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Effect of Childhood Traumas on Eating Disorders: Systematic Review

Çocukluk Çağı Travmalarının Yeme Bozukluklarına Etkisi: Sistematik Derleme

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ABSTRACT

This systematic review is aimed at evaluating the relationship between eating disorders (ED) such as anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), a controversial and new concept in recent years; orthorexia nervosa (ON) and childhood traumas (CT). The purpose of this review is to systematically examine whether CT (emotional-physical-sexual abuse and emotional-physical neglect) has any impact on the development of the ED (anorexia-bulimia nervosa, binge eating disorder, orthorexia nervosa) in line with the literature. In this review, Turkish and English articles/dissertations published between 1990 and 2022 in the academic databases of Ebscohost, Proquest Dissertations, Science Direct, Google Scholar and PsycINFO were used to examine the effect of CT on the development of ED. Childhood traumas, eating disorders, aneroxia nervosa, bulimia nervosa, binge eating disorder, orthorexia nervosa, childhood traumas and childhood traumas and eating disorders, childhood traumas and orthorexia nervosa were used as keywords. From the articles/dissertations reached, those who did not have an efficacy study of childhood traumas on eating disorders/orthorexia nervosa and those published before 1990 and after 2022 were not included in the review. Each selected study focused on information on the effects of childhood trauma types on eating disorders and orthorexia nervosa. In line with the determined criteria, the methods, findings and results of the studies of 21 articles/dissertations were explained. It was determined that the types of CT (emotional, physical, sexual abuse and physical and emotional neglect) directly or indirectly predicted ED and were effective on the development of ED, but no effect on ON was observed. This conclusion sheds light on the need to increase studies on ON.

Keywords: Childhood traumas, anorexia nervosa, bulimia nervosa, eating disorder

ÖZ

Bu sistematik derleme anoreksiya nervoza (AN), bulimiya nervoza (BN), tıkınırcasına yeme bozukluğu (TYB) ve son yıllarda tartışmalı ve yeni bir kavram olan ortoreksiya nervoza (ON) gibi yeme bozukluklarının çocukluk çağı travmaları (ÇÇT) ile ilişkisini değerlendiren çalışmalar ele alınmıştır. Bu taramanın amacı; ÇÇT (duygusal-fiziksel-cinsel istismar ve duygusal-fiziksel ihmal) yeme bozuklarına (YB) (anoreksiya-bulimiya nervoza, tıkınırcasına yeme bozukluğu, ortoreksiya nervoza) sebep olup olmadığını yapılan çalışmalar doğrultusunda sistematik olarak incelemektir. Bu çalışmada ÇÇT ile YB ve tutumlarını etkisini incelemek için Ebscohost, Proquest Dissertations, Science Direct, Google Scholar ve PsycINFO akademik veri tabanlarında 1990 ile 2022 yılları arasında yayınlanan Türkçe ve İngilizce makaleler/tezler taranmıştır. Taramada çocukluk çağı travmaları (Chilhood Traumas), yeme bozuklukları (Eating Disorders), aneroksiya nervoza (Anorexia Nervosa), bulimiya nervoza (Bulimia Nervosa), tıkınırcasına yeme bozukluğu (Binge Eating Disorder), ortoreksiya nervoza (Orthorexia Nervosa), çocukluk çağı travmaları ve yeme bozuklukları (Childhood Traumas and Eating Disorders), çocukluk çağı travmaları ve ortoreksiya nervoza (Childhood Traumas and Orthorexia Nervosa) anahtar kelimeleri kullanılmıştır. Ulaşılan makalelerden/tezlerden çocukluk çağı travmalarının yeme bozukluklarına/ortoreksiya nervozaya etkililik çalışması olmayanlar ve 1990 öncesindekiler araştırmaya dahil edilmemiştir. Ele alınan her bir araştırmada çocukluk çağı travma türlerinin yeme bozukluklarına ve ortoreksiya nervozaya etkilerine dair bilgilere odaklanılmıştır. Belirlenen kriterler doğrultusunda 21 makale/ tez ait çalışmaların yöntemlerine, bulgularına ve sonuçlarına odaklanılmıştır. ÇÇT'nin türlerinin (duygusal, fiziksel, cinsel istismar ve fiziksel ve duygusal ihmal) doğrudan veya dolaylı olarak YB'yi yordadığı ve YB'nin gelişimi üzerinde etkili olduğu belirlenmiş fakat ON üzerine bir etkisi tespit edilememiştir. Bu durum ON üzerine çalışmaların arttırılması gerektiğine ışık tutmaktadır.

