorders, and mental disorders (such as mental retardation and dementia syndromes) that affect the judgment and decision of the individual are not accepted for bariatric surgery or the surgical protocol is postponed for these individuals. Therefore, the same exclusion criteria automatically applied to this study. Illiterated subjects were also excluded from study.

Measures

Childhood trauma questionnaire (CTQ)

The CTQ is accepted as an easy-to-use measurement tool based on self-report, showing validity and reliability, useful in retrospectively and quantitatively evaluating experiences

of abuse and neglect before 20 years of age. Developed by Bernstein et al., the CTQ consists of 28 questions, three of which are items that measure the minimization of trauma. The scale consists of five sub-dimensions; emotional abuse, physical abuse, physical neglect, emotional neglect, and sexual abuse. The scoring of the sub-dimensions is from 5 to 25 and total scoring is from 25 to 125 [17]. The Turkish version of the CTQ's validity and reliability has been performed with a Cronbach's alpha value as 0.93, which shows the internal consistency of the scale. The Guttman half test coefficient was 0.97 [18].

Dutch eating behavior questionnaire (DEBQ)

The DEBQ was developed in 1986 by Van Strien et al. It evaluates emotional eating behaviors, external eating behaviors, and restricted eating behaviors, and is composed of 33 items. The items in the questionnaire were evaluated on a 5-point Likert scale (one: never, two: rarely, three: sometimes, four: often, and five: very often) [19]. The Turkish validity and reliability study of the DEBQ scale has been done. Cronbach's alpha value was 0.97 for the emotional eating subscale and 0.94 for the whole scale [20]. In this study, the DEBQ-Emotional eating (DEBQ-E) scale, which contains only 13 items of the emotional eating subscale of the questionnaire, was used, because other subscales of DEBQ overlap with EDE-Q subscales.

Eating disorder examination-questionnaire (EDE-Q)

EDE-Q was developed in 1994 by Fairburn and Beglin. The scale has four subscales: restraint, eating concern, weight concern, and shape concern. The EDE-Q scale, which consists of 28 questions, is evaluated on a Likert scale type between 0 (no days) and 6 (every day). The questionnaire also includes questions that investigate behavioral dimensions of eating disorder.

The frequency of binge eating and weight control methods such as self-vomiting, and laxative and diuretic drugs use are questioned in the scale. A total score of the scale can be obtained and symptoms of eating disorder increase with high scores [21]. The Turkish validity and reliability study of the scale has been conducted in the adolescent population in 2011 by Yucel et al. Validity coefficients ranged from 0.70 to 0.86 for the subscales [22].

Analyses

All data were evaluated using the SPSS-23 statistical package program. Descriptive analyses were used to determine the sociodemographic characteristics of the sample group. We used Pearson product–moment correlation coefficients between the scores of the CTQ, EDE-Q, and DEBQ-E and subscales. We conducted a regression analysis to understand the relationships of CTQ subscale scores with EDE-Q total, and subscale scores and DEBQ-E. The risk values were calculated within a 95% confidence interval. The significance threshold was held at $p < 0.05$.

Results

The mean age of 112 obese participants was 34.78 years and the age range was 18–58 years. 62.5% of the sample were females ($n = 70$). 80.4% ($n = 90$) of the participants were morbidly obese according to the World Health Organization BMI classification. 35.7% of the sample reported medical conditions. Demographic characteristics, and means and standard deviations of the CTQ, EDE-Q, and DEBQ-E are reported in Table 1.

In the Pearson correlation analysis, which was used to evaluate the correlation between the scale scores, a significant positive correlation was found between CTQ total score with EDE-Q total score and all subscales scores. In addition, a statistically significant positive correlation was found between emotional eating with CTQ total and subscales scores. Pearson correlation coefficients between scale scores are presented in Table 2.

In linear regression analysis, it was investigated whether CTQ subscale scores predict problematic eating behaviors. Emotional abuse ($\beta = 0.39$, $p = 0.02$) and physical abuse ($\beta = 0.36$, $p = 0.01$) were found to significantly predict emotional eating. In addition, emotional abuse was found to predict both eating concern ($\beta = 0.67$, $p < 0.01$), and EDE-Q restrain and EDE-Q total score ($\beta = 0.39$, $p = 0.02$). It was found that sexual abuse predicted weight concern ($\beta = 0.26$, $p = 0.04$) and shape concern ($\beta = 0.31$, $p = 0.01$). Regression analysis findings are presented in Table 3.

