REVIEW ARTICLE

# The relationship between childhood maltreatment and cluster B personality disorders: a systematic review

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## ABSTRACT

Childhood maltreatment (CM) is known as a significant risk factor in the development of cluster B personality disorder (PD), which can lead to significant distress and functional impairment. This systematic review aimed to evaluate the relationship between childhood maltreatment and cluster B PDs. We obtained studies from Google Scholar, PubMed Central, SpringerLink, EBSCOHost, and ScienceDirect from 2015 to July 2024 using the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) 2020 as the guideline. The Medical Subject Headings (MeSH) terms of "childhood maltreatment," "personality disorders," "cluster B personality," "borderline," "antisocial," "histrionic," and "narcissistic" were used for conducting a systematic search. The included studies concentrated on individuals with cluster B PDs who had experienced maltreatment as children (CM). The risk of bias was assessed using the New Ottawa Scale. The PROSPERO registration number for this systematic review is CRD42024607386, which included 18 studies that were conducted in various countries. The studies included 11 cross-sectional, 1 case-control, 3 cohort, and 3 longitudinal designs, with sample sizes ranging from 78 to 36,309 participants. The results showed a strong association between CM and cluster B PDs development. Abuse and neglect experiences were correlated with an increased risk of developing PDs such as narcissistic, borderline, antisocial, and histrionic types. In this systematic review, CM was strongly associated with the development of Cluster B PDs.

**Keywords:**
childhood maltreatment, personality disorder, systematic review

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# INTRODUCTION

Childhood maltreatment (CM) is abuse and neglect experienced by individuals aged under 18 years of age. It includes all forms of physical and emotional ill-treatment, neglect, negligence, and commercial or sexual exploitation, which can potentially cause harm to children.[1] CM is a dual-risk factor that significantly contributes to personality disorders (PDs) and mental disorders.[2] Based on characterization, PDs have persistent and distinctive patterns of inner experiences and behaviors that significantly diverge from cultural expectations. These disorders usually occur during adolescence or early adulthood, persist throughout time, and cause significant distress or functional impairment.[3]

PDs are categorized into 3 clusters, namely A, B, and C.[4] Cluster B is the most common in clinical settings, which includes antisocial, borderline, histrionic, and narcissistic PDs. Individuals with Cluster B often show impulsivity, emotional instability, and difficulties in maintaining stable relationships.[5] Worldwide, the prevalence of Cluster B PDs among individuals with mental disorders is approximately 23%, with variability from 9.8% to 66%. [4] This cluster is given particular attention due to the intensity of symptoms, such as suicidal behavior, substance misuse, and other axis I conditions.[6]

The development of PDs is driven by a combination of genetic predisposition and environmental influences, including CM, which plays a significant role.[7] According to data from the World Health Organization (WHO), approximately 300 million children aged 2-4 years experience regular physical or psychological abuse. Additionally, 1 in 5 women and 1 in 13 men report a childhood sexual abuse history.[1]

Previous studies have identified that early traumatic experiences, particularly childhood abuse and neglect, are strongly related to the development of PDs, which is predominantly observed in cluster B.[7] Specifically, antisocial PDs are connected to various adversities, borderline personality disorders to severe abuse and neglect, histrionic PDs to abuse and bullying, and narcissistic PDs to family dysfunction, including parental criminality, neglect, and lack of affection.[8]

Based on the description above, this systematic review aimed to assess the relationship between CM and Cluster B PDs. The review included a range of studies to analyze how childhood traumatic experiences contributed to the development of Cluster B PDs. The results were expected to provide information for developing targeted interventions and preventive measures in society to reduce the long-term impacts of childhood trauma.

# METHODS

The Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) 2020 statement served as the foundation for this evidence-based study. With the Population, Exposure, Comparator, and Outcomes (PECOs) framework (Table 1), subjects of different ages with CM experience were compared to those without CM. This was followed by an assessment to determine whether there was an increasing risk of developing Cluster B PDs in the future. A literature search was conducted using electronic databases such as Google Scholar, PubMed Central, SpringerLink, EBSCOHost, and ScienceDirect. The search process incorporated Medical Subject Headings (MeSH) terms, including "childhood maltreatment", "personality disorders", "cluster B personality", "borderline", "antisocial", "histrionic", and "narcissistic". Subsequently, studies obtained were screened using titles and abstracts. A manual evaluation of the references for each qualified study was also conducted. In order to be included in this

systematic review, 2 requirements should be fulfilled, namely (1) observational as well as experimental studies examining the relation between CM and Cluster B PDs, and (2) studies with subjects who experienced CM. Exclusion criteria were reviews, letters, editorial comments, conference abstracts, studies published more than 10 years ago to provide the latest updates, non-English publications, as well as previous systematic reviews and meta-analyses. All the search strategies utilized are attached in Figure 1.

