

Childhood traumas and emotional eating: The mediating role of self-esteem, and emotion dysregulation

Zeynep Koçak¹ · Safiye Elif Çağatay¹

Accepted: 27 March 2024 © The Author(s) 2024

Abstract

Emotional eating is a very multi-dimensional behavior that involves consuming food in response to emotional triggers such as stress, sadness or happiness. It is also known that this behavior can arise from stressful events in childhood. Childhood trauma can cause various psychopathologies by affecting the emotional processes of individuals throughout their lives. Traumatic life events, low self-esteem and coping with negative emotions may play a role in the development and maintenance of emotional eating behaviour, which may manifest as an emotional response. Although there are studies in the literature that consider these variables separately, there is no study that evaluates these variables as a whole. The aim of the current study is to examine the role of self-esteem and emotion dysregulation in the relationship between childhood trauma and emotional eating behaviour. The sample of the study consisted of 400 participants (260 females, 140 males) in the age group of 24-50 years (M=42.00, SD=6.91) residing in different provinces of Turkey. Sociodemographic information form, Childhood Trauma Questionnaire (CTQ), Difficulty in Emotion Regulation Scale (DERS), Rosenberg Self-Esteem Scale (RSES) were administered to the participants. In the current study, the mediating role of self-esteem and emotion dysregulation in the relationship between childhood traumas and emotional eating behavior was tested with 2 different models in SPSS 29 software with PROCESS plug-in. The results of the study revealed that childhood traumas predicted emotional eating behavior and emotion dysregulation. In addition, childhood traumas and emotional eating behavior were found to negatively predict self-esteem. In this context, it was seen that emotional eating behavior revealed emotion dysregulation. When the mediation analysis results were analyzed, it was seen that similar results emerged. The results of the current study showed that emotion dysregulation and self-esteem mediated the relationship between childhood trauma and emotional eating behaviour. Childhood traumas negatively predicted self-esteem, while low self-esteem led to emotional eating behavior. Similarly, it was found that individuals who experienced childhood traumas had emotion dysregulation and emotional eating behavior. The results of the present study highlight the importance for clinicians to assess childhood experiences, emotion regulation processes and self-esteem levels, to consider these variables together, and to provide cognitive and behavioural interventions when emotional eating is identified.

Keywords Emotional eating · Childhood traumas · Emotion dysregulation · Self-Esteem

Introduction

Emotional eating is known as the food intake behaviour of individuals depending on their mood, even though they do not have physical needs. Emotional eating, which occurs as a result of individuals' food intake behaviours being affected by their moods, is defined as a maladaptive emotion regulation strategy that individuals use to suppress the stressful situations they face (Van Strien, 2018). In addition, emotional eating behaviour is known to negatively affect cognitive functions, emotional balance and self-esteem (Backhlom et al., 2013). Emotional eating is known as a behavior in which individuals consume food to cope with stressful emotions such as sadness and loneliness (Evers et al., 2010). Although this situation provides short-term comfort, it can lead to long-term negative consequences such as psychological guilt, unhealthy eating behaviors, and weight gain (Braun et al., 2021). Emotional eating may begin with

Published online: 19 April 2024



Department of Psychology, Istanbul Arel University, Istanbul, Turkey

behaviors such as food intake for comfort after stressful events in childhood (Braden et al., 2021). In addition, in adulthood, this behavior can be learned and triggered by stressful life events or emotional instability, and food intake can become a completely uncontrolled behavior (Konttinen, 2020).

According to the definition given by the American Psychiatric Association (APA) in 2000, trauma refers to emotional experiences such as fear, injury, horror and helplessness felt as a result of events that endanger the life or bodily integrity of the individual. Experiencing traumatic life events is quite common and occurs regardless of age, gender, sexual orientation, race or ethnicity. Childhood traumatic experiences encompass a range of adverse events that occur during a person's early years. These can include emotional, physical, or sexual abuse, neglect (either emotional or physical), incidents of rape, bullying by peers, witnessing domestic violence, and involvement in serious accidents that pose a threat to one's life (Palmisano et al., 2016). These childhood experiences undermine children's sense of safety, trust, and stability and lead to long-term psychological, emotional, and physical health problems later in adulthood. Childhood traumas appear to be an important etiological factor in the development of a number of serious disorders both in childhood and adulthood. Studies reveal that individuals with emotional eating behaviour have childhood traumatic experiences (Pignatelli et al., 2017; Vidaña et al., 2020). Studies examining the relationship between childhood traumas and emotional eating behaviour have found that dissociation (Vanderlinden et al., 2015), emotion dysregulation (Racine & Wildes, 2015), self-esteem (Dunkley et al., 2010; Everill & Waller, 1995) and body satisfaction (Vanderlinden et al., 2015) have a mediating role. Several tools and methods are used to measure childhood traumatic events: clinical interviews, standardized assessment instruments, psychological tests, and observations. Standardized measurement tools (psychological scales) are generally used in academic research to assess childhood trauma.