Discussion

There are a few studies in the literature examining the relationship between childhood maltreatment and problematic eating behaviors in the obese population. In a study involving 301 obese and overweight women, a positive correlation was found between CTQ subscale scores and food addiction and binge eating disorder, and problematic eating behaviors were found to increase BMI [12]. Our study was also performed in obese subjects, and showed a positive correlation between CTQ scores and problematic eating behaviors and emotional eating.

In a study including 1110 participants examining the relationship between childhood maltreatment and emotional eating, a significant correlation was found between CTQ subscales and emotional eating. In this correlation,

Table 1 Participant characteristics and descriptive statistics of the measured variables

Participant characteristics ($N=112$)	%/M (SD); range
Gender	
Female	62.5%
Male	37.5%
Age	34.78 (10–12); 18–58 years
Comorbid medical conditions	
Yes (40)	35.7%
No (72)	64.3%
Body mass index[a]	43,82 (5.76); 31.8–60.5
Obese, class I (8)	7.1% (BMI: 30–34.9)
Obese, class II (14)	12.5% (BMI: 35–35.9)
Obese, class III (90)	80.4% (BMI: ≥ 40)
CTQ scores	45.75 (8.69); 35–70
Emotional abuse	7.19 (3.12); 5–17
Physical neglect	5.63 (1.68); 5–15
Physical abuse	7.18 (2.50); 5–14
Emotional neglect	10.49 (5,12); 5–25
Sexual abuse	5.27 (0.83); 5–9
EDE-Q scores	3.05 (1.24); 0.8–5.8
Restrain	2.12 (1.51); 0–6
Eating concern	2.29 (1.52); 0–6
Weight concern	3.51 (1,03); 1–5.6
Shape concern	4.29 (0.88); 2.1–5.8
DEBQ-E scores	2.77 (1.08); 1–4.9

[a]According to the World Health Organization BMI classification

CTQ childhood trauma questionnaire; *DEBQ-E* Dutch eating behavior questionnaire-emotional eating subscale; *EDE-Q* eating disorder examination-questionnaire

the mediating effect of depressive symptoms and emotional dysregulation was demonstrated [9]. In our study, a statistically significant positive correlation was found between CTQ subscales and emotional eating. Linear regression analysis revealed that emotional and physical abuse significantly predicted emotional eating, while emotional and physical neglect tended to emotional eating. This finding reinforces the evidence that emotional eating is one of problematic eating behaviors in the relationship between childhood maltreatment and obesity.

In one of the studies examining problematic eating behaviors in the relationship between childhood adverse life events and obesity, the total scores of the EDE-Q scale were used. In this study which included 179 participants, it was found that childhood adverse life events were statistically significant predictors of BMI by means of EDE-Q total scores [23]. In our study, it was found that CTQ total score and other subscales except the CTQ physical abuse subscale showed a significant positive correlation with the EDE-Q total score. Our study is the first to evaluate the EDE-Q subscales among studies examining the relationship between childhood maltreatment and problematic eating behaviors. The CTQ emotional abuse subscale showed a significant positive correlation with all of the EDE-Q subscales. Linear regression analysis revealed that the CTQ emotional abuse subscale was a significant predictor of problematic eating behaviors. This finding supports the results of the research, showing that emotional abuse increases problematic eating behaviors through both direct and indirect decreases of self-perception and this relationship between emotional abuse and problematic eating behaviors leads to an increase in BMI [24]. In another study conducted in obese individuals, it was found that emotional abuse and neglect caused more binge eating disorder in obese individuals than physical abuse and neglect [3]. In our study, sexual abuse did not predict total EDE-Q scores, but it was found to be predictive of weight concern and shape concern. This finding may be explained by the fact that sexual abuse independent of diagnosis-level psychopathology in the relationship between sexual trauma and eating disorders causes body dissatisfaction, shame, and changes in body perception [7]. These findings suggest that there may be differences between the type of trauma and the dynamics of problematic eating behaviors.