Anahtar sözcükler: Çocukluk çağı travmaları, aneroksiya nervoza, bulimiya nervoza, yeme bozuklukları

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Introduction

The first discussions about the concept of trauma took place around 100 years ago (Levine 2014). According to Jones (2007), trauma exposure is widespread throughout the world and has a profound and long-lasting impact on individuals and societies. In this context, "trauma" refers to any event that has shaken and injured people's physical and psychological integrity in various ways (Jones 2007). Van der Kolk (2015) argues that trauma creates a radical change in the minds and brains of individuals and reorganizes the management of our perceptions, affecting not only the 'how' and 'what' we think but also the general thinking skills of people. At the same time, psychological traumas are not limited to events experienced in the past and can have long-term effects on people's bodies, brains, and minds. These effects can even be transmitted across generations (Volkan 2000). Psychological traumas, the effects of which can vary widely according to individuals, are also known to be significant factors in the development of many different psychopathologies (Carr et al. 2013).

Therefore, within the scope of this systematic review study, traumas experienced in childhood are examined in the context of psychological traumas and the effects of these traumatic experience(s) on eating disorders (Treausure et al. 2010), one of the psychopathologies whose rate has increased significantly in the recent period, are examined. In addition, analyzing the articles and theses published in this field was intended to produce conclusions that would contribute to the field. This systematic review study aims to examine the relationship between childhood traumas (CT) and eating disorders (ED) in the light of studies and to point out how CT can be a risk factor (possible vulnerability variable) for ED.

DSM History of Psychological Trauma and Trauma

Traumatic events (e.g., war, natural disasters, migration, epidemics) hurt individuals' coping skills and have a compelling mass impact on individuals. Furthermore, traumatic events include exposure to life-threatening events (e.g., physical and sexual assault, traffic accidents), being diagnosed with a fatal disease, and witnessing dangerous events (Öztürk 2003). Ross and Halpem (2009) indicated that psychopathological problems such as post-traumatic stress disorder (PTSD), substance abuse, anxiety, borderline personality disorder (BPD) and dissociative disorders, attachment to the abuser, or abuse of others might emerge in individuals due to traumatic events. At the same time, studies have linked childhood traumas to ED, and ED is more common in these patients than other psychiatric disorders (Kong and Bernstein 2009, Molendijk et al. 2017).

The American Psychiatric Association (APA) first recognized PTSD as a new disorder as a result of Shatan and Lifton's (1980) research with Vietnam veterans (Van der Kolk 2015). For the first time, PTSD was included as a diagnosis in the DSM-III (APA 1980). PTSD, which has been included in the DSM since DSM-III, was classified separately in the most recent DSM-5 (APA 2013) as 'Trauma and Stressor Related Disorders' (APA 2013) (in DSM-IV, it was classified as Anxiety Disorders) (APA 1994). The most significant change in the diagnostic context was related to exposure to the traumatic situation. It was noted that traumatic reactions might occur even when individuals learn about the events from their family and relatives if psycho-traumatic events include content such as the possibility of death, violence, and accidents (APA 2013). Other significant changes are the increase in the number of symptom criteria required for diagnosis from three to four and the addition of the symptom of adverse changes in cognition and mood to the classic PTSD symptoms (APA 2013). In addition, the subjective dimension of psychological trauma was narrowed within the scope of DSM-5, and more explicit criteria were set to make it more measurable (Hunter 2017). Traumas can have a lifelong impact, and early trauma has been linked to lifelong risks (Monteleone et al. 2014).

The concept of childhood traumas (CT) is considered an umbrella term for the four main categories of abuse (physical, sexual, emotional, and neglect) (Tucknott 2014). Many empirical studies reveal that any form of physical, sexual, and emotional abuse and neglect in childhood harms the functioning and development of later life (Glaser 2002, Swanston et al. 2003). These studies reported that CT results in various psychological distress and manifests itself in a wide range of psychopathologies, including ED, and that the impact of psychological distress extends from childhood to adulthood (Hart et al. 1997, Chirichella-Besemer and Motta 2008).

The concept of CT has been widely associated with PTSD in many national and international studies in the literature (Neria 2002, Moore et al. 2013, Alpay et al. 2017). However, as previously stated, CT can cause psychopathologies other than PTSD. Therefore, this review will focus on one of the psychopathologies whose prevalence has been increasing recently, namely, ED. For this reason, CT was scrutinized throughout this review study. The results were analyzed along with the studies conducted about eating disorders (ED), one of the most critical psychopathologies of the recent era.

Eating Disorders, Etiology and Relationship with Childhood Trauma

ED is a complex psychiatric disorder with serious medical consequences, characterized by impaired eating behaviors (Hay et al. 2014). It is a severe public health problem with adverse physiological and mental consequences that is widely seen in adolescents and young adults (Tavolacci et al. 2015). The DSM-5 (APA 2013) contains eight subtypes, including anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), Pica syndrome, rumination disorder, avoidant/restricted food intake disorder, other specified feeding and ED, and unspecified feeding and ED (Köroğlu 2015). However, AN, BN, BED, which has recently been reported to have higher prevalence rates in the community (Treasure et al. 2010), and orthorexia nervosa (ON), a new and controversial concept in recent years, will be discussed within the scope of this study.