Emotion dysregulation explains the situations in which individuals' ability to manage their emotional reactions effectively is weak (Gratz & Roemer, 2004). Difficulties can present themselves in various ways such as excessive intensification of emotional experiences, low level of emotion control, and rapid changes in emotional states. Furthermore, challenges in emotion regulation involve the consistent and conflicting utilization of strategies for managing emotions or an inability to select the most suitable strategy to attain a specific goal (Hilt et al., 2011). Avoidance, rumination, denial, emotional suppression, aggression and externalisation can be given as examples of these maladaptive emotion

regulation strategies. Traumas experienced in childhood are associated with emotion dysregulation (Cicchetti et al., 2010). In addition, childhood traumas and emotion dysregulation lead to many problems, which may lead to problems in eating behaviour. Patago et al. (2012) revealed in their study that individuals who were abused in childhood had problems in emotion regulation skills and had a high risk of eating disorders. When individuals have difficulty in controlling their emotional problems, they try to cope with these emotional problems by engaging in eating behaviour. In summary, individuals with adverse childhood experiences may develop maladaptive coping strategies, including stress-induced emotional eating (Evers et al., 2010). This is considered to occur due to emotion dysregulation. Emotion regulation skill is known as a critical skill that is the ability to regulate behaviours and physiological responses to an emotion. From this point of view, it can be stated that traumas experienced in childhood may cause problems in individuals' self-systems, may cause emotion dysregulation (Pollak, 2008) and could potentially result in adverse impacts on the manifestation, identification, communication of emotions, and approaches to handling intense emotional experiences (Southam-Gerow & Kendall, 2002).

Self-esteem must first be developed in that person in order to explain self-esteem in that person. The individual's own thoughts about the self-concept and the individual's self-esteem levels also develop in this process (Yenidünya, 2005). The concept of self-esteem is explained as accepting and valuing oneself as a whole, trusting one's self and having unconditional respect. As the differences between the individual's lifestyle and self increase, it is possible to experience behavioural problems. For this reason, it is thought that there is a relationship between self-esteem and negative experiences. In the process of maturation of selfesteem, the family system in which the individual grows up in childhood should be flexible-minded and tolerant, have confidence in themselves and their children, make children feel that they are safe, support parents and children to communicate effectively (Taşgit, 2012). Traumatic experiences make individuals question the priorities in their lives, and this situation can affect individuals in terms of redefining the self (Walsh, 2007; Wattanasuwan, 2005). In this way, a disconnect can be seen between the past, present and future of individuals in terms of self (Noble & Walker, 1997). The traumas experienced reduce self-esteem in individuals, and low self-esteem can lead to eating disorders. In this context, when examining the correlation between childhood traumas and eating disorders, it can be proposed that the self-esteem and emotion regulation abilities cultivated during childhood might contribute to this association.



The current study

Lazarus and Folkman (1987) stress and coping theory examines how individuals cope with stress and the coping strategies they use. When individuals experience stress in their childhood, they experience immediate relief and learning occurs through food intake as a compensatory or comforting experience. (Donohue, 2016). This condition, known as emotional eating, is used as a coping mechanism and negatively affects emotion regulation processes and is more common in individuals with low self-esteem (Kapoor et al., 2022). Correspondingly, Rosenberg's (1965) studies show that self-esteem is a determinant of how an individual evaluates him or herself in terms of behavior. Low self-esteem increases the likelihood of managing negative emotions and stress caused by negative life events through food intake. Because of these deficits in emotion regulation processes, it is believed that it is very difficult to break this cycle. The findings of this study suggest that understanding the influence of emotion regulation challenges and selfesteem in the connection between childhood traumas and the extent of emotional eating behavior could enhance existing literature. This insight may also contribute to the development of new intervention programs and provide guidance for future research endeavors. Negative life events experienced in childhood can lead to many psychopathologies such as self-esteem (Walsh, 2007), problems in emotion regulation processes (Van Strien, 2018) and eating disorders (Pignatelli et al., 2017). Therefore, it can be stated that the current study provides important details by examining the levels of emotional eating, emotion dysregulation and selfesteem of individuals who experienced trauma in childhood. In this study, it was aimed to examine the role of emotion regulation strategies and self-esteem level in the relationship between childhood experiences and emotional eating behaviour in adult individuals (see Fig. 1).

 H1: Emotion dysregulation level has a mediating role in the relationship between childhood traumas and emotional eating behaviour.

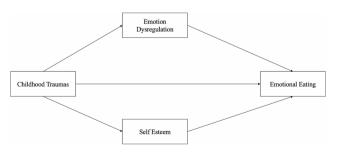


Fig. 1 Research model

 H2: Self-esteem has a mediating role in the relationship between childhood traumas and emotional eating behaviour.

