

REVIEW

Open Access



A narrative review of childhood neglect and its association with eating disorders

Abdul Haseeb Ali¹ and David Turgoose^{2*}

*Correspondence:

David Turgoose

D.Turgoose@leeds.ac.uk

¹School of Medicine, University of Leeds, Leeds, UK

²Leeds Institute of Health Sciences, University of Leeds, Leeds, UK

Abstract

Childhood neglect's intricate relationship with eating disorders (EDs) is a topic of growing significance. This review consolidates findings from 16 studies of varying designs to investigate the relationship between neglect and ED development. This narrative review explored the differential impacts of neglect types on distinct types of EDs. A literature search was conducted on Anorexia Nervosa (AN), Bulimia Nervosa (BN) and Binge Eating Disorder (BED), in relation to physical neglect (PN) and emotional neglect (EN). Sixteen papers met inclusion criteria and were included in this narrative review. Bias and quality were assessed using the Quality Assurance Checklist. Findings suggested that AN was associated most frequently with PN, affecting women more profoundly. This relationship may stem from PN's role in early deprivation and malnourishment, commonly associated with AN. EN, on the other hand, was more frequently associated with BN. Studies suggested that EN contributes to the development of BN via processes that contribute to emotional dysregulation. Findings relating to BED were more complex, with both PN and EN influencing various cases. Some studies indicated that food addiction, primarily associated with PN, may result from neglectful parenting, leading to emotional eating. Conversely, EN emerged as a significant factor among clinically obese (according to BMI standards) BED patients, affecting their ability to manage emotions. Limitations amongst studies relating to BED included focusing on a subset of clinically obese/bariatric patients and poor tracking of subjects for longitudinal studies. Future research avenues should focus on causality, factors exacerbating these relationships, and the effectiveness of different therapeutic interventions. There is a need for comprehensive research, especially among natal males, to unveil the complex dynamics between childhood neglect and EDs. A clearer understanding of these relationships can empower stakeholders and clinicians to formulate effective prevention and intervention strategies, ultimately improving the well-being of individuals with EDs.

Plain language summary

This narrative review explores the complex relationship between childhood neglect and eating disorders (EDs) such as Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder. Examining various studies, we found that different forms of neglect—physical and emotional—play different roles in the development of specific EDs. For instance, anorexia nervosa is linked to physical neglect, possibly leading to early deprivation and malnourishment. Bulimia Nervosa, on the other



hand, is associated more often with emotional neglect, suggesting a role for emotional trauma in its development. Binge Eating Disorder presents a mixed picture, being associated with both physical and emotional neglect. The review has some limitations, including a gender bias in existing research and a focus on clinically obese populations. The findings underscore the need for further research, emphasising diverse populations and longitudinal studies to investigate the evolving associations between childhood neglect and EDs. The ultimate aim is to refine psychological interventions, bolster support systems, and enhance public awareness, contributing to the improved well-being of individuals affected by EDs.

Keywords Neglect, Anorexia, Bulimia, Binge, Eating-disorder, Review, Childhood

1 Background

The pervasive impact of eating disorders (EDs) on children's well-being underscores the imperative of understanding their complex aetiology. Rooted in interactions between biological, psychological, and environmental factors, one promising avenue of exploration centres around the examination of childhood neglect and its impact as a factor on ED development. This narrative review explored the findings of existing literature, aiming to shed light on the relationship between childhood neglect and EDs.

According to Attachment theory, early caregiving experiences play a pivotal role in shaping individuals' mental and emotional well-being, with enduring implications for their health throughout life [1, 2]. This provides a theoretical framework to explore how early relational experiences, particularly instances of neglect, may contribute to the emergence of EDs. In this research paper, data from 16 papers was reviewed. We found that whilst many studies explored EDs in relation to neglect, most did not address specific EDs and their relationship to emotional and physical neglect.

Despite a burgeoning body of research, the specific role of neglect in contrast to other forms of maltreatment in the development of EDs remains a focal point that demands a closer examination, prompting the formulation of this review's primary aims. By synthesizing findings from diverse studies, the review sought to find patterns and associations between different types of neglect—physical and emotional—and specific EDs, namely Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Binge Eating Disorder (BED).

Against the backdrop of rising ED prevalence globally, the review addressed the urgent need to comprehend the contributing factors. A critical assessment of the existing literature is needed, acknowledging both progress and limitations in current research. The discussion recognises the complexity of the relationship between childhood neglect and EDs, emphasising the need for a greater understanding that accounts for gender differences, comorbid childhood traumas, clinical obesity, and specific types of ED.

By scrutinising existing research and identifying gaps, this narrative review contributes valuable insights that can inform future research interventions, and public health initiatives. The goal is to foster a deeper understanding of how neglect, as a distinct form of early adversity, may influence the development and perpetuation of EDs, with a view to informing targeted interventions and support strategies that consider the diverse pathways through which neglect may contribute to AN, BN and BED.

2 Introduction

Attachment theory, rooted in the pioneering work of John Bowlby, has long been a fundamental concept in psychology [1]. It emphasises the profound influence of early parent-child relationships on adult behaviour and emotional well-being. Childhood neglect, characterized by a lack of emotional and physical care, represents an example of an attachment experience that can have far-reaching negative consequences. Childhood neglect represents a form of abuse that is likely to have a significant impact on a child's attachment relationships. Attachment-related issues can lead to distinct changes in adult behaviour and mental health outcomes [2, 3]. Differing forms of neglect are recognised as key variables affecting an individual's emotional and physical development.