Table 2 Pearson product–moment correlation coefficients

r	EDE-Q restraint	EDE-Q eating concern	EDE-Q Weight concern	EDE-Q shape concern	EDE-Q total	DEBQ-E
CTQ emotional abuse	0.25**	0.50**	0.28**	0.36**	0.45**	0.37**
CTQ physical abuse	0.09	0.05	−0.10	0.03	0.02	0.29**
CTQ physical neglect	0.17	0.22*	0.19*	0.29**	0.28**	0.32**
CTQ emotional neglect	0.13	0.46**	0.17	0.40**	0.36**	0.31**
CTQ sexual abuse	0.01	0.17	0.21*	0.31**	0.20*	0.23*
CTQ total	0.23*	0.40**	0.22*	0.39**	0.39**	0.38**

CTQ childhood trauma questionnaire; *DEBQ-E* Dutch eating behavior questionnaire-emotional eating subscale; *EDE-Q* eating disorder examination-questionnaire

*$p<0.05$, **$p<0.01$

Table 3 Regression analyses

	Unstandardized coefficients		Standardized coefficients	*t*	Sig	Unstandardized coefficients		Standardized coefficients	*t*	Sig	Unstandardized coefficients		Standardized coefficients	*t*	Sig
	B	Std. error	Beta			*B*	Std. Error	Beta			*B*	Std. Error	Beta		
	Model 1 dependent variable: DEBQ-E					Model 2 dependent variable: EDE-Q weight concern					Model 3 dependent variable: EDE-Q restrain				
Constant	2.29	0.87		2.43	0.01	2.01	0.89		2.03	0.03	0.49	1.37		0.38	0.71
CTQ emotional abuse	0.14	0.06	0.35	2.22	0.01	0.07	0.04	0.22	1.47	0.09	0.04	0.08	0.08	0.69	0.51
CTQ physical abuse	0.20	0.07	0.31	3.25	0.01	−0.19	0.07	−0.29	−2.13	0.02	−0.03	0.11	−0.04	−0.8	0.65
CTQ physical neglect	0.13	0.06	0.33	1.45	0.06	−0.01	0.06	−0.01	−0.09	0.92	0.00	0.07	0.00	−0.01	0.99
CTQ emotional neglect	0.07	0.05	0.39	1.34	0.07	−0.01	0.05	−0.08	−0.39	0.81	−0.08	0.07	−0.31	−0.97	0.34
CTQ sexual abuse	0.01	0.12	0.01	0.03	0.92	0.29	0.09	0.19	2.67	0.03	−0.23	0.17	−0.20	−1.13	0.07
	Model 4 dependent variable: EDE-Q shape concern					Model 5 dependent variable: EDE-Q eating concern					Model 6 dependent variable: EDE-Q total				
Constant	2.81	0.73		3.45	0.01	2.47	0.97		2.28	0.01	2.18	0.48		2.58	0.01
CTQ emotional abuse	0.06	0.04	0.22	1.22	0.17	0.28	0.06	0.64	4.20	< 0.01	0.09	0.05	0.36	2.27	0.01
CTQ physical abuse	−0.5	0.05	−0.10	−0.96	0.15	0.01	0.09	0.02	0.18	0.87	−0.07	0.06	−0.27	−1.16	0.35
CTQ physical neglect	0.01	0.03	0.01	0.06	0.88	0.01	0.07	0.01	0.04	0.97	−0.01	0.04	−0.12	−0.09	0.92
CTQ emotional neglect	0.07	0.03	0.37	1.34	0.08	0.17	0.04	0.58	3.30	< 0.01	0.02	0.03	0.11	0.55	0.63
CTQ sexual abuse	0.31	0.17	0.22	2.39	0.01	0.19	0.17	0.11	0.94	0.44	0.10	0.11	0.07	0.42	0.78

CTQ childhood trauma questionnaire; *DEBQ-E* Dutch eating behavior questionnaire-emotional eating subscale; *EDE-Q* eating disorder examination-questionnaire

Studies have reported that psychiatric comorbidity in bariatric surgery patients is more frequent than the normal population and other obese populations. It has been reported that any kind of childhood traumas reach up to 70% among bariatric surgery candidates. There is also a positive correlation between the severity of obesity and the severity of trauma exposure [25]. The relationship between childhood trauma and problematic eating attitudes has also been demonstrated in obese individuals. The presence of preoperative psychopathology is associated with suboptimal weight losses, postoperative complications, and postoperative psychosocial distress [15]. It is important to examine the relationship between childhood traumatic experiences and problematic eating behaviors in this specific population, and provide information to facilitate the achievement of long-term goals of bariatric surgery.

The first limitation of our study was the evaluation of the study on self-report scale scores without a psychiatric interview. In addition, the study was designed as cross-sectional. These factors may make it difficult to generalize the findings. Longitudinal observation studies in the clinical population may reinforce our findings.

