Brazilian Journal of Psychiatry. 2019;41:82–89
Brazilian Psychiatric Association
Revista Brasileira de Psiquiatria
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REVIEW ARTICLE

Revictimization as a high-risk factor for development of posttraumatic stress disorder: a systematic review of the literature

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Objective: Much research has been published on the role of sexual revictimization in the emergence of mental disorders in adulthood, but findings have sometimes been contradictory. The present systematic review sought to assess the state of the evidence on revictimization as a potential factor for the emergence of posttraumatic stress disorder (PTSD).
Methods: Electronic searches were conducted in five databases (MEDLINE/PubMed, Cochrane Library, Campbell Library, PsycINFO, and LILACS), using the terms PTSD, posttraumatic stress disorder, child abuse, and rape.
Results: We identified nine articles that established a connection among childhood sexual abuse (CSA), sexual revictimization in adulthood, and development of PTSD. Eight of the nine papers included were classified as having strong methodological quality (grade VI). One was classified as IV, with an average quality-of-evidence rating. The mean methodological quality score of the articles was 5.5, and the quality of evidence was deemed strong.
Conclusion: In the included studies, PTSD symptoms were most prevalent in the CSA + adult sexual assault groups, providing further evidence for the revictimization hypothesis.

Keywords: Child psychiatry; sexual assault; post-traumatic stress disorder; adult development; violence/aggression

Introduction

Violence against women is widespread worldwide. Over 30% of girls have a history of abuse, and 13% of women will experience rape during their lifetime.[1] In the United States, 20 to 25% of female children suffer sexual abuse, and among 15 to 20% of college-aged women reported having experienced rape or attempted rape during childhood, adolescence, or adulthood. The estimated rates of sexual violence in adulthood in the general population are between 13 and 25%, making this an issue of significant public relevance.[2] The National Violence Against Women Survey (NVAWS) estimated that, in the U.S., 51.9% of women have been physically assaulted, with a lifetime prevalence of sexual violence of 17.6%.[3] In Brazil, according to official data, one woman is sexually assaulted every 12 seconds; in the city of São Paulo alone (the largest city in Brazil), 4,736 cases where reported in the first semester of 2016.[4]

Revictimization is the occurrence of sexual violence during adult life in individuals with a history of childhood sexual abuse (CSA).[5] Revictimization is not a rare occurrence. NVAWS data reported that many women suffer their first experience of violence during childhood; indeed, 40% reported physical abuse, and 9%, sexual abuse.[3] Women sexually abused during childhood are 2.5-4.0 times more likely to experience another sexual assault as adults than women without a history of abuse.[1]

In recent decades, several studies have stressed the importance of the association between CSA and increased vulnerability to the onset of psychiatric disorders in adulthood.[1,6] In fact, the risk of posttraumatic stress disorder (PTSD) among female victims of CSA may be up to five times higher than among non-abused women.[5] Another well-documented correlation is the high conditional risk for development of PTSD after sexual abuse in adulthood (adult sexual assault [ASA]). The prevalence of PTSD in sexually abused women is 40%, a much higher percentage than among victims of non-sexual traumas.[7-9]

Despite these bivariate correlations, the weight that cumulative traumatic sexual abuse (CSA + ASA) has on PTSD development has rarely been evaluated. The high risk of PTSD development after rape is a complex phenomenon.

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Submitted Aug 12 2017, accepted Feb 19 2018, Epub Oct 11 2018.