AN is a severe disorder characterized by low body mass index (BMI) with intense food restriction (APA 2013). Individuals diagnosed with AN have fears of excessive weight gain and perceptual disorders related to body image (BI). In this sense, their minds are constantly preoccupied with these thoughts, and they severely restrict their food intake to avoid weight gain or to lose weight (Attia 2010). The restriction in food intake and weight loss can lead to numerous physical ailments in individuals with AN, such as cardiac complications (abnormal heart rhythms, heart failure), low blood pressure, hypothermia, and osteoporosis (Meczekalski et al. 2013).

BI, typically defined as an internal representation of one's external appearance, is one factor which plays a significant role in the prognosis of ED (Thompsen 2004). As a matter of fact, modern approaches to AN are based on the BI paradigm. Studies on the previously mentioned issues have primarily focused on women (Guillaume et al. 2016); for example, the dilemma of traumatized women is not only about how the body is perceived, but also about not having a body compromised by the trauma and being unable to live in that body (Young 1992). James (1992) conducted a study based on the increased prevalence of ED in individuals who were exposed to sexual abuse in childhood. In his study, 422 female university students were evaluated to determine the prevalence of childhood sexual abuse and ED and the relationship between the two. The study revealed that 57% of the women surveyed had experienced sexual contact since 14, and 42% of abused women were at risk of developing ED. Unlike AN, those diagnosed with BN do not appear thin and are characterized by recurrent binge eating episodes and behaviors that include not gaining weight and controlling weight (Walsh 2011). Behaviors involving controlling weight can often include self-induced vomiting and laxative or diuretic use (Hay et al. 2009). In individuals with BN, these behaviors continue in a vicious cycle (Fairburn et al. 2003). This vicious cycle of binge eating and purging behaviors will inevitably harm the individual's body. Some of the damages include esophagitis (inflammation of the throat), dental erosion, dehydration, and heart problems (National Collaborating Centre for Mental Health; NCCMH 2004). According to a study evaluating the relationship between childhood physical and sexual abuse and ED, psychiatric symptoms, and the likelihood of subsequent abuse in adulthood in women diagnosed with BN, women diagnosed with BN reported higher levels of childhood abuse (Le'onard 2002).

BED is characterized by recurrent binge eating episodes, and unlike BN, there are no compensatory weight loss behaviors. Therefore, it is frequently associated with obesity (Tanofsky-Kraff et al. 2013). Overeating and obesity due to weight gain tend to be closely associated with physical complications such as diabetes, heart disease, and hypertension (NCCMH 2004). Belli et al. (2019) assessed CT and the prevalence of dissociative symptoms in obese patients with and without BED. Of 241 obese patients, 75 (31.1%) were diagnosed with BED, and obese patients with BED were more likely to have higher dissociative, physical, and emotional abuse total scores than those without BED.

Steven Bratman (1997) first addressed Orthorexia Nervosa (ON), which is still a controversial and new concept. According to Bratman (2017), ON has two stages: The first usually involves maintaining a healthy diet, whereas an intense obsession with healthy eating characterizes the second stage, so this second stage is considered pathological. In this perspective, as long as the interest in healthy eating is not obsessive, it does not become pathological. It can lead to weight loss due to healthy eating, health problems, and daily functioning. In this second stage, obsessive thinking, compulsive behavior, self-punishment, increased restriction, and all the dynamics of traditional ED begin to occur (Bratman 1997, Fidan 2010). Studies exploring the effect of individuals' CT on orthorexic behaviors are minimal. In our literature review at the time of writing this article, we could not encounter an international study investigating the relationship between CT and ON; only two studies conducted in Turkey were identified (Merdin 2018, Kaya 2019) and included in this review.

Method

In this study, articles/theses written in Turkish and English and published between 1990 and 2022 in Ebscohost,