Method

Sample

The sample of the current study consisted of 400 participants (260 females, 140 males) aged 24–50 years (M=42.00, SD=6.91) living in different provinces of Turkey and who voluntarily agreed to participate in the study. The researcher prepared an online survey form and designed an invitation announcement. Participants were then reached through social media accounts. It was observed that the majority of the participants had university and postgraduate education levels, were employed and married. In addition, the BMI status of the participants ranged from 16.53–46.88, and the sample mean was found to be within the limits of normal BMI values (M=24.41, SD=4.05).

Data collection tools

Sociodemographic questionnaire The researchers have devised a form comprising inquiries concerning participants' gender, age, employment status, educational background, weight, and height.

Childhood Trauma Questionnaire (CTQ) The measurement tool developed by Bernstein and Fink (1998) is used to determine the level of trauma that develops from neglect and abuse experienced by individuals in their childhood. Although the CTQ contained 70 items when it was first developed, a shorter version of 29 items, the CTQ-28, was developed later. In the adaptation study for the Turkish sample (Şar et al., 2012), the new factor "overprotectioncontrol" was added due to cultural differences, and the scale was renamed as the CTQ-33. The scale is a 5-point Likert-type scale and the scores obtained from the scale vary between 25 and 150. The measurement tool consists of factors defined as physical abuse, emotional abuse, sexual abuse, physical neglect, emotional neglect and overprotection-control. The items containing positive statements (1, 2, 4, 5, 7, 10, 13, 19, 26, 28, 31) should be reversed before the evaluation. In the current study, the internal consistency coefficient of CTQ was found to be 0.86.

Difficulties in Emotion Regulation Scale (DERS) Gratz and Roemer (2004) created the Difficulties in Emotion Regulation Scale (DERS) for assessing challenges in regulating



emotions. The scale consists of 36 items, and respondents rate each item on a scale of 1 to 5, where 1 represents "almost never" and 5 represents "almost always." The scale does not specify a cut-off score; however, high scores are considered to be a sign of an individual's emotion regulation difficulties. Some items (1, 2, 6, 7, 8, 10, 17, 20, 22, 24 and 34) are reverse scored. The scale is analysed in six sub-dimensions (Awareness, Openness, Nonacceptance Strategies, Impulse, Goals). The original version of the scale demonstrated a high level of internal consistency, with a coefficient of 0.93, and the sub-dimensions exhibited internal consistency coefficients ranging from 0.88 to 0.89. Moreover, the testretest reliability was reported as 0.88. The scale was later translated into Turkish by Rugancı (2008) and subsequently revised by Rugancı and Gençöz (2010). In the current study, the internal consistency coefficient of DERS was found to be 0.91.

Rosenberg Self-Esteem Scale (RSES) The adaptation study of Rosenberg Self-Esteem Scale, which is frequently used in the literature to measure the self-worth of individuals, was conducted by Çuhadaroğlu (1986) and Tuğrul (1994). The scale includes 5 positive and 5 negative statements. The scale is 4-point Likert type and consists of 10 items. Since self-esteem is accepted as a unidirectional concept in the literature, a total score is obtained when calculating the scale (Corwyn, 2000). In the adaptation study of the scale, Cronbach's alpha internal consistency coefficient was calculated as 0.76. The test-retest reliability coefficient was found to be 0.71. High scores obtained from the scale are considered as high self-esteem. In the current study, the internal consistency coefficient of RSES was found to be 0.79.

Turkish Emotional Eating Scale (TEES) Validity and reliability studies were conducted by Bilgen (2018) to determine the level of emotional eating behaviour of individuals. TEES consists of two parts. The first part includes questions about the demographic information of the participants, while the second part includes a Likert-type Emotional Eating Scale. The second part consists of 30 items and 4 factors. In the second part of the TEES, firstly, the following statement is included: "Below are some statements about your life. If you do not have any diagnosed Bulimia Nervosa, Anorexia Nervosa or Binge Eating Disorder, please tick one of the options (never, rarely, sometimes, frequently, almost always) according to the degree of suitability for you." Participants are asked to respond to this statement in five-point Likert type: Never (1), Rarely (2), Sometimes (3), Often (4), Almost Always (5). The subscales of the scale are named according to the items they contain. This scale is used to assess emotional eating behaviours and to determine how often people exhibit these behaviours. In the current study,

the internal consistency coefficient of TEES was found to be 0.89.

Statistical analyses

Before data analysis, the data were examined and it was determined that the kurtosis and skewness values of the scores were within the range of ± 1.5 (Tabachnick and Fidell, 2013), which is known to be accepted as normal distribution. It was also verified that there were no missing data or outliers in the data. After ensuring that the assumptions were met, the analysis continued with parametric tests. Descriptive and correlation analyses of the data were performed using IBM SPSS v.26 software. The study utilized the PROCESS macro v.3.1 (Hayes, 2013) to assess how emotion dysregulation and the level of self-esteem mediate the relationship between the severity of childhood trauma and emotional eating.