How to cite this article: Cividanes GC, Mello AF, Mello MF. Revictimization as a high-risk factor for development of posttraumatic stress disorder: a systematic review of the literature. Braz J Psychiatry. 2019;41:82-89. http://dx.doi.org/10.1590/1516-4446-2017-0013

In most cases, it is not caused by a single traumatic event, but by a series of traumas inflicted since an early age, especially in women.[10,11]

Some authors have proposed models for understanding the phenomenon of revictimization. One theory suggests that CSA results in a cognitive impairment in information processing, which causes changes in verbal memory and risk assessment, and those changes render these women more vulnerable to new episodes of sexual violence.[12] Childhood traumas have a significant effect on the psychological and social maturity of an individual, because they occur at a critical period of neuronal development, predisposing the traumatized subjects to the emergence of emotional disorders.[13] One review of the empirical literature, designed to provide a comprehensive overview of the revictimization phenomenon, suggested that severity of CSA contributes to enhancing the risk of revictimization, but the mechanisms through which the phenomenon occurs are not fully established.[14]

Many women who experience ASA are being revictimized after sexual violence in childhood.[10,11,15] However, the lack of studies focusing on the relationships among CSA, ASA, and PTSD creates a gap in the literature. To address this gap, we sought to compile data assessing revictimization of women as a potential risk factor for the emergence of PTSD and conduct a systematic review of the literature to assess whether there is evidence to support that CSA-ASA dyad increase the risk for PTSD, more than CSA or ASA alone. We hypothesized that women with a history of CSA who have suffered ASA have an increased risk of developing PTSD as compared to women with no history of CSA.

Methods

To obtain a high standard of replicable information, we adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines when constructing our systematic review protocol and checklist.[16]

Data sources

Five electronic databases were searched: MEDLINE (via PubMed), Cochrane Library, Campbell Library, PsycINFO, and LILACS. The searches were completed in December 2016, and the terms entered were PTSD, posttraumatic stress disorder, child abuse, sexual assault, and rape.

Once the predefined search strategy was complete, the first author (GCC) evaluated all abstracts or titles (when the abstract was not available). When a title or abstract described an eligible study, the full text was obtained and carefully evaluated for relevance to this review.

Furthermore, the reference lists of all articles selected for full-text reading were handsearched for possible relevant articles that were not included at first.

Inclusion/exclusion criteria

Figure 1 shows the article evaluation and selection process. Only articles that reported data on CSA, ASA, and PTSD assessment in adult women were included. The inclusion criteria used for article selection were: 1) design: longitudinal and cross-sectional; 2) population: women aged 18 and older; 3) examining victims of sexual violence in adulthood; 4) with symptoms or diagnosis of PTSD according to DSM-III, DSM-III-R, DSM-IV, DSM-IV-TR, or DSM-5; 5) investigated or controlled for the presence of CSA in childhood; 6) written in English.

The exclusion criteria were: 1) inclusion of males in the sample; 2) population aged $<$ 18 years (in cases with multiple population age groups, data for the group aged $>$ 18 years had to be available for separate examination); 3) evaluation of undefined episodes of violence, i.e., not identifiable as physical, emotional, or sexual; 4) no evaluation of CSA; 5) no evaluation of sexual violence in adulthood; 6) no assessment of symptoms or diagnosis of PTSD; 7) book chapters; 8) assessed CSA as a risk factor for the development of other conditions, such as human immunodeficiency virus (HIV) infection, alcohol or drug dependency, self-destructive behavior, and not PTSD; 9) evaluated revictimization as a risk factor for unwanted pregnancies, sexual exploitation, or marital relationships, but did not assess mental disorders; 10) evaluated PTSD as a risk factor for victimization, but did not control for the emergence of PTSD symptoms after rape; 11) and did not specify the period during which violence occurred (childhood or adulthood).

After application of the aforementioned criteria, two independent reviewers (GCC and AFM) evaluated the selected papers. They compared their findings and, in case of disagreements, a third reviewer (MFM) rejected the article or approved it for inclusion. Nine articles were ultimately included for qualitative data analysis.