In conclusion, this study is one of the few studies examining the relationship between childhood maltreatment and problematic eating behaviors in preoperative bariatric surgery patients. In this study, all subscales of CTQ, especially emotional abuse, were associated with emotional eating. In addition, sexual abuse predicted weight concern and shape concern. Evaluation of patients before bariatric surgery in terms of childhood traumas and eating pathologies, and managing this condition accordingly, may be important to obtain better surgical outcomes. There is still a need for experimental and clinical studies of the process from childhood maltreatment to obesity.

What is already known on this subject?

Childhood traumatic experiences are associated with problematic eating behaviors and obesity. In addition, childhood maltreatment and problematic eating behaviors are higher in bariatric surgery patients compared to over- and normal-weight persons.

What this study adds?

Childhood trauma subscales, especially emotional abuse, were associated with emotional eating. In addition, sexual abuse was a predictor for weight concern and shape concern. Evaluation and managing of bariatric surgery candidates in terms of childhood maltreatment may be important to obtain better surgical outcomes.

Author contributions Conceptualization: IA, GMS, and SB; methodology: IA, GMS, and SB; formal analysis and investigation: IA, GMS, and AK; writing—original draft preparation: GMS and AK; writing—review and editing: GMS and AK; resources: IA, SB, and AK; supervision: GMS.

Funding Not applicable.

Compliance with ethical standards

Availability of data and material The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of interest The authors have no conflict of interest to declare.

Ethical approval This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Non-Invasive Ethical Committee of Bezmialem Vakıf University, Faculty of Medicine (22.06.2017/11376).

Informed consent Informed consent was obtained from all individual participants included in the study.

References

1. Mutlu H (2015) Assesment of the relationships between childhood traumas and adult obesity. Baskent University, Ankara
2. Green JG, McLaughlin KA, Berglund PA, Gruber MJ, Sampson NA, Zaslavsky AM, Kessler RC (2010) Childhood adversities and adult psychiatric disorders in the national comorbidity survey replication I: associations with first onset of DSM-IV disorders. Arch Gen Psychiatry 67(2):113–123. https://doi.org/10.1001/archgenpsychiatry.2009.186
3. Amianto F, Spalatro AV, Rainis M, Andriulli C, Lavagnino L, Abbate-Daga G, Fassino S (2018) Childhood emotional abuse and neglect in obese patients with and without binge eating disorder: personality and psychopathology correlates in adulthood. Psychiatry Res 269:692–699. https://doi.org/10.1016/j.psychres.2018.08.089
4. Hemmingsson E, Johansson K, Reynisdottir S (2014) Effects of childhood abuse on adult obesity: a systematic review and meta-analysis. Obes Rev 15(11):882–893. https://doi.org/10.1111/obr.12216
5. Trottier K, MacDonald DE (2017) Update on psychological trauma, other severe adverse experiences and eating disorders: State of the research and future research directions. Curr Psychiatry Rep 19(8):45. https://doi.org/10.1007/s11920-017-0806-6
6. Caslini M, Bartoli F, Crocamo C, Dakanalis A, Clerici M, Carrà G (2016) Disentangling the association between child abuse and eating disorders: a systematic review and meta-analysis. Psychosom Med 78(1):79–90. https://doi.org/10.1097/PSY.0000000000000233
7. Madowitz J, Matheson BE, Liang J (2015) The relationship between eating disorders and sexual trauma. Eat Weight Disord 20(3):281–293. https://doi.org/10.1007/s40519-015-0195-y
8. Evers C, Marijn Stok F, de Ridder DT (2010) Feeding your feelings: emotion regulation strategies and emotional eating. Pers Soc Psychol Bull 36(6):792–804. https://doi.org/10.1177/0146167210371383
9. Michopoulos V, Powers A, Moore C, Villarreal S, Ressler KJ, Bradley B (2015) The mediating role of emotion dysregulation