Physical neglect (PN) and emotional neglect (EN) are the most common types of neglect. They have garnered significant attention within the context of attachment theory [1]. Globally, an estimated 223 million children have experienced neglect and for the UK specifically a study by the NSPCC revealed that one in five children in the UK has been exposed to EN in the form of domestic abuse [4, 5]. PN involves a failure to provide for a child's basic physical needs, such as food, clothing, and shelter, whereas EN pertains to the absence of emotional responsiveness and support from caregivers. Neglect can be differentiated from other types of abuse in childhood in by the absence of care; something which can include a lack of access to food. Food insecurity is a related concept whereby children do not have regular or reliable access to food and has been found to be associated with EDs in later life [6, 7]. For the purposes of this review, PN does not include specific neglect of medical and care needs. EN and PN (without accounting for medical care given to the child from the caregiver) are the two forms of neglect are recognised as crucial variables in the Childhood Trauma Questionnaire (CTQ), a widely used instrument in psychological research and is used in numerous studies in this review. Most studies using the CTQ will cover a single aspect of medical care as the CTQ is asks question takers if the caregiver allowed them to see the doctor if needed [8].

This review focuses specifically on the most prevalent EDs: AN, BN, and BED. According to the World Health Organisation (WHO), EDs affect people of all ages, with an estimated 9% of the population experiencing at least one type of ED in their lifetime, with women being more likely to be affected [9]. In the UK, 1.25 million people are estimated to suffer from an ED, mostly affecting young adults aged 16 to 24¹⁰. The EDs presented will have utilised the Diagnostic and Statistical Manual of Mental Disorders (DSM) criteria to establish the inclusion of research studies in our review [11].

These EDs, which usually manifest in adolescence or early adulthood, coincide with critical developmental milestones, where neglectful attachment experienced in early life can profoundly impact their onset and trajectory. While the effects of neglect and abandonment on emotional and cognitive development have been well-documented, their relationship with specific mental health issues, particularly EDs remain less well understood.

We undertook a narrative literature review to assess impact of neglect on the development of EDs. This comprehensive approach sought to provide a holistic view of how different types of neglect generally affect children through to adulthood. Distinct from neglect, abandonment refers to the abrupt withdrawal of emotional or physical support from caregivers and is a traumatic event [12]. This was not analysed. Additionally, PN that includes if the caregiver was able to attend to the medical needs of the child or was

able to administer, manage and treat an ill child was not analysed as there is insufficient information in the papers studied to conclude how this specific variable under PN could influence any findings.

The aim of this study was to conduct a narrative review of literature relating to neglect and EDs, specifically looking at different types of ED (AN, BN and BED) and their relationship with different types of neglect (PN and EN). The literature is summarised, delineating the characteristics of each study, and exploring the findings, emphasising patterns emerging in relation to neglect and EDs. The review hopes to advance our understanding of the multifaceted relationships between childhood neglect and the common EDs, AN, BN, and BED.

3 Method

Two databases were used for this review which were PsycINFO and Embase. PsycINFO was chosen due to its coverage of psychological literature and the fact that neglect falls into the developmental psychological discipline. Embase was selected as a medical, biomedical and pharmacological database to cover the ED physiology covered in medicine. Embase has an extensive database on biomedical and molecular science that is inclusive of PubMed articles with additional papers that could be of use to this review. The ‘clinical trial filter’ feature was used to remove case studies, which was one of the exclusion criteria. Two databases were selected due to the limits placed by the University of Leeds MBChB ESREP programmes statement limit.

Search terms are presented in Table 1. Concepts 1 and 2 covered different terms relating to neglect and types of eating disorder. There were no restrictions on age regarding the population (concept 3), except for the exclusion of geriatric populations (65+ years), as EDs emerge in younger populations and continue through younger adulthood [13]. To ensure that all papers were up to date, only papers published within the last 10 years (2013 onwards) were selected. All types of literature and studies were included. No papers were hand searched and none were extracted from existing reference lists. The searches for relevant literature were made between August and September 2023.

Table 1 Concept analysis search criteria table inputted within OVID™ database

Search concept	Keyword	Search terms	Strategy
Concept 1: Cause	Neglect	Neglect Neglecting Neglection Neglector	Neglect*
Concept 2: Outcome	Eating disorder	Eating disorder Binge eating disorder Anorexia nervosa Bulimia nervosa	Eating Or Binge Or Binging Or Anorexia Or Bulimia
Concept 3: Population	None	None	Set limits to: searches by age: Early childhood (age range 0–16) Adolescents (16–18) Adulthood (18–64) And must be human
Concept 4: Relevancy	None	None	Must be in English language and from last 10 years (2013 onwards)

All papers were searched by a single researcher and searches were amended and reviewed with the expertise of a professional psychologist/researcher. No other data sources were sought for finding additional studies and any data that was missing from the search and screening was completely excluded from the final compilation of all studies.

EndNote was used to stratify and group papers. Duplicates were removed. Both qualitative and quantitative data was included, and quality of papers was assessed using a Quality Assurance Checklist [14]. This was chosen for its methodological flexibility. Each study was compared against the criteria in the checklist and given an overall quality rating as a percentage. This tool did not set the basis for exclusion of papers, rather it influenced the direction in which paper would be referenced and discussed in the results and discussion summary. Statistical analysis tools were not used on any papers and no form of complex statistical analysis was carried out on the final 16 studies as this review is narrative in nature.

Regarding inclusion and exclusion criteria, articles had to pertain to neglect and EDs. Case studies were excluded. Articles in the eligibility subsection were screened through reading and all previous records were removed. Finally, all studies that measured EDs (AN, BN and BED) were included. Initial searchers found 1,276 papers which was reduced to 16 that were included in the final review following the screening and selection processes detailed in Fig. 1.

No ethical approval was required prior to commencement of this review as searches were conducted from existing publicly available databases. All materials for this review were only accessed through these databases. No use of pre-made templates, analytical data or metadata were used.

4 Results

4.1 Literature summary Table 2

4.2 Anorexia Nervosa (AN) in relation to neglect

AN to neglect associations differed across studies. Some studies showed that AN is associated with PN in women and not in men. Others showed that food neglect (a subset of PN) was found in both sexes [16, 18]. Interestingly, individuals with EN had higher markers of isolation and emptiness than individuals with major depressive disorder [19] with participants describing feelings of abandonment and suffering in childhood. Studies also found that AN was associated with maternal neglect, although it was not clear if this related to PN, EN, or both [18, 19]. PN was associated with all types of ED and symptoms increased in severity depending on presentation, including AN [22]. Whilst PN was found to relate to AN severity, other types of abuse were found to be much more strongly associated (e.g. sexual, physical and emotional abuse) [21]. Further research found emotional dysregulation in emotionally neglected individuals [25, 26]. Findings on PN showed that those with AN had reduced corpus callosum area and diminished hippocampal white matter indicating a physical manifestation of PN [25]. Some studies showed that PN was also related to AN, with the physical and neurological impact described in other studies offering a potential explanation, although these findings were only seen in female participants [24]. Based on the studies found in the review, it was not possible to determine how ED psychopathology develops over time [13].