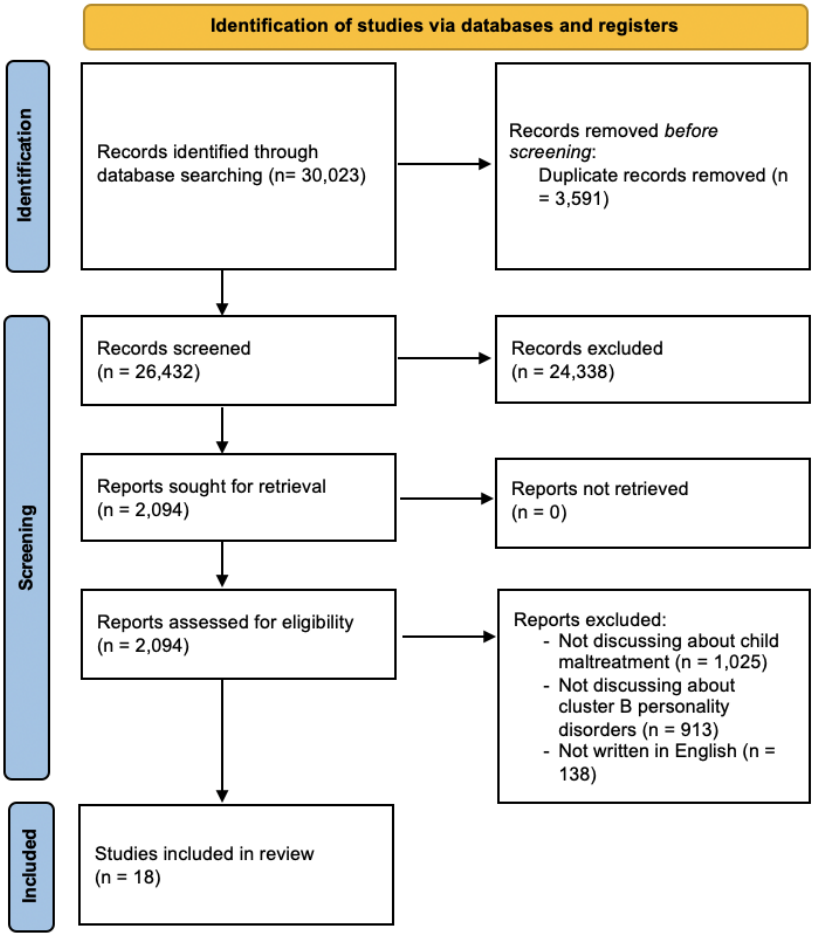


**Figure 1.** PRISMA study flow diagram

**Table 1.** PECOs framework

| | |
|---|---|
| Patients | Adults with Cluster B personality disorder who had history of experiencing any form of childhood maltreatment |
| Exposure | Experiencing any form of childhood maltreatment |
| Comparator | Adults with Cluster B personality disorder who had no history of experiencing any form of childhood maltreatment |
| Outcomes | Have Cluster B personality disorder, including antisocial, borderline, histrionic and narcissistic types |

All authors reviewed the complete texts of potentially eligible studies to ensure the texts fulfilled the inclusion criteria after the first screening of the titles and abstracts.

From the validated studies, each author completed data extraction independently and compiled the results into Mendeley and Excel spreadsheets. Any discrepancies were resolved through discussions among the authors to reach a consensus. Following an analysis of the included studies, several data points were extracted. These included the first author, the study design, the location, the year of publication, the population size, the conclusion on the relationship between CM and Cluster B PDs with the following odds ratio (OR) or risk ratio (RR), 95% confidence interval, beta, or P-value to fully report and explain each study, ascertaining whether the association was considered significant.

The Newcastle-Ottawa Scale was used to evaluate the listed studies' risk of bias.[10] Domains for each study were examined to determine quality level using Agency for Health Research and Quality (AHRQ) guidelines.[11] Three independent authors also evaluated each article and discrepancies were resolved through discussions among the review team to reach a consensus. However, meta-analysis cannot be carried out due to the diversity of data in each study, various forms of CM, several subjects, and also the limited amount of existing literature explaining the entire Cluster B PDs. This was because the majority of studies still focused on cluster B PDs, not as a whole. Moreover, this systematic review was registered in PROSPERO with registration number CRD42024607386.