and depression on the relationship between childhood trauma exposure and emotional eating. Appetite 91:129–136. https://doi.org/10.1016/j.appet.2015.03.036
10. Dawes AJ, Maggard-Gibbons M, Maher AR, Booth MJ, Miake-Lye I, Beroes JM, Shekelle PG (2016) Mental health conditions among patients seeking and undergoing bariatric surgery: a meta-analysis. JAMA 315(2):150–163. https://doi.org/10.1001/jama.2015.18118
11. Danese A, Tan M (2014) Childhood maltreatment and obesity: systematic review and meta-analysis. Mol Psychiatry 19(5):544. https://doi.org/10.1038/mp.2013.54
12. Imperatori C, Innamorati M, Lamis DA, Farina B, Pompili M, Contardi A, Fabbricatore M (2016) Childhood trauma in obese and overweight women with food addiction and clinical-level of binge eating. Child Abuse Negl 58:180–190. https://doi.org/10.1016/j.chiabu.2016.06.023
13. Peterhänsel C, Nagl M, Wagner B, Dietrich A, Kersting A (2019) Childhood maltreatment in bariatric patients and its association with postoperative weight, depressive, and eating disorder symptoms. Eat Weight Disord 1:12. https://doi.org/10.1016/10.1007/s40519-019-00720-w
14. Grilo CM, Masheb RM, Brody M, Toth C, Burke-Martindale CH, Rothschild BS (2005) Childhood maltreatment in extremely obese male and female bariatric surgery candidates. Obes Res 13(1):123–130. https://doi.org/10.1038/oby.2005.16
15. Sarwer DB, Allison KC, Wadden TA, Ashare R, Spitzer JC, McCuen-Wurst C, LaGrotte C, Williams NN, Edwards M, Tewksbury C (2019) Psychopathology, disordered eating, and impulsivity as predictors of outcomes of bariatric surgery. Surg Obes Relat Dis 15(4):650–655. https://doi.org/10.1016/j.soard.2019.01.029
16. Belli H, Ural C, Akbudak M, Sagaltıcı E (2019) Levels of childhood traumatic experiences and dissociative symptoms in extremely obese patients with and without binge eating disorder. Nord J Psychiatry 73(8):527–531. https://doi.org/10.1080/08039488.2019.1662085
17. Bernstein DP, Fink L, Handelsman L, Foote J, Lovejoy M, Wenzel K, Sapareto E, Ruggiero J (1994) Initial reliability and validity of a new retrospective measure of child abuse and neglect. Am J Psychiatry 151(8):1132–1136. https://doi.org/10.1176/ajp.151.8.1132
18. Sar V, Ozturk E, Ikikardes E (2012) Validity and reliability of the Turkish version of childhood trauma questionnaire. Turkiye Klinikleri J Med Sci 32(4):1054–1063. https://doi.org/10.5336/medsci.2011-26947
19. Van Strien T, Frijters JE, Bergers GP, Defares PB (1986) The dutch eating behavior questionnaire (DEBQ) for assessment of restrained, emotional, and external eating behavior. Int J Eat Disord 5(2):295–315. https://doi.org/10.1002/1098-108X(198602)5:2<295:AID-EAT2260050209>3.0.CO;2-T
20. Bozan N (2009) To determine of the DEBQ's reliability and validity on Turkish University Students. Baskent University, Ankara
21. Fairburn CG, Beglin SJ (1994) Assessment of eating disorders: interview or self-report questionnaire? Int J Eat Disord 16(4):363–370. https://doi.org/10.1002/1098-108X(199412)16:4<363:AID-EAT2260160405>3.0.CO;2-#
22. Yucel B, Polat A, Ikiz T, Dusgor BP, Elif Yavuz A, Sertel Berk O (2011) The Turkish version of the eating disorder examination questionnaire: reliability and validity in adolescents. Eur Eat Disord Rev 19(6):509–511. https://doi.org/10.1002/erv.1104
23. Bakalar JL, Barmine M, Druskin L, Olsen CH, Quinlan J, Sbrocco T, Tanofsky-Kraff M (2018) Childhood adverse life events, disordered eating, and body mass index in US Military service members. Int J Eat Disord 51(5):465–469. https://doi.org/10.1002/eat.22851
24. Hymowitz G, Salwen J, Salis KL (2017) A mediational model of obesity related disordered eating: the roles of childhood emotional abuse and self-perception. Eat Behav 26:27–33. https://doi.org/10.1016/j.eatbeh.2016.12.010
25. Orcutt M, King WC, Kalarchian MA, Devlin MJ, Marcus MD, García L, Steffen KJ, Mitchell JE (2019) The relationship between childhood maltreatment and psychopathology in adults undergoing bariatric surgery. Surg Obes Relat Dis 15(2):295–303. https://doi.org/10.1016/j.soard.2018.11.009