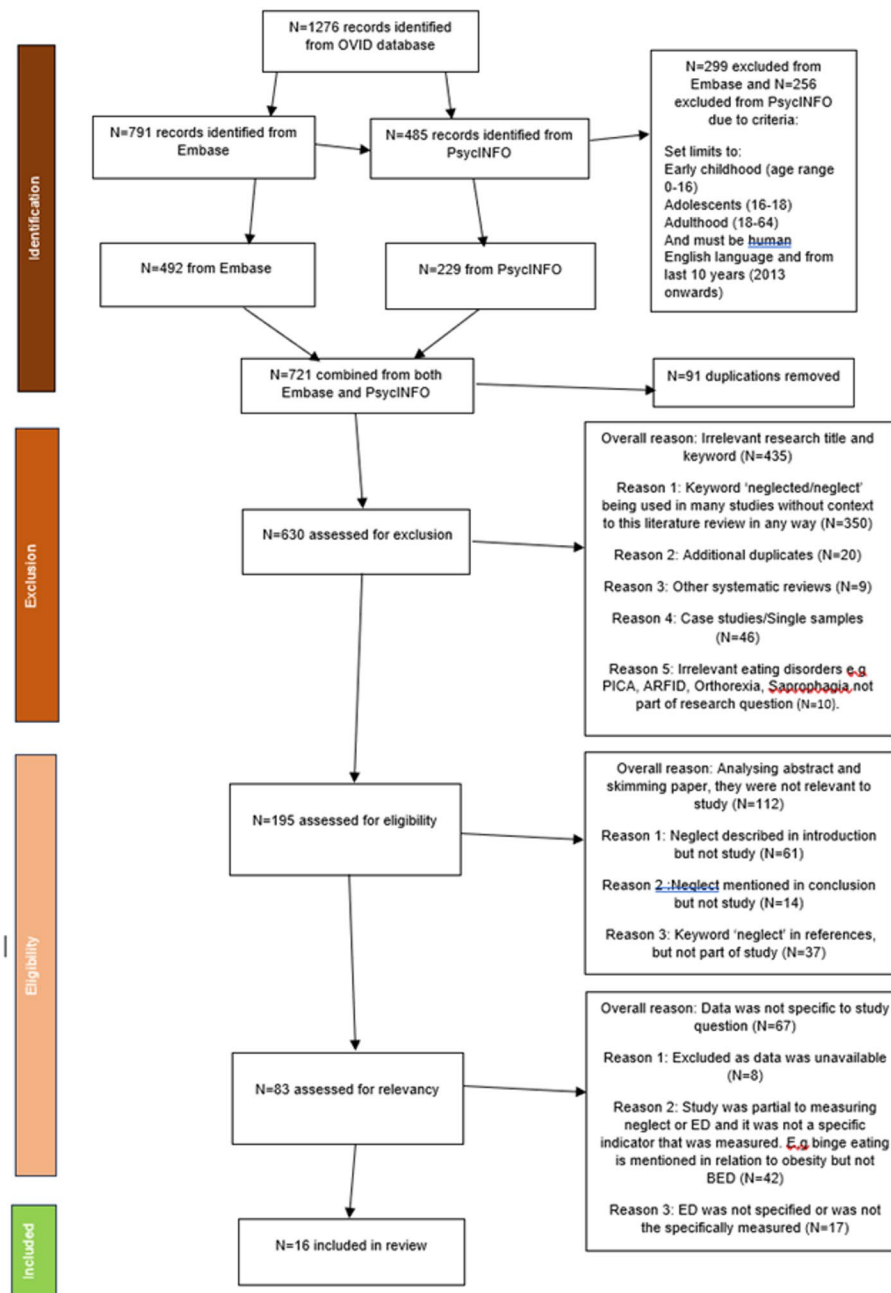


Fig. 1 PRISMA statement indicating inclusion and exclusion criteria

4.3 Bulimia Nervosa (BN) in relation to neglect

BN results varied between studies. Firstly, Afifi et al. found a strong link between participants with BN and EN in men specifically. In Italian studies, no link was found with BN and any other variables relating to neglect [15, 17, 18]. However, Austrian studies found an association between EN and BN, and this effect was increased when levels of emotional trauma were observed [21]. PN was also found to relate to food addiction and binge eating symptoms in some BN patients [21, 22]. Again, this was not as strongly correlated as those with BED and PN and the only sample tested were existing ED patients.

From studies conducted by Monteleone et al. it was found that depressed patients with BN had reduced corpus callosum areas and as significantly reduced left hippocampal

Table 2 Overall characteristics of study characteristics, findings and quality

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Afifi et al. [15]	Empirical Study; Longitudinal Study; Retrospective Study; Interview; Quantitative Study from national survey	Both	AN, BN and BED	36,309	18≤	USA	71	Whilst child maltreatment was associated with increased risk of ED, the effects varied in each group. PN increased the risk of AN for women and increased the risk of BED for men. There was an increased risk of BED for women when exposed to both types of neglect. BN in men was strongly positively correlated with EN more than any other group. AN was not associated with any type of neglect in men. Linear regression analysis found that PN had a robust relationship with EDs for men, but other types of abuse (sexual and emotional abuse) were more strongly associated with ED for women but not any type of neglect.
Amianto et al., 2018 [16]	Empirical Study; Quantitative Study	EN	BED	153 Clinically obese patients seeking treatment at regional centre of ED	30–55	Italy	72	Clinically obese patients seeking treatment for BED had a strong history of childhood emotional abuse. Statistical analysis revealed that emotional abuse and neglect may promote binge eating behaviour thus leading to BED.