Process

This study was conducted with quantitative and crosssectional research method. Ethics committee approval was obtained from [Blinded for reviewer] (Date: 12.09.2023, Decision Number: E-52857131-050.06.04-359229). The current study was conducted by reaching the participants through social media via online surveys. In addition to the sociodemographic information form, an Informed Voluntary Consent Form was presented to the participants before the questionnaire consisting of three psychometrically psychometrically appropriate scales, the validity and reliability study of which was conducted for the Turkish sample, was presented to the participants and the study was continued with the participants who voluntarily agreed to participate in the study. The prepared questionnaire form was delivered to the participants residing in different provinces of Turkey via online surveys and in this context, the sample of the study was selected by random sampling. It took an average of 15 min to complete the questionnaire form.

Results

Details regarding the socio-demographic characteristics of the participants are presented in Table 1.

In the current study, Pearson correlation analysis was performed to determine the relationships between childhood traumas, emotional eating, self-esteem and emotion dysregulation (Table 2). When Table 2 was examined, it was found that there was a positive, high level (r = 0.84; p < 0.01), negative, medium level (r = -26; p < 0.01), positive, medium level



 Table 1
 Information on socio-demographic information and marriage related variables of the participants

Variables	Frequency	%	M	SD
Age			42.00	6.91
BMI			24.41	4.05
Education				
High School	7	1.8		
Bachelor's degree	277	69.3		
Master's Degree	111	27.8		
PhD	5	1.3		
Working Status				
Yes	380	95		
No	20	5		
Marital Status				
Single	74	18.5		
In a romantic relationship	17	4.3		
Married	309	77.3		

(r=0.30; p < 0.01), and significant relationship between the level of CTQ and the level of emotional eating behaviour. In addition, it was determined that there was a negative, moderate and significant relationship between emotional eating level and self-esteem level (r=-0.33; p < 0.01) and a positive, moderate and significant relationship between emotion dysregulation (r=0.45; p < 0.01). Finally, there was a negative, high level and statistically significant relationship between self-esteem level and emotion dysregulation level (r=-0.71; p < 0.01).

Figure 2 presents the results of the Process analysis in which the mediating role of self-esteem level in the relationship between the level of CTQ and emotional eating behaviour levels is examined. When it is examined in the figure, it is seen that the level of CTQ predicts the level of selfesteem negatively and significantly (B = -0.23, S.E. = 0.007, t=-5.66, p<0.001), and the level of self-esteem predicts the level of emotional eating behaviour negatively and significantly (B = -0.30, S.E. = 0.21, t = -6.53, p < 0.001). According to the model, when the self-esteem variable was added to the model, it was observed that the total effect of the level of CTQ on the level of emotional eating behaviour (B = 0.28, S.E. = 0.28, t = 3.81, CI. = 0.55-1.72, p < 0.001) decreased (B=0.13, S.E.=0.28, t=3.36, CI.=0.40-1.52, p<0.001).Preacher and Haves (2004) state that if a relationship exists before the addition of a third variable and this relationship becomes different from zero when this third variable is

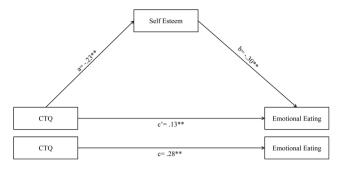


Fig. 2 The role of self-esteem in the relationship between childhood traumas and emotional eating behaviour

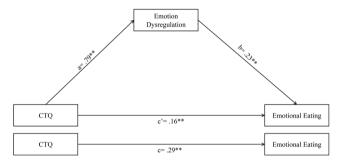


Fig. 3 The role of emotion dysregulation in the relationship between childhood traumas and emotional eating behaviour

added, then this third variable plays a mediating role. In this direction, it was found that the indirect effect of CTQ level on the level of emotional eating behaviour through self-esteem level was significant (B=0.28, S.E.=0.28, t=3.81, CI.=0.55-1.72, p<0.001). In addition, when the variables were evaluated within the scope of the model, the model was found to be significant (F(2, 398)=14.53, p<0.001) and explained 24% of the variance.