Article quality assessment

To conduct this review, quality criteria for the classification of selected articles were created using the following parameters: 1) design – longitudinal or cross-sectional studies were assigned a higher score, because they have a greater chance to demonstrate the hypothesis raised and greater reliability; 2) sample representativeness – studies in which the data could be generalized were assessed as best, whereas studies using clinical or convenience samples received lower scores in quality assessment; 3) sample size – articles with larger samples were assessed as better; 4) evaluation of symptoms and diagnosis of PTSD – studies using structured assessments, such as specific diagnostic scales, were evaluated as better than those using only screening tools or clinical assessment; 5) evaluation of CSA – studies using specific scales for assessment of CSA were assessed as better; 6) relationship between adult sexual assault the onset of PTSD – studies that somehow provided evidence of a time-course relationship between sexual abuse in adulthood the onset of PTSD symptoms or diagnosis were evaluated higher than those that evaluated only the lifetime prevalence of PTSD; 7) presence of PTSD at data collection time – studies in which participants had a PTSD diagnosis at the time of inclusion were evaluated more highly than those that only evaluated PTSD over a subject's lifetime.

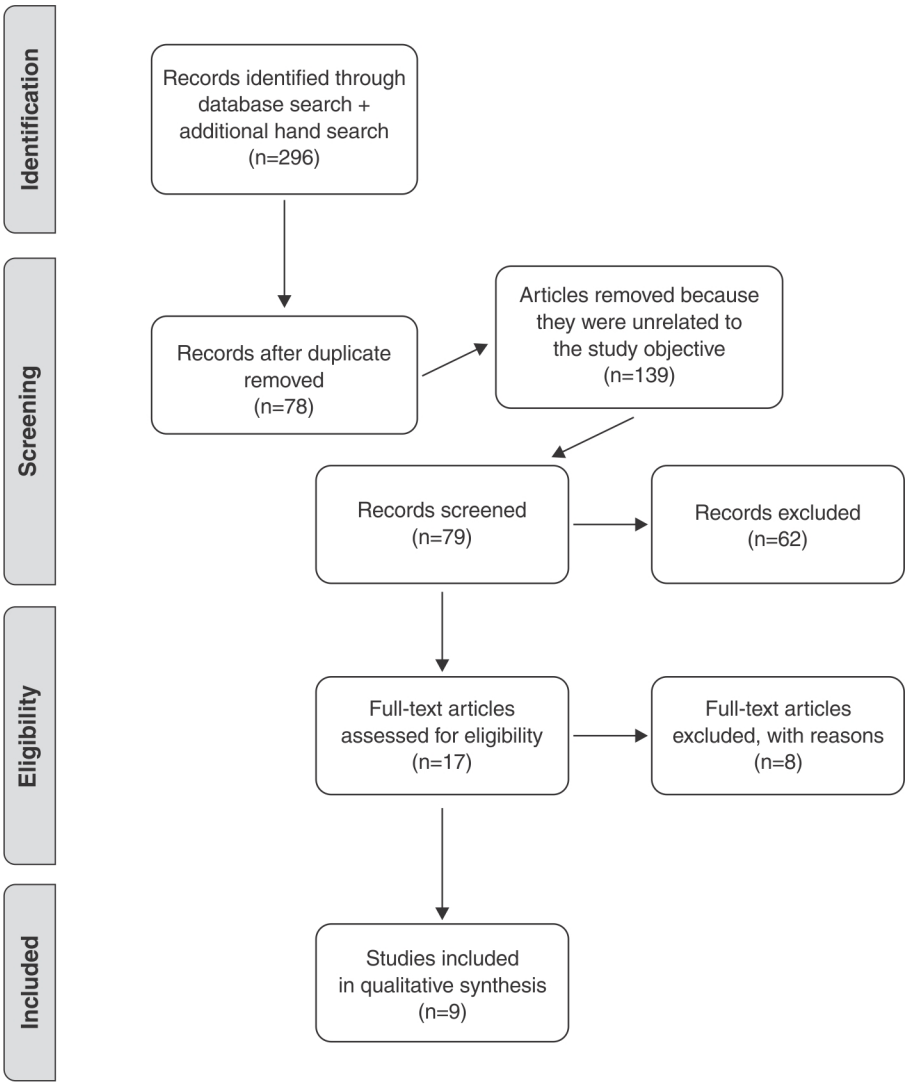


Figure 1 Flow diagram of article evaluation and selection.