Table 2 (continued)

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Coffino et al., 2020 [17]	Empirical Study; Quantitative Study and analysis from national survey	PN	AN, BN and BED	36,145	18≤	USA	68	Individuals with a specific type of PN (food neglect) were at an increased risk of AN and BED. No significant correlation was found with food neglect and BN.
Gander et al., 2018 [18]	Empirical Study; Quantitative Study	Both	AN and BN	126 patients	13-17.9	Austria	61	Compared patients with AN and BN and patients with major depressive disorder. Participants who experienced EN or PN showed different perceptions to isolation, danger, violence and death to those with major depressive disorder when they had AN. No link between neglect and BN was found when compared to the group with depression. Findings highlight that different treatments may be needed for different conditions (e.g. major depressive episode and BN) when patients are affected by neglect.

Table 2 (continued)

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Gruber et al., 2020 [19]	Controlled study Quantitative cross-sectional study	Unspecified	AN, BN and BED	52 female patients	16–26	Austria	55	This study measured the parenting style from mothers and fathers, including neglectful parenting styles. Neglect was associated with less self-acceptance but was not always accompanied by an ED. Paternal neglect was related to self-esteem in female participants which could be an indirect contributor to EDs. The paternal influence was greater than the mothers. Females who had EDs reported greater neglect and rejection from mothers than the healthy control.

Table 2 (continued)

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Guil-lame et al., 2016 [20]	Quan-titative scientific report	Both	AN, BN and BED	192 female patients	15≤	France	79	This study mea-sured experi-ences of trauma in childhood. No difference was found with other types of traumas (e.g. physical, emotional, sexual abuse) but there were differences in groups who were impacted by both types of neglect. Patients with BN had more trauma in general than AN and BED patients, but specifically re-ported more EN and abuse than AN patients. Also, severity of the ED was associated with a higher preva-lence and inten-sity of PN and EN, but neglect was still not as significant as other types of childhood trauma.
Bou Khalil et al., 2020 [21]	Quantita-tive study; Cross-sectional study	Both	AN, BN and BED	231 patients attending ED clinic	15–70	France	72	This study looked at how food addiction impacts the severity of EDs and specific types of child-hood trauma. EN had little impact on the severity of ED symptoms. However, PN was the largest single indirect cause of severity of food addiction for all types of ED.

Table 2 (continued)

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Latzer et al., 2020 [22]	Empirical Study; Quantitative Study	Both	BN and BED	426 patients of eating disorder institution	18–68	Israel	86	Participants with a specific subtype of night eating symptoms of BED had experienced significantly higher PN than those with BN and typical BED.
Mathieu et al., 2022 [23]	Empirical study; Mixed methods study	Both	BED	200 patients seeking bariatric surgery	18≤	France	36	BED was associated with The way other psychological factors and their interactions with patients who suffered more than one psychiatric comorbidity was ill-defined.
Monteleone et al., 2019 [24]	Brain Imaging; Empirical Study; Quantitative Study	Both	AN and BN	52 female patients from ED outpatient clinic	18≤	Italy	72	Participants who experienced PN had reduced corpus callosum areas from a MRI imaging. Those with depression who suffered from neglect also had significantly smaller left hippocampal white matter compared to non-depressed participants. This was found to affect their ability for motivated reward learning. This impact was found on both AN and BN patients similarly regardless of BMI.

Table 2 (continued)

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Monteleone et al., 2020 [25]	Quantitative study	Both	AN and BN	177 female patients of psychiatric department	18≤	Italy	68	Participants with BN and binge-purging symptoms reported a higher incidence of neglectful maternal style and affectionate constraint paternal style parenting. Parental bonding (strength of parental comfort to child) was negatively correlated with those patients who had both AN and BN. ED patients reported reduced warmth, bonding, maternal caresses and lack of intimacy. Neglect overall was a weaker factor than other types of abuse in the ED sample.
Monteleone et al., 2022 [26]	Quantitative study, Network Analysis	Both	BN and BED	325 patients of 2 separate psychiatric departments	18≤	Italy and Israel	64	This study investigated differences between patients with BN and BED. They found that overall EN scores were higher in BN sample than in BED sample. Other types of childhood maltreatment were far more significant in connection with differing psychopathologies than both types of neglect were.

Table 2 (continued)

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Palmisano et al., 2018 [27]	Empirical Study; Quantitative case control Study	EN	BED	78 Clinically obese and healthy patients from psychiatric adult outpatients	18<	Italy	57	This study investigated childhood maltreatment types between clinically obese and healthy patients and those with BED. They found that those with BED had a strong correlation to EN and this was stronger than those with clinical obesity and healthy controls. This could be explained by the lack parental control by neglect of these specific patients leading to BED behaviour and may disorganise the behaviour of the diencephalon in the brain.
Quilliot et al., 2019 [28]	Empirical Study; Quantitative Study	EN	BED	1484 bariatric surgery patients	18≤	France	61	EN was the highest reported adverse childhood event reported by both male and female participants with BED and clinical obesity. It was most highly reported for BED patients particularly clinically obese male patients who had BED.

Table 2 (continued)

Source name	Study type/design	Neglect type	ED type	Sample type/size (n)	Age range (yrs)	Site	Quality (%)	Findings
Smith et al., 2016 [29]	Empirical Study; Interview; Quantitative Study	Both	BN	204 female BN patients from ED clinics	18–65	USA	71	This study evaluated the mechanism behind suicide attempts of BN patients by childhood abuse type. They found no correlation in female BN patients and both types of neglect and suicide attempts. Other types of childhood maltreatment were far more significant in predicting suicide attempts for female BN patients than both types of neglect.
Talmon & Widom, 2022 [30]	Prospective longitudinal study; Quantitative study	Unspecified	AN and BN	807 patients with AN and BN	0–41	USA	39	No correlation was found between any childhood maltreatment type (including neglect) and adulthood development of AN or BN. Limitations were reported, including the use of self-report measures. The authors concluded that that a improving consistency of data collection would improve reliability.