## RESULTS

A total of 30,023 studies were found through database searches and 3,591 were removed as duplicate records. Furthermore, 26,432 studies were screened, 2,094 full-text articles were reviewed and only 18 studies were included in this systematic review.[12-29]

Studies included were conducted in the USA, Germany, Canada, Barbados, the Netherlands, Israel, Australia, Lebanon, and China between 2015 and 2022. These studies comprised 11 cross-sectional, 1 case-control, 3 cohort, and 3 longitudinal studies and were performed with a varying number of samples from 78 to 36,309 participants. Types of CM in the studies were abuse and neglect, including physical, emotional, and sexual. Some studies also included other types of CM such as negative family functioning, exposure to intimate partner violence, and low maternal support. All 4 types of Cluster B PDs were discussed in the included studies.

Cluster B PDs were associated with CM,[14,24-25,27] which increased the risk of developing the disorders by approximately 4 times.[24] Emotional maltreatment was associated with BPDs and 2 studies showed potential to predict future occurrences.[26,28-29] Physical and sexual abuse were also associated with BPDs.[21,23] A study stated that sexual abuse was the most associated CM with Cluster B PDs, causing more severe features.[13,19] Another study also found that CM was associated with narcissistic PDs.[22] A 6.51 times higher risk of developing antisocial PDs was found in a study, while the effect size was higher among men than women.[18,20] This was slightly different from the type of CM discussed in other studies. A study found that physical and criminal trauma were also associated with the risk of developing antisocial PDs.[12] Overall, CM was associated with the odds of developing any Cluster B PDs,[15-17] with the characteristics shown in Table 2.

**Table 2.** Characteristics of studies included

| No | Author, Year | Country | Study Design | Sample Size | Type of Childhood Maltreatment | Type of Cluster B Personality Disorders | Result |
|---|---|---|---|---|---|---|---|
| 1 | Gobin RL, et al. 2015 [12] | USA | Cross-sectional | 88 | Physical, sexual, and criminal trauma | Antisocial | Physical and crime-related trauma were associated with antisocial personality disorders, but sexual trauma was not. Patients with a history of physical trauma were 5.04 (95% CI: 1.46-17.36) times more likely to be diagnosed with antisocial personality disorders than those without a history. Furthermore, patients with criminal-related trauma were 2.92 (95% CI: 1.09-7.85) times more likely to be diagnosed with antisocial personality disorders than those who had not. |
| 2 | Infurna MR, et al. 2015 [13] | Germany | Cross-sectional | 91 | Low maternal care, sexual abuse, negative family functioning | Borderline | Adolescent bipolar personality disorders and a history of childhood maltreatment are strongly associated. Combining the significant predictors from the multivariate regression of each domain into a common model ($p<0.001$), experiences of sexual abuse showed the highest odds ratio (OR = 13.84, 95% CI: 3.16-60.57, $p<0.001$), followed by critical general family functioning (OR = 8.90, 95% CI: 2.11-37.48, $p=0.003$), and low care from mother (OR = 7.56, 95% CI: 1.94-29.48, $p=0.004$). |
| 3 | Jopling EN, et al. 2016 [14] | Canada | Cohort | 66 | Sexual abuse, physical abuse, verbal abuse, neglect | Borderline | Patients with a history of childhood maltreatment had 4 times higher risk to develop personality disorders. History of sex abuse and borderline personality disorder are strongly associated. |
| 4 | Taillieu TL, et al. 2016 [15] | USA | Cross-sectional | 34,260 | Emotional neglect, emotional abuse, both emotional neglect and abuse | Antisocial | Childhood maltreatment, particularly emotionally abusive acts, is associated with increased odds of any lifetime diagnoses of Cluster B personality disorders (AOR-1 1.6 for emotional neglect only; AOR-1 3.8 for emotional abuse only; AOR-1 5.5 for both emotional neglect and emotional abuse). |
| 5 | Turner S, et al. 2017 [16] | USA | Cross-sectional | 14,564 | Any childhood maltreatment without sexual abuse, sexual abuse only, any childhood maltreatment with sexual abuse | Antisocial, borderline, histrionic, narcissistic | Childhood maltreatment is associated with increased odds of any Cluster B personality disorders among males (AOR 2.14 for any childhood maltreatment without sexual abuse; AOR 3.67 for sexual abuse only; AOR 5.12 |