Proquest Dissertations, Science Direct, Google Scholar, and PsycINFO academic databases were scanned in order to find studies examining the effect of CTT on ED and attitudes and the relationship between these two. In the search "childhood traumas (Childhood Traumas), eating disorders (Eating Disorders), anorexia nervosa (Anorexia Nervosa), bulimia nervosa (Bulimia Nervosa), binge eating disorder (Binge Eating Disorder), orthorexia nervosa (Orthorexia Nervosa), Childhood Traumas and Eating Disorders, Childhood Traumas, and Orthorexia Nervosa" keywords were used. The search resulted in 159,644 studies with these keywords. This systematic review included articles/theses published between 1990 and 2022, whose full text was accessed, whose language was Turkish and English, which investigated the relationship between childhood traumas and eating disorders (AN, BN, BED)/orthorexia nervosa, and whose research design was qualitative and quantitative. Among the articles/theses, those before 1990, which did not investigate the relationship between childhood traumas and eating disorders/orthorexia nervosa, whose full text was unavailable, and whose language of publication was neither Turkish nor English, were not included in the study. Applying this method resulted in twenty-one articles/theses that met the specified criteria. In each study, we focused on whether childhood trauma types (emotional, physical, sexual abuse, and emotional and physical neglect) lead to eating disorders (anorexia nervosa, bulimia nervosa, and binge eating disorder) and orthorexia nervosa.

Results

In this systematic review study, twenty-one articles/theses, thirteen of which were international, eight of which were of Turkish origin, seventeen of which were articles, and four of which were theses, were analyzed within the specified criteria. In the included studies, we aimed to reach the findings on the direct and indirect causes of CT leading to ED and ON. Detailed information about the studies is summarized in Table 1 in alphabetical order of the authors' names.

Methodological Characteristics of the Studies Reviewed

Sample

Some of the samples of the analyzed studies consisted of university students (Kent et al. 1997, Gürcan et al. 2019), while others consisted of participants who were diagnosed as having an ED according to DSM-IV and DSM-5 criteria (e.g., Grilo et al. 2002, Guillaume et al. 2016). The age range of the participants varied between 12 and 68 years, depending on the studies. The sample sizes of the studies ranged from 73 (Kong and Bernstein 2009) to 1254 (Burns et al. 2012), and a total of 5722 participants were reached in all studies.

Measures and Measurement Methods

In the majority of the studies, CTI (Fink 1995), CTQ-28 and CTQ-53 (Bernstein et al. 1998), ÇÇTÖ (Şar 2012), EDE-Q (Fairburn and Cooper 1993), EDI (Kent et al. 1997), EDI-2 (Kong and Bernstein 2009), SCOFF Eating Attitudes Test (EAT-26; Savaşır and Erol 1989), Dutch Eating Behaviors Questionnaire (Arslanoğlu 2015) were used to measure eating disorders and attitudes. In line with the variables determined in some studies, the Parental Attitudes Scale (Kuzgun 1972), Schema Identification Inventory (ASI; Cash and LaBarge 1996), Beck Depression Scale (BDI; Beck 1961), Body Perception Scale (BPS; Hovardoğlu 1990), Body Image Avoidance Questionnaire (BIAQ; Rosen et al. 1991), Barratt Impulsivity Scale (BIS; Barrat 1985), Center for Epidemiologic Studies Depression Scale (CES-D; Weissman 1977), Determination of Personality Disorders Questionnaire (DAPP-BQ; Livesley and Jackson 2002), Emotion Regulation Scale (DERS; Gratz and Roemer 2004), Dissociative Experiences Identification Scale (DES; Bernstein and Putnam 1986), Dissociation Identification Questionnaire (DIS-Q), Anxiety and Depression Scale (HADS; Zigmond and Snaith 1983), Impulsive Behaviors Scale (IBS; Rosotto et al. 1998), Life Satisfaction Scale (Dağlı and Baysal 2016), Maudsley Obsessive-Compulsive Symptom Scale (MOCS; Hodyson and Rachman 1977), Rosenberg Self-Esteem Scale (RBSS; Rosenberg 1963), and orthorectic tendencies assessment scales (ortho-11; Arusoğlu et al. 2008, ortho-15; Donini et al. 2005) were used for orthorexia nervosa. In addition, in some studies, self-report forms were completed, and semi-structured and structured clinical interviews were administered.

Research Methods

The analyzed studies consisted of structured or semi-structured qualitative research (Wiederman 1998, Grilo et al. 2002, Leonard et al. 2002, Crawford et al. 2014, Guillaume et al. 2016, Utzinger et al. 2016, Belli et al. 2019), relational survey model, descriptive and cross-sectional studies (e.g., Gürcan et al. 2019, Kaya 2019, Kocakaya 2019, Merdin 2018, Tunç 2019, Okumuşoğlu 2022), case-control studies (Wonderlich 2007). Structural equation modeling (Burns et al. 2012) and regression analyses (Kong and Bernstein 2009) were also applied in

some studies.