Figure 3 shows the results of the Process analysis in which the mediating role of the level of emotion dysregulation in the relationship between emotional eating behaviour and CTQ levels is examined. When Fig. 3 is analysed, it is determined that the level of CTQ predicts the level of emotion dysregulation positively and significantly (B=0.79, S.E.=0.31,t=2.56,p<0.001), and the level of emotion dysregulation predicts the level of emotional eating positively and significantly (B=0.23, S.E.=0.05, t=4.65, p<0.001). When the emotion dysregulation difficulty variable was included in the model, it was observed that the total effect of the level of CTQ on the level of emotional eating behaviour

Table 2 Descriptive and correlation analysis results of the scales used in the study

	M	SD	1	2	3	4
1. CTQ	43.88	9.41	_	.84**	26**	.30**
2. TEES	80.46	22.02		_	33**	.45**
3. RSES	31.14	4.96			_	71**
4. DERS	79.20	22.54				_

***p<.01; 1. CTQ- Childhood Trauma Questionnaire Total Score; 2. TEES- Turkish Emotional Eating Scale Total Score; 3. RSES- Rosenberg Self-Esteem Scale Total Score; 4. DERS- Difficulties in Emotion Regulation Scale Total Score

(B=0.29, S.E.=0.27, t=3.81, CI.=0.55- 1.72, p < 0.001) decreased (B=0.16, S.E.=0.29, t=3.29, CI.=0.38- 1.54, p < 0.001). According to Preacher and Hayes (2004), when the relationship between two variables decreases at a level different from zero with the addition of a third variable and the presence of this added variable, it is stated that this third variable plays a mediating role. In this respect, it was found that the indirect effect of CTQ level on emotional eating behaviour through the level of emotion dysregulation was significant (B=0.29, S.E.=0.27, t=3.81, CI.=0.55- 1.72, p < 0.001). Finally, the analysed model was found to be significant (F(2, 397)=18.46, p < 0.001) and explained 30% of the variance.

Discussion

Traumatic life events are known to play a role in the emergence of eating disorders (Brewerton, 2007). Especially negative events experienced in childhood can lead to many psychopathologies such as eating disorders by affecting the self and emotional states of individuals (Van Strien, 2018). Self-esteem is formed as a result of accepting and evaluating one's own self. In this context, traumas experienced in childhood, when self-esteem develops, have a negative effect on individuals' self-esteem (Sanlier et al., 2015). In other words, traumatic life events experienced in this period negatively affect individuals' mechanisms of recognising and coping with emotions, causing them to have emotion dysregulation (Jones et al., 2019). Experiences of trauma during childhood, such as physical or emotional abuse, neglect, or other adverse events, may instigate feelings of worthlessness and shame. These emotions can detrimentally impact both self-esteem and the processes of regulating emotions, thereby elevating the likelihood of engaging in emotional eating behaviors (Evers et al., 2010). The current study investigated the interplay of emotion dysregulation and self-esteem in the connection between childhood traumas and the extent of emotional eating behavior. The findings of this study indicate an association between childhood traumas and the level of emotional eating behavior, as well as a correlation with self-esteem and emotion dysregulation. The current study also showed that traumas experienced in childhood have a negative impact on emotion regulation processes in adulthood. This finding confirms the findings of the studies in the literature. Previous studies have shown that childhood poverty, maltreatment, emotional abuse and traumatic experiences are associated with emotional dysregulation (Christ et al., 2019; Michopoulos et al., 2015). Childhood trauma has also been found to lead to difficulties in stress perception and emotion regulation (Kim et al., 2021). Furthermore, childhood emotional abuse has been found to predict emotional dysregulation in adulthood (Stone et al., 2018), and emotional dysregulation has been found to act as a mediator between childhood emotional abuse and depression (Crow et al., 2014).

The findings revealed that adults who experienced traumatic life events in childhood, whose self-esteem was negatively affected and who had emotion dysregulation may show more emotional eating behaviour. Based on this discovery, it is conceivable that individuals who faced traumatic life events during childhood but acquired effective coping mechanisms for these situations are likely to exhibit elevated self-esteem. Furthermore, they may not encounter challenges in regulating their emotions and may be less prone to developing emotional eating behaviors.

The childhood traumas are known to lead to many different psychopathologies such as eating disorders. Since childhood traumas cause emotion dysregulation, emotional eating behaviour can be seen in individuals who experience negative life events in childhood (Strodl & Wylie, 2020). Dye (2018) stated that early traumas create long-term serious feelings of shame and guilt that can continue into adulthood. Emotional eating behaviour often emerges in response to these negative emotions and creates a vicious cycle (Evers et al., 2010). Individuals eat to suppress their feelings of shame and guilt, but then feel even worse afterwards, which leads to more emotional eating behaviour (Burnatowska et al., 2023). From this point of view, it can be stated that emotional eating behaviour can also occur in order to calm oneself down and escape from negative emotions. Consumption of high-calorie foods can provide temporary relief as it triggers the release of feel-good neurotransmitters such as serotonin and endorphins, which causes a vicious cycle in individuals' emotion regulation processes (Huseynbalayeva & Emek-Savaş, 2023).