| No | Author, Year | Country | Study Design | Sample Size | Type of Childhood Maltreatment | Type of Cluster B Personality Disorders | Result |
|---|---|---|---|---|---|---|---|
| | | | | | | | for any childhood maltreatment with sexual abuse). |
| 6 | Hock RS, et al. 2018 [17] | Barbados | Cohort | 139 | Physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect | Antisocial, narcissistic | Exposure to childhood maltreatment is associated with higher personality pathology, including Cluster B personality disorders. |
| 7 | Affifi TO, et al. 2019 [18] | USA | Cross-sectional | 36,309 | Physical punishment, physical abuse, sexual abuse, emotional abuse, emotional neglect, physical neglect, exposure to intimate partner violence | Antisocial | Childhood maltreatment was associated with antisocial personality disorder with higher effect size among men than women. |
| 8 | Turniansky, et al. 2019 [19] | Israel | Case-control | 78 | Sexual abuse | Borderline | Adolescent female bipolar personality disorders inpatients with a history of prolonged childhood sexual abuse present more severe clinical characteristics and poorer course of disorders compared to those without a prolonged childhood sexual abuse history. Prolonged childhood sexual abuse group had OR 5.54 (95% CI 1.19–26) to have ≥2 suicide attempts, OR 10.4 (95% CI 1.1–96) for severe self-injury, OR 4.39 (95% CI 1.66–11.61) for alcohol use, and OR 7.58 (95% CI 2.56–22.43) for sexual impulsivity. |
| 9 | Danese A, et al. 2020 [20] | USA | Cohort | 1,196 | Physical abuse, sexual abuse, neglect | Antisocial | Many children with a history of childhood maltreatment are at high risk of developing any psychopathology regardless of their sex, race, and family social class. Risk ratio of childhood maltreatment and lifetime antisocial personality disorder is 6.51 (95% CI: 3.35-12.63) times higher. |
| 10 | Geselowitz B, et al. 2020 [21] | USA | Longitudinal | 170 | Sexual abuse, low maternal support | Borderline | Adolescents with a lifetime history of sexual abuse had significantly higher bipolar personality disorder symptoms (M=69.43,SD=11.574) than adolescents who had not experienced sexual abuse (M=55.01, SD=13.055; t=3.987, p<0.001) |
| 11 | Schie, et al. 2020 [22] | Australia | Cross-sectional | 328 | Abuse, neglect | Narcissistic | Childhood maltreatment is a risk factor for narcissistic personality disorder. |
| 12 | Diiorio C, et al. 2021 [23] | USA | Longitudinal | 1,630 | Physical/sexual abuse | Borderline | Childhood physical/sexual abuse was associated with borderline pathology ($p=10^{-4}<x<10^{-11}$). |

| No | Author, Year | Country | Study Design | Sample Size | Type of Childhood Maltreatment | Type of Cluster B Personality Disorders | Result |
|---|---|---|---|---|---|---|---|
| 13 | Krause-Utz A, et al. 2021 [24] | Netherland | Cross sectional | 703 | Physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect | Borderline | Childhood maltreatment had a significant positive predictive effect ($t(702) = 10.32$, $p < .0001$, $B = 0.371$, $SE = 0.036$, $\beta = .368$) on bipolar personality disorder features. |
| 14 | Xie GD, et al. 2021 [25] | China | Cross-sectional | 4,034 | Emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect | Borderline | Bipolar personality disorders features were positively correlated with the 3 types of childhood abuse ($p<0.001$). |
| 15 | Kanj G, et al. 2022 [26] | Lebanon | Cross-sectional | 411 | Emotional abuse | Borderline | Childhood emotional abuse was associated with borderline personality disorder ($p<0.001$). |
| 16 | O'Grady SM, et al. 2022 [27] | USA | Longitudinal | 228 | Abuse, neglect | Borderline | Cumulative history of childhood maltreatment predicts later bipolar personality disorders features. |
| 17 | Schulze A, et al. 2022 [28] | Netherland | Cross-sectional | 1,683 | Emotional abuse, physical abuse, sexual abuse, neglect | Borderline | Emotional abuse had the highest strength among childhood maltreatment types to borderline personality disorder. The association of other types of childhood maltreatment and borderline personality disorders is indirect. |
| 18 | Wu Y, et al. 2022 [29] | China | Cross-sectional (RCT) | 3,075 | Emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect | Borderline | Emotional maltreatment (abuse and neglect) was the strongest predictor of bipolar personality disorder. |