Outcomes

Studies have shown that sexually abused women are at risk of developing BN (James 1992, Wonderlich et al. 2001), and patients diagnosed with BN have high scores on childhood abuse scores (Leonard et al. 2002, Fosse and Holen 2006, Crawford et al. 2014, Utzinger et al. 2016). Most patients with BED reported childhood maltreatment (Grilo et al. 2002, Belli et al. 2019), and the strongest predictor of AN was emotional abuse (Racine and Wildes 2015). While Kocakaya's (2019) study reported that CT indirectly negatively affected eating attitudes, other studies suggested that only emotional abuse was effective (Kent et al. 1997). Moreover, according to some studies, emotional, physical, and sexual abuse influences the development of ED (Kong and Bernstein 2009, Guillaume et al. 2016, Gürcan et al. 2019).

When the studies on Orthorexia Nervosa were examined, Kaya (2019) found no correlation between CT and ON but revealed a relationship between physical neglect and orthorexic tendencies. In this direction, it was suggested that ON might occur in individuals exposed to physical neglect. In the study conducted by Merdin (2018), a positive correlation was established between CT and psychopathological symptoms, while no correlation was found with orthorexic symptoms (Merdin 2018).

Table-1 Reviewed studies

Reference	Sample	Measurement Tools	Purpose of the Study	Results of the Study
Belli et al.(2019)	A total of 241 obese patients aged 16-61 years, 60 males and 181 females	Dissociation Determination Questionnaire (DIS-Q), Childhood Trauma Questionnaire-53 (CTQ-53)	Childhood trauma history and dissociative symptoms in obese patients with binge eating disorder (BED) and obese patients without binge eating disorder (BED)	It was found that obese patients with BED had higher dissociative scores than those without BED and those with BED had higher total scores for physical and emotional abuse than those without BED.
Burns et al.(2012)	1,254 university students aged 18-22	Childhood Trauma Questionnaire (CTQ) Emotion Regulation Scale (ERS), Eating Disorders Examination Questionnaire (EDE-Q)	Examining the relationship between emotion regulation and childhood abuse and later eating disorders	The effects of physical and sexual abuse were found to be strongly associated with eating pathology.
Corstorphine et al.(2007)	A total of 102 participants between the ages of 17-63, 101 female and 1 male, diagnosed with eating disorders according to DSM-IV	Semi-structured interviews	To examine whether certain types of trauma are predictive of impulsive behaviors and to address the links between reported childhood trauma and multiple impulsivity in eating disorders	Women with eating disorders who reported a history of childhood sexual abuse were found to be accompanied by impulsive behavior patterns.
Crawford et al.(2014)	125 female participants with a mean age of 25 years, diagnosed with Bulimia Nervosa according to DSM-IV	Structured clinical interviews, Eating Disorders Questionnaire (EDE), Determination of Personality Disorders Questionnaire (DAPP-BQ)	Examining the Relationship between Childhood Traumas, Substance Use Disorder and Bulimia Nervosa and Affective Disorder	MDT has been associated with the development of both bulimia nervosa and substance use disorders and an impulsive, behaviorally dysregulated trajectory, and affect dysregulation has been identified as a factor involved in the development of eating disorders, substance use disorders, and other forms of impulsive behavior.
Fosse ve Holen (2006)	107 female participants aged between 18 and 55 years, diagnosed with anorexia and bulimia	Childhood Trauma Questionnaire (CTQ) Parental Attachment Style Questionnaire	To examine the relationship between childhood maltreatment and eating disorders	Those with BN were found to have more emotional, sexual and physical abuse than those without BN, but