ED=eating disorder, EN=emotional neglect and PN=physical neglect, AN=Anorexia nervosa, BN=Bulimia nervosa, BED=Binge eating disorder

white matter, as with patients with AN, although not as severe in intensity when appearing through MRI scanning [25]. Another follow up study cited that neglectful parenting usually on the maternal side and highly controlling paternal side led to an increased incidence of BN and this was a stronger association than observed in AN patients [26]. Another follow up carried out an extensive network analysis and found that neglect was a poor influencer of BN itself and other trauma types were strongly associated with BN

development in later life [27]. It is worth noting that though neuroimaging results were shown to demonstrate physical changes, it is not a clear causal factor in the development of EDs as both studies had little control of other factors such as malnutrition and stress that could have influenced ED development or the neuroimaging results [25, 27].

Furthermore, this finding was shared in a study that found that lifetime suicide attempts in BN patients was only weakly associated with neglect, with other types of abuse being stronger predictors [30]. A recent longitudinal study showed little to no relationship between neglect and BN with other adverse childhood events being stronger influencing factors [31].

4.4 Binge Eating Disorder (BED) in relation to neglect

BED was another extensively covered ED in the included studies. Firstly, in two American studies, PN was more strongly associated with BED than any other ED and food neglect as a type of PN was a specifically strong factor for BED [15, 17]. This pattern emerged in studies of weaker quality as well [24]. Some studies found that eating habits of BED patients differed in relation to the type of neglect experienced [22, 23]. BED patients reported a higher severity of food addiction and particularly night eating symptoms [23]. This was higher than for other EDs and related to PN experienced in childhood [22].

In contrast, some studies found that EN was a significant factor BED development, and there was no correlation between BED and depressive disorder in adulthood [16, 18]. Comparisons of BED to BN in terms of how EN impacts both has been studied and analysed via nodal data comparisons [27] showing that EN was a stronger risk factor for BN patients than BED [26]. Clinically obese patients were studied with EN in relation to BED specifically and focused on analysing relationships between BED and EN [28, 29]. In both studies, EN was significantly related to BED and a manifestation of specific symptoms relating to BED. It was suggested that a lack of parental comfort could contribute to the development of BED [28]. It was shown that BED is significantly related to EN, specifically poor social communication by both parents [29]. This finding had a higher odds ratio than any other variable in the study including clinical obesity [26].

5 Discussion

There are a number of theories and explanations of the findings in this review. Some studies showed that PN was significantly associated with AN. Some research has proposed that this relationship could be attributed to how PN might lead to early deprivation and malnourishment, which are factors commonly associated with AN [2, 31]. A lack of emotional support during childhood may contribute to feelings of abandonment, which individuals with AN often experience [31]. Studies have shown that these emotional factors can contribute to the development of AN [29, 31, 32]. We know that those with AN have a differing brain neuropathology than those without AN [23]. The brain changes seen may influence certain behaviours in individuals with AN as we know changing brain physiology can change behaviour in adults [33]. It is acknowledged here that these findings are associations only and that structural changes to the brain can be influenced by many biological and psychosocial factors.

Diseases such as dementia and mental disorders such as schizophrenia can change brain physiology in humans and animals [34, 35]. We know that there are significant

changes to body physiology in AN such as a change to the hypothalamic-pituitary axis including hypogonadotropic hypogonadism and other supplementary ion changes such as low potassium, glucose and thyroid hormone and an increase in growth hormone, cortisol and cholesterol. These physical manifestations can lead to a change in neurological function and thus have a long-term effect on the physical structure of the brain [26, 33, 34]. It could also be that neglect by adults leads to more instances of physical trauma, non-accidental injuries and manifestations of the stress response including dysregulation of the hypothalamic-pituitary-adrenal axis, and parasympathetic and catecholamine responses thus leading to a breakdown in neuronal tissue causing changes in AN patient behaviour [35, 36], although these issues are also likely to be raised in cases of other forms of abuse as well as neglect. This can result from poor communication seen in neglect and its relationship to AN leading to these brain changes [33, 34]. It could also be factors unrelated to brain changes that differ from what this review suggests such as malnutrition, environmental stress or genetics that could be the topic of future research.

This effect was seen in BN participants as well, but other studies by the same researchers showed EN to be a more significant factor in BN [24, 26]. Research indicates that BN patients have a stronger association with EN, which suggests that emotional trauma plays a role in the development of BN. EN can lead to emotional dysregulation, which may manifest in binge eating behaviours to make up for the isolation previously experienced by the individuals [37]. The overshadowing of neglect by other types of childhood abuse (e.g. physical or sexual abuse) in BN cases can be explained by the idea that EN, while significant, may be less directly related to the impulsive and compulsive behaviours seen in BN. Instead, other forms of childhood trauma may be relevant to these behaviours [27, 30]. Again, signalling that other abuse forms consequently from neglect such as physical trauma (seen in AN patients) may help to explain these findings [35]. Research remains to be done to untangle the specific role of neglect and delineating it from other forms of abuse in childhood.

The findings regarding BED present a mixed picture, with both PN and EN playing roles in different cases. Some suggest that the prevalence of food addiction in BED patients linked to PN might be due to the childhood experience of neglectful parenting, which may lead to emotional eating as a coping mechanism [38]. In contrast, EN's significance in BED development among clinically obese patients could be related to the idea that EN may affect the individual's capacity to manage emotions and lead to binge eating as a way of emotional regulation thus contributing to the development of clinical obesity [35]. No conclusive argument for BED with a specific neglect type can be made as many existing studies carry out work solely on clinically obese or bariatric candidates for surgery [24, 28, 29]. The studies exist to help surgical candidates manage their symptoms emotionally and improve therapies to improve post operative outcomes. Specific studies looking into BED and childhood neglect will be needed to make a more manageable conclusion extrapolating for other factors including clinical obesity itself. Studies exist regarding clinical obesity and EDs suggesting a bidirectional link that can explain how eating disorders are exacerbated by clinical obesity or how addressing clinical obesity can prevent the development of EDs [24, 39]. Yet, none of these studies target neglect as a specific factor to obesity and ED development.