**Table 3.** Risk of bias of included cross sectional, cohort, longitudinal, and case-control studies.

| Cross Sectional Studies | Selection | | | | Comparability | Outcomes | | Total (Max 10) | Assessment (AHRQ standards) |
|---|---|---|---|---|---|---|---|---|---|
| | Representative of the sample | Sample size | Non respondents | Ascertainment of the exposure | | Assessment of outcomes | Statistical test | | |
| Gobin RL, et al. 2015 | * | - | * | * | * | * | * | 7 | Good |
| Infurna MR, et al. 2015 | * | * | * | * | ** | ** | * | 9 | Very good |
| Taillieu TL, et al. 2016 | * | * | * | * | ** | ** | * | 9 | Very good |
| Turner S, et al. 2017 | * | * | * | * | ** | ** | * | 9 | Very good |
| Affifi TO, et al. 2019 | * | * | * | * | ** | ** | * | 9 | Very good |
| Schie, et al. 2020 | * | * | * | * | ** | ** | * | 9 | Very good |
| Krause-Utz A, et al. 2021 | * | * | * | * | ** | ** | * | 9 | Very good |
| Xie GD, et al. 2021 | * | * | * | * | ** | ** | * | 9 | Very good |
| Kanj G, et al. 2022 | * | * | * | * | ** | ** | * | 9 | Very good |
| Schulze A, et al. 2022 | * | * | * | * | ** | ** | * | 9 | Very good |
| Wu Y, et.al, 2022 | * | * | * | * | * | * | * | 7 | Good |

| Cohort Studies and Longitudinal Studies | Selection | | | | Comparability | Outcomes | | | Total (Max 9) | Assessment (AHRQ standards) |
|---|---|---|---|---|---|---|---|---|---|---|
| | Representative of exposed cohort | Selection of non exposed cohort | Ascertainment of exposure | Outcome not present at the start of the study | | Assessment of outcomes | Length of follow up | Adequacy of follow up | | |
| Jopling EN, et al. 2016 | * | * | * | - | * | * | * | * | 7 | Good |
| Hock RS, et al. 2018 | * | * | * | * | * | * | * | * | 8 | Good |
| Danese A, et al. 2020 | * | * | * | * | * | * | * | * | 8 | Good |
| Geselowitz B, et al. 2020 | * | * | * | * | * | * | * | * | 8 | Good |
| Diiorio C, et al. 2021 | * | * | * | * | * | * | * | * | 8 | Good |
| O'Grady SM, et al. 2022 | * | * | * | - | * | * | * | * | 7 | Good |
| Case Control Studies | Selection | | | | Comparability | Exposure | | | Total (Max 9) | Assessment (AHRQ standards) |
| | Adequacy of case definition | Representative of the cases | Controls selection | Controls definition | | Assessment of outcomes | Method for cases and controls | Non response rate | | |
| Turniansky, et.al. 2019 | * | * | - | * | ** | * | * | * | 8 | Good |
| Geselowitz B, et al. 2020 | * | * | * | * | * | * | * | * | 8 | Good |

Risk of bias was assessed based on Newcastle-Ottawa Scale and Agency for Health Care Research and Quality (AHRQ) guidelines for defining the research quality.

# DISCUSSION

This systematic review found that CM was associated with Cluster B PDs. The risk of developing Cluster B PDs was increasing among individuals with a history of having CM victims. Several studies have suggested that amongst PDs, Cluster B was most strongly associated with childhood abuse perpetration.[30] CM could impede the development of self-compassion, increasing the risk of anxiety, depression, and potentially contributing to the onset of PDs later in life.[31] Another study reported that CM, including emotional, physical, and sexual abuse, as well as neglect could interfere with emotional and social development.[28] An included study also stated that prolonged CM will cause more severe symptoms of PD.