	nervosa according to DSM-IV criteria			no significant difference was found for Anorexia nervosa for any type of abuse in childhood.
Grilo et al.(2002)	A total of 116 binge eating disordered participants, 90 women and 26 men, aged between 18 and 60 years, diagnosed according to DSM-IV	CTQ and structured clinical interview	To examine the association between retrospective reports of different types of childhood maltreatment and current personality disorders in patients with binge eating disorder (BED)	Among patients with BED, 82% reported childhood maltreatment and 30% met criteria for at least one personality disorder diagnosis.
Guillaume et al. (2016)	According to DSM-5 diagnostic criteria, a total of 192 participants over 15 years of age with AN (n=102), BN (n=64) and SDD (n=26)	Structured Clinical Interviews	To investigate whether specific subtypes of the MDT are associated with more severe features of eating disorders, independent of psychiatric comorbidity, and whether they exert additive effects.	Emotional abuse independently predicted higher eating, shape and weight concerns and lower daily functioning, whereas sexual and physical abuse independently predicted higher eating concerns.
Gürcan et al.(2019)	268 female students studying at state and foundation universities	Sociodemographic Information Form, Eating Attitudes Test, Childhood Traumas Scale, Life Satisfaction Scale	To investigate the relationship of eating attitudes with childhood trauma and life satisfaction in female university students	Childhood traumas (emotional, physical and sexual abuse, emotional neglect) were found to increase the level of eating disorders and emotional abuse, emotional neglect and physical neglect were found to decrease life satisfaction.
James (1992)	422 participants aged 18-55 at the University of North Texas	Demographic Information Form, Abuse Identification Form (EDI-2)	To determine the prevalence of childhood sexual abuse and eating disorders and the relationship between the two	A total of 57% of the women surveyed reported having experienced some form of sexual contact before the age of 14 and 42% of these abused women were found to be at risk of developing an eating disorder.
Kaya (2019)	A total of 461 participants aged 18-68, 327 women and 134 men	Ortho-15 Scale, Childhood Trauma Scale (CTQ-28)	To investigate the relationship between orthorexia nervosa and childhood traumas with various variables	It was concluded that there was no relationship between orthorexia nervosa and childhood trauma, but a significant negative relationship was found between orthorectic symptoms and physical neglect.
Kent et al.(1997)	A total of 236 female participants aged 18-48, consisting of 157 psychology undergraduate and 79 nursing students	Child Abuse and Trauma Scale, Anxiety and Depression Scale (HADS), Dissociative Experiences Scale (DES), Eating Disorders Inventory (EDI)	To examine the relationship between four types of childhood traumas (sexual, physical, emotional abuse and neglect) and eating psychopathology	When the interrelationships of different forms of abuse were controlled, emotional abuse was found to be the only form of childhood trauma that predicted unhealthy adult nutritional attitudes.
Kocakaya (2019)	60 women (mean age: 25.93) and 20 men (mean age: 26.25),	Eating Attitudes Test, Beck Depression Scale, Rosenberg Self-Esteem Scale, Body Perception Scale, Parental	To examine variables that may be associated with eating disorders.	It was determined that as childhood traumas such as emotional neglect and abuse,

	totaling 80 participants (mean age: 26.01)	Attitudes Scale, Relationship Scales Questionnaire and Childhood Traumas Scale		physical neglect and abuse increased, depression levels increased, eating attitudes did not change, and in case of denial of childhood trauma, depression levels decreased and deterioration in eating attitudes increased, while positive body perception and self-esteem increased.
Kong and Bernstein (2009)	73 Korean patients aged 12 years and older with eating disorders	Childhood Trauma Questionnaire (CTQ), Eating Disorders Inventory (EDI-2), Beck Depression Scale and Maudsley Obsessive-Compulsive Symptom Scale	To examine the relationship between five types of childhood traumas (physical, emotional, sexual abuse and physical and emotional neglect), eating disorders, depression and obsessive compulsion	Emotional abuse, sexual abuse and physical neglect were found to predict current eating pathology.
Leonard et al.(2002)	51 bulimic and 25 non-bulimic participants with an average age of 14 to 31 years	Semi-structured interviews and self-report measures, Personality Disorders Questionnaire (DAPP-BQ), Eating Attitudes Test (EAT-26), Center for Epidemiological Studies Depression Scale (CES-D), Barrat Impulsivity Scale (BIS), Dissociative Experiences Scale (DES)	To assess the associations between childhood physical and sexual abuse and eating disorders, psychiatric symptoms, and likelihood of subsequent abuse in adulthood in bulimic women	Women with BN reported higher levels of childhood abuse and also bulimic women showed more psychopathology than non-bulimic women and there was a concordance between the presence and severity of abuse and the concurrent severity of psychopathological symptoms.
Merdin (2018)	494 participants aged 20 and above, 420 women and 74 men	Demographic Information Form, Childhood Mental Trauma Scale (CRTS), Ortho-11, Short Symptom Inventory (BSI)	The role of childhood psychological trauma levels and psychopathological symptoms on orthorexia nervosa (ON)	While there was a significant positive correlation between childhood trauma experiences and psychopathological symptoms, no correlation was found with orthorectic symptoms.
Okumuşoğlu (2022)	289 participants between the ages of 21-49, 139 women and 150 men living in TRNC	REZZY eating disorder scale, Childhood Traumas Scale and Life Satisfaction Scale, Demographic Information Form	To examine the relationship between eating disorder tendencies, childhood traumas and life satisfaction	It was determined that participants with eating disorder tendency had higher scores in terms of childhood traumas, emotional abuse, physical abuse and sexual abuse.
Racine ve Wildes (2015)	188 Aneroxia Nervosa patients over 16 years of age	Childhood Trauma Questionnaire (CTQ), Emotion Regulation Scale, Eating Disorder Scale	To assess whether childhood abuse (emotional, sexual, physical) is associated with emotion dysregulation difficulties and eating disorder symptom severity in patients with AN	Of the three forms of childhood abuse, emotional abuse reports were found to be most strongly associated with emotion regulation difficulties and AN symptom severity.
Tunç (2019)	A total of 621 university students, 331 (54.1%) female and 281 (45.9%)	Childhood Trauma Scale, Eating Attitude Scale,	To examine the predictive effect of childhood trauma and some demographic	Among the forms of childhood trauma, physical neglect was