Overall, these findings suggest that the relationship between childhood neglect and eating disorders is complex and may depend on various factors, including the type of

neglect, gender, and comorbid childhood traumas. Specific studies and brain imaging in the form of longitudinal studies will be needed as well as statistical analysis to extrapolate other causative effects. EDs generally being studied in only populations of women can cause problems in finding a balanced result for other genders [39]. Further improvements can be made to the results as future studies can become more inclusive of studying neglect as a specific factor to transgender and non-binary populations. It is important that this research is inclusive and future efforts are made to include non-binary and transgender participants in research involving EDs [40, 41]. In this review the lack of inclusivity limited the scope of the review as we do not know how neglect specifically affects individuals who may come under this population [40, 41]. Additionally, most findings for BN and BED patients being tested from a clinically obese/bariatric population will need to be excluded to analyse any other existing factors in contribution to ED and more specifically neglect. These explanations provide a nuanced understanding of how neglect may contribute to the development of EDs.

6 Limitations

A single researcher screened through two databases potentiating a selection bias and over representation of certain papers in the formulation and narrative thinking behind the studies. A limit of two databases increases the possibility of some relevant studies being missed from the review.

There is a significant gap in the research of EDs amongst transgender and non-binary populations. However, childhood trauma including neglect is known to influence the development of EDs in these populations [42]. Future research is needed to explore these relationships on gender, particularly as these populations have been found to have higher rates of childhood trauma such as emotional abuse and eating disorders [43, 44]. It is known that experiences of gendered discrimination and gender-based abuse are known to impact ED development in transgender and non-binary populations, which may be experienced beginning in early childhood and puberty [42, 45, 46]. Further, gender-based victimisation may also exacerbate symptoms of PTSD for this population which may influence the development of EDs [47].

Of the studies examined there were different designs, methodologies, and sample sizes making it difficult to establish the direction of causality. The quality of some studies included significantly impacted the validity of the findings. Some studies had methodological limitations, such as small sample sizes or self-reporting biases, which could affect the reliability of their results. More longitudinal studies would be appropriate for understanding the development of EDs over time. This variability in studies can introduce heterogeneity making it challenging to draw conclusions. The heterogeneity of the studies might limit the generalisability of the findings as the review focuses on associations and relationships between neglect and EDs but does not establish causality. The complex nature of these relationships might involve multiple contributing factors (e.g., parental alienation, other abuse types, genetics) that were unaccounted for.

Lastly, a focus on papers published within the last 10 years (2013 onwards) might have led us to overlook valuable research published before 2013 that could provide historical context or insights into the developmental pathology of EDs from neglect.

7 Conclusion

This review revealed an intricate relationship between childhood neglect and EDs revealing valuable insights and complex dynamics. To address the limitations of this review, it is essential to encourage extensive research into this subject such as longitudinal studies where participants of all genders are needed to understand how these associations evolve over time.

In this review, it is evident that the type of neglect, gender, and comorbid childhood traumas have roles in determining the connection between neglect and EDs. PN emerged as a significant factor, particularly among women suffering AN. It is proposed that this relationship may be due to how PN might lead to early deprivation and malnourishment, which are factors commonly associated with AN. EN is particularly significant in the context of BN, suggesting emotional trauma's role in BN development.

For BED, the picture is less clear, with both PN and EN playing roles in different cases. Some studies suggested that food addiction in BED patients linked to PN might be due to the childhood experience of neglectful parenting, while EN's significance in BED development among clinically obese patients could be related to the idea that EN impacts the capacity to manage emotions.

Understanding the role of neglect can empower patients to seek the correct intervention and support. Healthcare providers and therapists can tailor treatment plans with a heightened awareness of gender and age differences in EDs linked to neglect. Researchers can explore causal mechanisms and the interplay with other factors. While public health initiatives and policymakers can develop strategies that prevent EDs by developing more knowledgeable and supportive communities. Specific types of therapy that can effectively address neglect related EDs and how professionals can best utilise this knowledge can be explored. There are promising avenues for future research exploring the interplay between childhood trauma and mentalization of EDs, eventually performing meta-analyses to provide more comprehensive insights into this complex relationship.

This narrative review advances the understanding of the complex relationship between childhood neglect and EDs. By addressing the multifaceted factors contributing to EDs, we can take steps towards more effective prevention, intervention, and support to improve the well-being of individuals who may suffer from an ED.

Abbreviations

ED	Eating disorder
EN	Emotional neglect
PN	Physical neglect
AN	Anorexia nervosa
BN	Bulimia nervosa
BED	Binge eating disorder

Author contributions

Abdul Haseeb Ali- Contribution to design of the work, acquisition, analysis, interpretation of data and has approved the submitted version (and any substantially modified version that involves the author's contribution to the study). I am personally accountable for my own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which I was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature. David Turgoose: Provided support materials helping synthesize the literature review in form and reviewed and consulted on any edits that needed to be made for the final submission. Provided assistance and direction in regards to the reviews structure. Tutorship and support when review findings were to be presented to a panel.

Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 12 October 2024 / Accepted: 14 August 2025