CM was linked to Cluster B PDs in 30% to 90% of cases, a significantly higher association compared to other PDs.[32] This was due to emotional dysregulation that was caused by CM. Elevated sensitivity to negative emotions, such as shame, guilt, and anger, was identified consistently among Cluster B PD individuals with a history of experiencing CM. Cluster B PDs are defined by emotional instability, identity disturbance, self-harming impulsivity, and relationship difficulties, commonly manifesting in adolescence or early adulthood.[28] From 5 meta-analyses, 6 significant childhood risk factors that met class II evidence criteria were identified, namely emotional abuse, emotional neglect, various childhood adversities, physical abuse, sexual abuse, and physical neglect.[35] Other various social and familial factors contribute to Cluster B PDs, including low socioeconomic status, maternal psychopathology, childhood abuse, and neglect.[36]

Among several studies, Cluster B PDs were found in 1.4% of individuals aged 16-year-old and 3.2% of those aged 22-year-old in the general population. In the mental health setting, it was present in approximately 50% of inpatients and 11% of young psychiatric outpatients.[37-39] Cluster B PDs do not appear out of nowhere in adulthood, like all other PDs. Prodromal signs and symptoms might be observed at a younger age, particularly in children, whose emotional expressions are not tolerated.[38] As a result, children struggle to recognize, regulate, and manage their emotions, alternating between extreme emotional swings and suppression.[32] Individuals with Cluster B PDs also struggle with severe psychosocial issues, including unstable romantic and social relationships. The emotional instability and impulsivity make it difficult to maintain consistent performance and stable professional relationships. Consequently, their quality of life is significantly reduced and psychological distress is increased.

The pathophysiology of Cluster B PDs includes multiple systems. Previous studies showed that Cluster B PDs patients were characterized by "increased stress vulnerability, disturbed hypothalamic-pituitary-adrenal (HPA) axis functioning and alterations in the size and activation of structures included in central stress regulation".[41] Neuroimaging studies have shown that individuals with Cluster B PDs experienced low volumes in the hippocampus, amygdala, and medial temporal lobes, which were key regions for stress and emotional regulation.[42] Genetic studies also showed correlations between HPA axis gene variants, such as FK506 binding protein 5 (FKBP5) and corticotropin-releasing hormone receptor (CRHR), which were associated with neurotransmitter dysregulation.[43]

Available studies to be included in this systematic review were not specific enough in classifying the type of Cluster B PDs. Most of the data were on Cluster B PDs, while the other types were available in very small numbers. Therefore, the data were less descriptive for other types of Cluster B PDs. The calculation methods for increased risk in the available studies vary

widely, limiting the measurement of overall increased risk. Further studies were also suggested to analyze contributing factors that could affect the relation between CM and Cluster B PDs, such as demographics.

Of the 11 cross-sectional studies included in this review, 9 studies had very good quality with a point of 9 out of 10. However, studies by Gobin *et al* and Wu *et al* were rated as having only good quality due to the lack of a described sampling strategy and not describing any additional factors related.[12,29] All cohort and longitudinal studies earned 8 points for their quality assessment which was classified as good. A total of 2 studies showed the outcome at the start. Based on the analysis, all studies lacked a description of the sampling strategy and did not describe any additional factors related.[14,27] Good quality was also obtained by 2 case-control studies that were included. The study by Turniansky *et al.* did not clearly outline the criteria for selecting participants, leading to insufficient detail in the selection process,[19] as shown in Table 3.

This is the most recent systematic review that comprehensively examines the association between CM and Cluster B PDs, serving as a theoretical foundation for future studies. The results reinforce the notion that early-life adversity is a critical factor in the development of Cluster B PDs, supporting existing theoretical frameworks and clinical observations. This review underscores the need for preventive and early intervention strategies because CM is causing life impairment. Furthermore, existing gaps in the literature are filled by offering a more updated, systematic, and extensive analysis of the existing data.

In conclusion, CM was a significant risk factor closely associated with the onset of Cluster B PDs across all subtypes. Cluster B PDs were the most frequently documented in the existing literature. The correlation between childhood trauma and cluster B PDs underscores the need for systematic assessment of such trauma during both diagnostic and therapeutic processes.[35] This review is expected to support the implementation of multidisciplinary primary prevention strategies to address risks associated with CM.

## RECOMMENDATIONS

The results of this systematic review could become the basis for taking steps. Victims of CM should receive mentoring for prevention because of their susceptibility to increased risk for developing PDs. Furthermore, active case findings should be performed intensely because not all cases were officially registered. Studies about the association between CM and specific types of cluster B PDs remain limited, showing the need for further studies. CM case-control studies should be implemented to pursue better public mental health in the future.

## AUTHOR CONTRIBUTION

Conception : JC, MO, SYU
Data collection/analysis : JC, MO, SYU
Drafting : JC, MO, SYU
Critical revision : JC, MO, SYU
All authors have read and approved the final manuscript.

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## CONFLICT OF INTEREST

No conflict of interest.

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