	male, between the ages of 18-36	Demographic Information Form	characteristics on eating attitudes	found to have an effect on being overly interested in being thin and sexual abuse was found to have an effect on dieting attitudes.
Utzinger et al.(2016)	133 participants aged 18-55 years, diagnosed with bulimic and borderline personality disorder	Structured clinical interviews (DIB-R), Childhood Trauma Questionnaire (CTQ) with cases diagnosed with Borderline Personality Disorder	To empirically examine groups of individuals with naturally occurring bulimia nervosa (BN) based on histories of childhood trauma (CT) and compare these groups on a clinically relevant external validator, borderline personality disorder (BPD) psychopathology	The effects of both childhood sexual abuse and multiple trauma in childhood were found to be associated with bulimia nervosa and borderline personality psychopathology.
Wiederman (1998)	An average of 147 female participants between the ages of 18 and 49 who came to the family physician for routine gynecological care	Five forms were given to identify abuse.	Examining the relationship between sexual abuse and disordered eating among college student and women in my mental health samples	The prevalence of eating disorders was found to be significantly higher among women who reported having been sexually, physically or emotionally abused in childhood or who had personally witnessed violence.
Wonderlich et al.. (2001)	18 years and older, Group 1, women who had been sexually abused in childhood (N=26) Group 2, women who had been raped in adulthood n=21, Group 3, both childhood sexual abuse and rape victims n=25, Group 4, the control group consisted of women who had not been sexually abused in childhood and had not been victims of rape n=25.	Schema Identification Inventory (ASI), Body Image Avoidance Questionnaire (BIAQ), Impulsive Behaviors Scale (IBS), Eating Disorders Inventory (EDE) and structured clinical interviews for DSM-IV Axis I Disorders (SCID-I/P)	The relationship between sexual trauma and eating disorder behavior examining the effects of the victim's developmental stage and the effects of multiple sexual assaults	Individuals who experienced both sexual abuse in childhood and rape in adulthood were found to be more likely to show psychopathology associated with eating disorders, and victims or "childhood sexual abuse" were also found to be characterized by high levels of eating disorder behavior and multiple forms of impulsive self-harming behavior.

Discussion

This systematic review analyzes twenty-one research articles/theses published between 1990 and 2022. Three of these belong to the 1990s and eighteen to the 2000s. Eight of the reviewed studies are published locally in Turkey, and it is noteworthy that these studies were conducted in recent years. The other thirteen studies were published in international journals in English.

Today, there are ongoing debates on classifying ON as a disorder. ON is generally defined as a pathological obsession with consuming pure foods (Bratman 2017). In the study of Arusuoğlu et al. (2014) conducted to adapt the Orthorexia Nervosa Scale (Ortho-15) to Turkish, orthorexic symptoms were found to affect eating attitudes and were associated with obsessive-compulsive symptoms. However, other studies have emphasized that it may be related to OCD rather than the CT link suggested by that study. This discrepancy shows the significance and shortcomings of Arusoğlu et al.'s (2014) study. They concluded that an increase in OCD symptoms and an increase in BMI in individuals with disordered eating attitudes might increase orthorexic symptoms (Arusuoğlu et al. 2014). Another study reported a significant correlation between the scores of women with ON tendencies and OCD scores (Oğuz 2020). In a study conducted by Yılmaz (2020), whose sample consisted of participants diagnosed with OCD, no relationship was found between OCD and ON. However, in the same study, orthorexic tendencies increased as the deterioration in eating attitude increased in patients with OCD and people who regularly exercise. The deterioration in the eating attitudes of patients with OCD and healthy individuals engaged in sports in that study brings ON closer to the ED spectrum from a diagnostic point

of view. Therefore, there is a need for more studies investigating the ON tendencies in individuals diagnosed with OCD and those diagnosed with ED to determine in which disorder class ON should be included. In addition, it was thought that research with larger samples should be conducted to confirm this relationship.

Among the studies reviewed to evaluate the effect of CT on ON, Merdin (2018) detected a significant positive correlation between CT experiences and psychopathological symptoms. However, the effect of CT on the development of ON, which was not in the ED category, could not be established. Kaya (2019) also failed to find a significant correlation between CT and ED, but a significant negative correlation was noted between physical neglect and orthorexic tendency. It is vital for future studies to investigate the possible reasons for this outcome and to examine the effect of variables on each other. While two Turkish studies examined the relationship and the effect between the relationship and the effect of CT and ON, international research could not be identified at the time of writing this article. To have a definite idea on the subject, research on this subject should be more extensive. In this context, it is once again emphasized that more scientific research is needed to examine this effect and relationship.