Published online: 30 September 2025

References

1. Bowlby J. The Bowlby-Ainsworth attachment theory. *Behav Brain Sci.* 1979;2(4):637–8.
2. Meredith PJ, Strong J. Attachment and chronic illness. *Curr Opin Psychol.* 2019;25:132–8. <https://doi.org/10.1016/j.copsyc.2018.04.018>.
3. Crouch JL, Milner JS. Effects of child neglect on children. *Criminal Justice Behav.* 1993;20(1):49–65. <https://doi.org/10.1177/0093854893020001005>.
4. Rasheed T, Mukhlif M. The perception of child abuse and neglect by those who work with children. *J Al-Rafidain Univ Coll Sci.* 2022. <https://doi.org/10.55562/jruacs.v5i1i.534>.
5. Akehurst R. Child neglect identification: the health visitor's role. *Community Pract.* 2015;88(11):38–43.
6. Rasmussen G, Lydecker JA, Coffino JA, White MA, Grilo CM. Household food insecurity is associated with binge-eating disorder and obesity. *Int J Eat Disord.* 2019;52(1):28–35. <https://doi.org/10.1002/eat.22990>.
7. Lydecker JA, Grilo CM. Food insecurity and bulimia nervosa in the United States. *Int J Eat Disord.* 2019;52(6):735–9. <https://doi.org/10.1002/eat.23074>.
8. Bernstein DP, Ahluwalia T, Pogge D, Handelsman L. Validity of the childhood trauma questionnaire in an adolescent psychiatric population. *J Am Acad Child Adolesc Psychiatry.* 1997;36(3):340–8. <https://doi.org/10.1097/00004583-199703000-00012>.
9. Silén Y, Keski-Rahkonen A. Worldwide prevalence of DSM-5 eating disorders among young people. *Curr Opin Psychiatry.* 2022;35(6):362–71. <https://doi.org/10.1097/YCO.0000000000000818>.
10. BEAT. How many people have an eating disorder in the UK? Beating eating disorders UK. 2022.
11. American Psychological Association. Diagnostic and statistical manual of mental disorders: DSM-5TM. 5th ed. APA; 2013. pp. 19–55.
12. Marici M, Clipa O, Runcan R, Pirghie L. Is rejection, parental abandonment or neglect a trigger for higher perceived shame and guilt in adolescents? *InHealthcare* 2023. (Vol. 11, No. 12, p. 1724). MDPI. <https://doi.org/10.3390/healthcare11121724>.
13. Rohde P, Stice E, Marti CN. Development and predictive effects of eating disorder risk factors during adolescence: implications for prevention efforts. *Int J Eat Disord.* 2015;48(2):187–98. <https://doi.org/10.1002/eat.22270>.
14. Kmet L, Lee RC, Cook LS, Lorenzetti D, Godlovitch G, Einsiedel E. Systematic review of the social, ethical, and legal dimensions of genetic cancer risk assessment technologies. *Edmonton: AHFMR*; 2004.
15. Afifi TO, Sareen J, Fortier J, Taillieu T, Turner S, Cheung K, Henriksen CA. Child maltreatment and eating disorders among men and women in adulthood: results from a nationally representative United States sample. *Int J Eat Disord.* 2017;50(11):1281–96. <https://doi.org/10.1002/eat.22783>.
16. Amianto F, Spalatro AV, Rainis M, Andriulli C, Lavagnino L, Abbate-Daga G, Fassino S. Childhood emotional abuse and neglect in obese patients with and without binge eating disorder: personality and psychopathology correlates in adulthood. *Psychiatry Res.* 2018;269:692–9. <https://doi.org/10.1016/j.psychres.2018.08.089>.
17. Coffino JA, Grilo CM, Udo T. Childhood food neglect and adverse experiences associated with DSM-5 eating disorders in US National sample. *J Psychiatry Res.* 2020;127:75–9. <https://doi.org/10.1016/j.jpsychires.2020.05.011>.
18. Gander M, Sevecke K, Buchheim A. Disorder-specific attachment characteristics and experiences of childhood abuse and neglect in adolescents with anorexia nervosa and a major depressive episode. *Clin Psychol Psychother.* 2018;25(6):894–906. <https://doi.org/10.1002/cpp.2324>.
19. Gruber M, König D, Holzhäuser J, Castillo DM, Blüml V, Jahn R, Leser C, Werneck-Rohrer S, Werneck H. Parental feeding practices and the relationship with parents in female adolescents and young adults with eating disorders: A case control study. *PLoS ONE.* 2020;15(11):e0242518. <https://doi.org/10.1371/journal.pone.0242518>.
20. Guillaume S, Jausseant J, Maimoun L, Ryst A, Seneque M, Villain L, Hamroun D, Lefebvre P, Renard E, Courtet P. Associations between adverse childhood experiences and clinical characteristics of eating disorders. *Sci Rep.* 2016;6(1):35761. <https://doi.org/10.1038/srep35761>.
21. Bou Khalil R, Sleilaty G, Richa S, Seneque M, Iceta S, Rodgers R, Alacreu-Crespo A, Maimoun L, Lefebvre P, Renard E, Courtet P. The impact of retrospective childhood maltreatment on eating disorders as mediated by food addiction: A cross-sectional study. *Nutrients.* 2020;12(10):2969. <https://doi.org/10.3390/nu12102969>.
22. Latzer Y, Rozenstain-Hason M, Kabakov O, Givon M, Mizrahi S, Alon S, Tzischinsky O. Childhood maltreatment in patients with binge eating disorder with and without night eating syndrome vs. control. *Psychiatry Res.* 2020;293:113451. <https://doi.org/10.1016/j.psychres.2020.113451>.
23. Mathieu J, Brunaud L, Reibel N, Moukah D, Witkowski P, Lighezzolo-Alnot J, Quilliot D, Ziegler O. Low resilience in severe obesity: marker of adverse childhood experiences and current psychological disorders. *Eating and weight Disorders-Studies on anorexia. Bulimia Obes.* 2022;27(8):3507–19. <https://doi.org/10.1007/s40519-022-01488-2>.
24. Monteleone AM, Monteleone P, Esposito F, Prinster A, Ruzzi V, Canna A, Aiello M, Di Salle F, Maj M. The effects of childhood maltreatment on brain structure in adults with eating disorders. *World J Biol Psychiatry.* 2019. <https://doi.org/10.1080/15622975.2017.1395071>.