Childhood traumas could significantly predict an individual's self-esteem. Experiences such as abuse, neglect or emotional abuse can weaken the individual's self-esteem (Ekinci & Kandemir, 2015). With the decrease in self-esteem, emotional eating behaviour may develop as a coping mechanism (Groleau et al., 2012). In the current study, it was found that the decrease in self-esteem increased emotional eating behaviour. This finding supports the findings of the studies in the literature. Low self-esteem may play a role as a driving force behind emotional eating behaviour (Arnow et al., 1995). Because individuals may use food to cope with shame, guilt or negative self-concept. In addition, Kent and Waller (2000) stated that traumas may lower individuals' self-esteem and make them more prone to use emotional eating behaviour as a maladaptive coping mechanism.

The present study has some limitations. Firstly, in this study, childhood traumas and symptoms of emotional eating behaviour were evaluated in a non-clinical sample;



therefore, the findings were considered as level rather than diagnostic. Considering that there may be other psychological problems that may be caused by emotional eating behaviour and childhood traumas, it is thought that it may be important to include the psychiatric histories of the study sample in the study. In addition, in terms of the verifiability and generalisability of the findings, it is recommended that future studies should be conducted with a clinical sample when examining the relationship between traumas experienced in childhood and the level of emotional eating behaviour. Since emotional eating behaviour is a very complex structure, it is recommended to examine the relationship between not only childhood traumas but also negative life events experienced in adulthood and attachment styles of individuals. Another limitation of the current study is the research design. Since the study was a cross-sectional (relational) study, the measurements were taken in a single time period and were limited by this. Therefore, the findings obtained were interpreted relationally. It is thought that conducting longitudinal and qualitative studies will provide a deeper perspective in order to understand the nature of the relationships between variables, especially since childhood traumas are quite complex and individual, as well as the other variables considered are participant variables.

According to the previous literature review, it was observed that there was no research examining the role of emotion dysregulation and self-esteem in the relationship between adverse life events experienced in childhood and emotional eating behaviour. The current study is unique in this respect. In addition, it is thought that the wide age range of the study sample, the large number of the sample and the gender distribution being as equal as possible increase the generalisability of the study.

Conclusion and suggestions

Apart from the constraints inherent in the present study, its distinctiveness lies in being the inaugural investigation delving into the impact of emotion dysregulation and self-esteem on the relation between emotional eating behavior and childhood traumas. Furthermore, given the contemporary rise in eating disorders and emotional eating behaviors, discerning the root causes of such behaviors holds significant importance. For this reason, it is thought that the present study contributes scientifically to the literature. The findings of the study suggest that emotional eating behaviour may develop in individuals who have experienced childhood traumas and emotional eating behaviours may increase due to their emotion dysregulation after trauma. In addition, it has been observed that negative events experienced in childhood damage self-esteem and therefore individuals

may engage in emotional eating behaviour. Therefore, it is thought that it is important to examine childhood traumas, emotion regulation skills and self-esteem in individuals who apply to therapy with emotional eating behaviour and to evaluate their role in the individual's life in terms of cognitive and behavioural interventions.

Funding Open access funding provided by the Scientific and Technological Research Council of Türkiye (TÜBİTAK).

Data availability The datasets analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethical statement consisting ethical approval statement Ethical committee approval was obtained from Istanbul Arel University (date: 08.09.2023-2023/18, decision number: E-52857131-050.06.04-359229).

Informed consent After being invited to take part in the study, participants were informed about the study and the fact that the study was only conducted with volunteers.

Conflicts of interest All authors of this article declare that they have no conflicts of interest regarding the article.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/.

References

Arnow, B., Kenardy, J., & Agras, W. S. (1995). The Emotional Eating Scale: The development of a measure to assess coping with negative affect by eating. *International Journal of Eating Disorders*, 18(1), 79–90.

Backhlom, K., Isomaa, R., & Birgegard, A. (2013). The prevalence and impact of trauma history in eating disorders patients. *European Journal of Psychotraumatology*, 4, 1–8.

Bernstein, D. P., & Fink, L. (1998). Childhood trauma questionnaire: A retrospective self-report manual. The Psychological Corporation.

Bilgen, S. S. (2018). Turkish emotional eating scale development, validity and reliability study (Unpublished Master's Thesis). Uskudar University.

Braden, A., Anderson, L., Redondo, R., Watford, T., Emley, E., & Ferrell, E. (2021). Emotion regulation mediates relationships between perceived childhood invalidation, emotional reactivity, and emotional eating. *Journal of Health Psychology*, 26(14), 2937–2949.