Studies focusing on sexual abuse in childhood maltreatment have revealed that those who are exposed to sexual abuse develop more ED (James 1992, Utzinger et al. 2016) and have multiple impulsive behaviors (Wonderlich et al. 2001, Corstorphine et al. 2007). Tunç (2019) determined that sexual abuse and physical neglect were the most important predictors of eating attitudes among CT types. As exposure to sexual abuse and physical neglect increased, avoidance of weight gain foods, struggling to be thin, and deterioration in eating attitudes were observed. Such studies show the impact of sexual abuse on eating attitudes. Considering that Crawford et al. (2014) reported strong relationships between childhood abuse and ED in the development of substance use and impulsive behaviors, more research should be conducted to understand the interaction of abuse at an early age.

Among the types of CT, emotional abuse has been found to affect eating psychopathology as the most common form (Kent et al. 1997, Racine and Wildes 2015). Although there are findings that physical abuse and neglect also predict eating attitudes, their effects seem to be through their mutual relationship with emotional abuse.

Besides, adverse life events in childhood do not cause psychological disorders in everyone, and some protective factors and events increase the psychological resilience of the individual (Guillaime et al. 2016). In this context, although there are studies investigating how negative and protective factors interact with each other in the development of ED and why having a CT experience causes psychological distress in some people and not in others (Corstorphine et al. 2007, Burns et al. 2012, Crawford et al. 2014), more studies are warranted to reach more precise conclusions.

Finally, Guillaime et al. (2016) reported a relationship between the severity of ED and emotional, physical, and sexual abuse and comorbidity with one or more psychiatric disorders. Kong and Bernstein (2009) demonstrated mediating effects of depression on the relationship between some types of CT and eating psychopathology. In many studies investigating the relationship between ED, CT, and borderline personality disorder (BPD), the most common comorbid axis-I diagnosis according to DSM-IV in women with BPD was ED and PTSD (Johnson et al. 2002, Zanarini et al. 2004). Some reviewed studies support this finding (Grilo et al. 2002, Utzinger et al. 2016). Furthermore, a significant number of patients (approximately 25-30%) diagnosed with ED who exhibit impulsive behaviors have also received a comorbid diagnosis of BPD (Sansone and Sansone 2007). Therefore, there is a need to investigate the specific BPD factors that increase the likelihood of developing eating psychopathology.

The reviewed studies have shown the general role of trauma in developing psychopathology in adulthood (Carr et al. 2013). In addition, patients with ED who were found to have a CT history reported high rates of psychiatric comorbidity (David et al. 1993, Folsom et al. 1993, Wonderlich et al. 1995), and studies have shown that different types of abuse and neglect affect the development and maintenance of ED and other psychopathologic problems.

Conclusion

The reviewed studies have shown that emotional abuse is associated with AN (Racine and Wildes 2015). Different findings have been reported in the development of BN. While one study reported the role of emotional, physical, and sexual abuse altogether (Fosse and Holen 2006), Leonard et al. (2002) found that mainly physical and sexual abuse were related, whereas Utzinger et al. (2016) established a strong link with sexual abuse. While some studies suggested a relationship between BED and physical and emotional abuse (Belli et al. 2019), Kocakaya (2019) reported an indirect negative correlation between CT and eating attitudes. However, the relationship between CT and ON could not be determined with the studies examined. Therefore, it could be

concluded that CT may be both a direct and indirect factor in the development of eating psychopathology. However, the studies have not fully revealed its link with ON. In this direction, it is necessary to develop instruments measuring ON, a new concept, and to determine diagnostic criteria. In addition, methodological deficiencies in the studies in the systematic review are thought to have limited the results obtained.

In conclusion, childhood trauma exposure appears to be an essential risk factor for ED in adulthood. As seen in the studies analyzed, most studies evaluating the relationship between ED and CT are cross-sectional. Therefore, longitudinal studies should be prioritized more in the future. Longitudinal studies are crucial for obtaining more accurate evidence to explain the relationship between CT and ED and clarify the mediating factors that explain psychiatric comorbidities in the context of temporal relationships. The small sample size of the studies, the higher number of female participants compared to male participants, or the absence of male participants in some studies prevent us from generalizing our findings to the whole population. The fact that some data collection tools are based on self-report may impair the reliability of the results. Longitudinal studies should focus on explaining how childhood maltreatment affects the course of psychological disorders related to CT, which factors (e.g., emotion regulation, self-esteem, parental attitude, attachment styles) lead to the development of eating psychopathology under which circumstances (sociodemographic characteristics)? In addition, new methodological tools in the science of psychology should be utilized and re-evaluated, supported by findings obtained through techniques such as brain imaging. Clinicians should also evaluate individuals diagnosed with ED regarding CT and progress the psychotherapy service, formulation, and intervention/treatment programs in this direction.

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