25. Monteleone AM, Ruzzi V, Patriciello G, Pellegrino F, Cascino G, Castellini G, Steardo L, Monteleone P, Maj M. Parental bonding, childhood maltreatment and eating disorder psychopathology: an investigation of their interactions. *Eating and weight Disorders-Studies on anorexia. Bulimia Obes.* 2020;25:577–89. <https://doi.org/10.1007/s40519-019-00649-0>.
26. Monteleone AM, Tzischinsky O, Cascino G, Alon S, Pellegrino F, Ruzzi V, Latzer Y. The connection between childhood maltreatment and eating disorder psychopathology: a network analysis study in people with bulimia nervosa and with binge eating disorder. *Eating and weight disorders-studies on anorexia, bulimia and obesity.* 2022. <https://doi.org/10.1007/s40519-021-01169-6>.
27. Palmisano GL, Innamorati M, Sarracino D, Bosco A, Pergola F, Scaltrito D, Giorgio B, Vanderlinden J. Trauma and dissociation in obese patients with and without binge eating disorder: A case–control study. *Cogent Psychol.* 2018;5(1):1470483. <https://doi.org/10.1080/23311908.2018.1470483>.
28. Quilliot D, Brunaud L, Mathieu J, Quenot C, Sirveaux MA, Kahn JP, Ziegler O, Witkowski P. Links between traumatic experiences in childhood or early adulthood and lifetime binge eating disorder. *Psychiatry Res.* 2019;276:134–41. <https://doi.org/10.1016/j.psychres.2019.05.008>.
29. Smith CE, Pisetsky EM, Wonderlich SA, Crosby RD, Mitchell JE, Joiner TE, Bardone-Cone A, Le Grange D, Klein MH, Crow SJ, Peterson CB. Is childhood trauma associated with lifetime suicide attempts in women with bulimia nervosa? *Eating and weight disorders-studies on anorexia. Bulimia Obes.* 2016;21:199–204. <https://doi.org/10.1007/s40519-015-0226-8>.
30. Talmon A, Widom CS. Childhood maltreatment and eating disorders: a prospective investigation. *Child Maltreat.* 2022;27(1):88–99. <https://doi.org/10.1177/1077559520988786>.
31. Rai T, Mainali P, Raza A, Rashid J, Rutkofsky I. Exploring the link between emotional child abuse and anorexia nervosa: a psychopathological correlation. *Cureus.* 2019;11(8):e5318.
32. Grogan K, MacGarry D, Bramham J, Scriven M, Maher C, Fitzgerald A. Family-related non-abuse adverse life experiences occurring for adults diagnosed with eating disorders: a systematic review. *J Eat Disorders.* 2020;8:1–20. <https://doi.org/10.1186/s40337-020-00311-6>.
33. Kolb B, Gibb R. Brain plasticity and behaviour in the developing brain. *J Can Acad Child Adolesc Psychiatry.* 2011;20(4):265. PMID: PMC3222570.
34. Buwalda B, Kole MH, Veenema AH, Huininga M, de Boer SF, Korte SM, Koolhaas JM. Long-term effects of social stress on brain and behavior: a focus on hippocampal functioning. *Neurosci Biobehavioral Reviews.* 2005;29(1):83–97. <https://doi.org/10.1016/j.neubiorev.2004.05.005>.
35. Glaser D. Child abuse and neglect and the brain—a review. *J Child Psychol Psychiatry Allied Disciplines.* 2000;41(1):97–116. <https://doi.org/10.1017/S0021963099004990>.
36. Xiong Y, Hong H, Liu C, Zhang YQ. Social isolation and the brain: effects and mechanisms. *Mol Psychiatry.* 2023;28(1):191–201. <https://doi.org/10.1038/s41380-022-01835-w>.
37. Levine MP. Loneliness and eating disorders. *J Psychol.* 2012;146(1–2):243–57. <https://doi.org/10.1080/00223980.2011.606435>.
38. Mason TB, Heron KE, Braitman AL, Lewis RJ. A daily diary study of perceived social isolation, dietary restraint, and negative affect in binge eating. *Appetite.* 2016;97:94–100. <https://doi.org/10.1016/j.appet.2015.11.027>.
39. Striegel-Moore RH, Rosselli F, Perrin N, DeBar L, Wilson GT, May A, Kraemer HC. Gender difference in the prevalence of eating disorder symptoms. *Int J Eat Disord.* 2009;42(5):471–4. <https://doi.org/10.1002/eat.20625>.
40. Geilhufe B, Tripp O, Silverstein S, Birchfield L, Raimondo M. Gender-affirmative eating disorder care: clinical considerations for transgender and gender expansive children and youth. *Pediatr Ann.* 2021;50(9):e371–8. <https://doi.org/10.3928/19382359-20210820-01>.
41. Silverstein S, Hellner M, Menzel J. Development of a gender-affirming care protocol in eating disorder treatment settings. *Eat Disorders* 2024. <https://doi.org/10.1080/10640266.2024.2371250>.
42. Rasmussen SM, Dalgaard MK, Roloff M, Pinholt M, Skrubbeltrang C, Clausen L, Kjaersdam Tell us G. Eating disorder symptomatology among transgender individuals: a systematic review and meta-analysis. *J Eat Disorders.* 2023;11(1):84. <https://doi.org/10.1186/s40337-023-00806-y>.
43. Elwyn R, Williams M, Smith E, Smith S. Two identical twin pairs discordant for longstanding anorexia nervosa and OSFED: lived experience accounts of eating disorder and recovery processes. *J Eat Disorders.* 2024;12(1):127. <https://doi.org/10.1186/s40337-024-01078-w>.
44. Matthews K. A systematic review of eating disorder experiences within transgender, non-binary and gender diverse populations, and an empirical study of childhood trauma, emotions, and the eating disorder voice (Doctoral dissertation, Cardiff University). 2024.
45. Gordon AR, Moore LB, Guss C. Eating disorders among transgender and gender non-binary people. *Eating disorders in boys and men.* 2021:265–81. https://doi.org/10.1007/978-3-030-67127-3_18.
46. Thoma BC, Rezeppa TL, Choukas-Bradley S, Salk RH, Marshal MP. Disparities in childhood abuse between transgender and cisgender adolescents. *Pediatrics.* 2021. <https://doi.org/10.1542/peds.2020-016907>.
47. Barr SM, Snyder KE, Adelson JL, Budge SL. Posttraumatic stress in the trans community: the roles of anti-transgender bias, non-affirmation, and internalized transphobia. *Psychol Sex Orientat Gend Divers.* 2022;9(4):410. <https://doi.org/10.1037/sgd0000500>.

Publisher's note

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