- Braun, T. D., Gorin, A. A., Puhl, R. M., Stone, A., Quinn, D. M., Ferrand, J., Abrantes, A. M., Unick, J., Tishler, D., & Papasavas, P. (2021). Shame and self-compassion as risk and protective mechanisms of the internalized weight bias and emotional eating link in individuals seeking bariatric surgery. *Obesity Surgery*, 31(7), 3177–3187.
- Brewerton, T. D. (2007). Eating disorders, trauma, and comorbidity: Focus on PTSD. *Eating Disorders*, 15(4), 285–304.
- Burnatowska, E., Wikarek, A., Oboza, P., Ogarek, N., Glinianowicz, M., Kocelak, P., & Olszanecka-Glinianowicz, M. (2023). Emotional eating and binge eating disorders and night eating syndrome in polycystic ovary syndrome—a vicious circle of disease: A systematic review. *Nutrients*, 15(2), 295.
- Christ, C., Waal, M. M., Dekker, J., Kuijk, I., Schaik, D. J. F., Kik-kert, M., & Messman-Moore, T. L. (2019). Linking childhood emotional abuse and depressive symptoms: The role of emotion dysregulation and interpersonal problems. *PLoS ONE*, 14(2), e0211882. https://doi.org/10.1371/journal.pone.0211882
- Cicchetti, D., Rogosch, F. A., Gunnar, M. R., & Toth, S. L. (2010). The differential impacts of early physical and sexual abuse and internalizing problems on daytime cortisol rhythm in schoolaged children. *Child Development*, 81, 252–269. https://doi. org/10.1111/j.1467-8624.2009.01393.x
- Corwyn, R. F. (2000). The factor structure of global self-esteem among adolescents and adults. *Journal of Research in Personality*, 34, 357–379.
- Crow, T., Cross, D., Powers, A., & Bradley, B. (2014). Emotion dysregulation as a mediator between childhood emotional abuse and current depression in a low-income African-American sample. *Child Abuse & Neglect*, 38(10), 1590–1598. https://doi.org/10.1016/j.chiabu.2014.05.015
- Çuhadaroğlu, F. (1986). Self-esteem in Adolescents. (Unpublished Expertise Thesis). Hacettepe University.
- Donohue, A. (2016). The stress-eating relationship: How food can be used as a coping mechanism for stress and emotions (Master's Thesis). Dublin Business School. http://hdl.handle.net/10788/2946
- Dunkley, D. M., Masheb, R. M., & Grilo, C. M. (2010). Childhood maltreatment, depressive symptoms, and body dissatisfaction in patients with binge eating disorder: The mediating role of self-criticism. *International Journal of Eating Disorders*, 43, 274–281.
- Dye, H. (2018). The impact and long-term effects of childhood trauma. Journal of Human Behavior in the Social Environment, 28(3), 381–392.
- Ekinci, S., & Kandemir, H. (2015). Childhood trauma in the lives of substance-dependent patients: The relationship between depression, anxiety and self-esteem. *Nordic Journal of Psychiatry*, 69(4), 249–253.
- Everill, J. T., & Waller, G. (1995). Reported sexual abuse and eating psychopathology: A review of the evidence for a causal link. *International Journal of Eating Disorders, 18*, 1–11.
- Evers, C., Marijn Stok, F., & de Ridder, D. T. D. (2010). Feeding your feelings: Emotion regulation strategies and emotional eating. *Personality and Social Psychology Bulletin*, 36(6), 792–804. https://doi.org/10.1177/0146167210371383
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment*, 26, 41–54.
- Groleau, P., Steiger, H., Bruce, K., Israel, M., Sycz, L., Ouellette, A. S., & Badawi, G. (2012). Childhood emotional abuse and eating symptoms in bulimic disorders: An examination of possible mediating variables. *International Journal of Eating Disorders*, 45(3), 326–332.

- Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression-based approach. Guilford Press.
- Hilt, L. M., Hanson, J. L., & Pollack, S. D. (2011). Emotion dysregulation. In B. Brown & M. Prinstein (Eds.), *Encyclopedia of Adolescence (s* (pp. 160–169). Elsevier.
- Huseynbalayeva, S., & Emek-Savaş, D., D. (2023). The Effect of Stress on "Wanting" and "Liking" Behaviour in Binge Eating Disorder: The Role of Basic Beliefs, Emotion Regulation and Impulsivity (Master's Thesis). T.C. Dokuz Eylül University, Institute of Social Sciences.
- Jones, J., Kauffman, B. Y., Rosenfield, D., Smits, J. A., & Zvolensky, M. J. (2019). Emotion dysregulation and body mass index: The explanatory role of emotional eating among adult smokers. *Eating Behaviors*, 33, 97–101.
- Kapoor, A., Upadhyay, M. K., & Saini, N. K. (2022). Relationship of eating behavior and self-esteem with body image perception and other factors among female college students of University of Delhi. *Journal of Education and Health Promotion*, 11(1), 80.
- Kent, A., & Waller, G. (2000). Childhood emotional abuse and eating psychopathology. Clinical Psychology Review, 20(7), 887–903. https://doi.org/10.1016/s0272-7358(99)00018-5
- Kim, W. J., Park, K., Park, S., Seo, E., Bang, M., An, S. K., & Lee, E. (2021). Effect of childhood trauma on the association between stress-related psychological factors and hair cortisol level in young adults. *Psychiatry Investigation*, 18(11), 1131–1136. https://doi.org/10.30773/pi.2021.0256
- Konttinen, H. (2020). Emotional eating and obesity in adults: The role of depression, sleep and genes. *Proceedings of the Nutrition Society*, 79(3), 283–289.
- Lazarus, R. S., & Folkman, S. (1987). Transactional theory and research on emotions and coping. *European Journal of Personal*ity, 1(3), 141–169.
- Michopoulos, V., Powers, A., Moore, C., Villarreal, S., Ressler, K. J., & 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
- Noble, C. H., & Walker, B. A. (1997). Exploring the relationships among liminal transitions, symbolic consumption, and the extended self. *Psychology ve Marketing.*, 14(1), 29–47.
- Palmisano, G. L., Innamorati, M., & Vanderlinden, J. (2016). Life adverse experiences in relation with obesity and binge eating disorder: A systematic review. *Journal of Behavioral Addictions*, 5, 11–31
- Pignatelli, A. M., Wampers, M., Loriedo, C., Biondi, M., & Vanderlinden, J. (2017). Childhood neglect in eating disorders: A systematic review and meta-analysis. *Journal of Trauma Dissociation*, 18(1), 100–115.
- Pollak, S. D. (2008). Mechanisms linking early experience and the emergence of emotions: Illustrations from the study of maltreated children. *Current Directions in Psychological Science*, 17(6), 370–375. https://doi.org/10.1111/j.1467-8721.2008.00608.x
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers, 36*(4), 717–731. https://doi.org/10.3758/BF03206553
- Racine, S. E., & Wildes, J. E. (2015). Emotion dysregulation and anorexia nervosa: An exploration of the role of childhood abuse. *International Journal of Eating Disorders*, 48, 55–58.
- Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). Acceptance and commitment therapy. *Measures Package*, 61(52), 18.
- Rugancı, R., N. (2008). The relationship among attachment style, affect regulation, psychological distress and mental construction of the relational world (Doctoral dissertation). Orta Doğu Teknik Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.



- Rugancı, R. N., & Gençöz, T. (2010). Psychometric properties of a Turkish version of the difficulties in emotion regulation scale. *Journal of Clinical Psychology*, 66(1), 1–14.
- Sanlier, N., Biyikli, A. E., & Biyikli, E. T. (2015). Evaluating the relationship of eating behaviors of university students with body mass index and self-esteem. *Ecology of Food and Nutrition*, 54(2), 175–185.
- Şar, V., Öztürk, E., & İkikardeş, E. (2012). Çocukluk çağı ruhsal travma ölçeğinin Türkçe uyarlamasının geçerlilik ve güvenilirliği. Türkiye Klinikleri Journal of Medical Sciences, 32, 1054–1063.
- Southam-Gerow, M. A., & Kendall, P. C. (2002). Emotion regulation and understanding: Implications for child psychopathology and therapy. Clinical Psychology Review, 22(2), 189–222.
- Stone, L., Amole, M., Cyranowski, J., & Swartz, H. (2018). History of childhood emotional abuse predicts lower resting-state high-frequency heart rate variability in depressed women. *Psychiatry Research*, 269, 681–687. https://doi.org/10.1016/j.psychres.2018.08.106
- Strodl, E., & Wylie, L. (2020). Childhood trauma and disordered eating: Exploring the role of alexithymia and beliefs about emotions. *Appetite*, *154*, 104802.
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson.
- Taşgit, M. S. (2012). Investigation of self-esteem and decision-making levels of university students. Master's thesis. Karamanoğlu Mehmet Bey University Institute of Social Sciences.

- Tuğrul, C. (1994). Alkoliklerin çocuklarının aile ortamındaki stres kaynakları, etkileri ve stresle başaçıkma yolları. Türk Psikoloji Dergisi, 9, 57–73.
- Van Strien, T. (2018). Causes of emotional eating and matched treatment of obesity. *Current Diabetes Reports*, 18, 1–8.
- Vanderlinden, J., Claes, L., De Cuyper, K., & Vrieze, E. (2015). Dissociation and dissociative disorders. In T. Wade (Ed.), Encyclopedia of feeding and eating disorders. Springer.
- Vidaña, A. G., Forbush, K. T., Barnhart, E. L., Mildrum Chana, S., Chapa, D. A. N., Richson, B., & Thomeczek, M. L. (2020). Impact of trauma in childhood and adulthood on eating-disorder symptoms. *Eating Behavior*, 39, 101426.
- Walsh, F. (2007). Traumatic loss and major disasters: strengthening family and community resilience. *Family Process*, 46(2), 207–27.
- Wattanasuwan, K. (2005). The self and symbolic consumption. *Journal of American Academy of Business, 6*(1), 179–184.
- Yenidünya, A. (2005). The Relationship between Competitive Attitude, Self-Esteem and Academic Success in High School Students. Unpublished Master's Thesis, Marmara University Institute of Educational Sciences.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