Study quality was based on a score determined by the presence of the aforementioned quality criteria. Each item was assigned a score of 0 (= absent) to 1 (= present). The articles were then ranked from I to VII, according to the quantity of "present" scores received. Articles classified I or II were categorized as weak, those classified III or IV, as average; and those classified V or higher on the quality scale, as strong.

Ethical considerations

This study was approved by the Universidade Federal de São Paulo (UNIFESP) ethics committee (project 0625/2015).

Results

The initial electronic search and additional handsearch yielded 296 articles; 78 of these were excluded as duplicates. Additionally, 139 articles were excluded as they were unrelated to the objective of this study.

Seventy-nine articles were selected, recovered in full, and had their abstracts read. Methodology and results were examined by the first author (GCC) to determine whether they fulfilled the inclusion criteria for this review.

At this stage, 62 articles were excluded: 13 which assessed CSA and revictimization as a risk factor for self-destructive behaviors (HIV infection, alcohol and drug dependency, unwanted pregnancies, sexual exploitation, or violent marital relationships), but did not asses mental disorders; six which did not differentiate physical from sexual abuse in childhood; three which did not assess ASA; 17 which evaluated PTSD as a risk factor for victimization, but did not control for the emergence of PTSD symptoms after revictimization; three which used mixed-gender samples; 10 which evaluated the emergence of mental disorders after CSA, but did not evaluate ASA; three which evaluated lifetime sexual abuse as a risk factor for the onset of mental disorders, but did not specify whether the episodes of abuse occurred in childhood or adulthood; three which evaluated only ASA, not CSA; two which evaluated CSA as a risk factor for the

development of depression and anxiety, but not ASA or PTSD; three which focused solely on the epidemiology of CSA, and did not address ASA or mental disorders; one which evaluated the combination of CSA and ASA as a risk factor for development of physical ailments; and one which evaluated lifetime sexual abuse as a risk factor for suicide.

Seventeen studies were selected to be read in full and potentially included in the review. After full-text analysis of these 17 articles, eight were excluded: one which evaluated CSA + ASA as a risk factor for the development of dissociative disorders; two which evaluated post-PTSD symptoms as a risk factor for developing alcohol use disorder and alcoholism as a facilitating factor for rape; two which assessed PTSD as a mediational factor for victimization; two which did not differentiate CSA from other types of violence in childhood as a risk factor for ASA and subsequent development of PTSD; and one which evaluated either CSA or ASA as a risk factor for development of PTSD. Ultimately, nine studies were included in the qualitative analyses.

Only one of the included studies was longitudinal[17] – an observational study of the development of PTSD after rape. All others were cross-sectional, either extracting data from population-based surveys or convenience clinical samples. A summary of the included articles is presented in Table 1, and a summary of their main findings, in Table 2.

Arata[18] conducted a weighted risk analysis to assess the effect of repeated sexual victimization on the development of any mental disorder in 92 women, and concluded that PTSD development was increasingly related to the lifetime level of victimization.

Messman-Moore et al.[20] compared the emotional and behavioral consequences of adjustment in revictimized women. They evaluated 633 women between the ages of 17 and 49, and found that revictimized women had more PTSD symptoms than women who had not experienced sexual violence and those with CSA only.

Nishith et al.[21] studied 117 female victims of rape who had also experienced CSA. They found a significant correlation between CSA and subsequent physical and sexual victimization during adulthood; CSA was a high-magnitude predictor of subsequent traumatic events in adulthood. CSA alone was not an independent predictor of PTSD after a rape, but was related only indirectly to the emergence of PTSD, when associated with multiple types of trauma (not only sexually related).

Thompson et al.[22] evaluated the presence of psychopathology in 97 women with CSA and ASA. Diagnosis rates of PTSD were six to seven times higher in the victimized groups than in controls who did not have a history of abuse.

Schumm et al.[11] evaluated 777 women; among these, revictimized women were 17 times more likely to develop PTSD. Twenty-two percent of the women had a probable diagnosis of PTSD, and those who reported CSA + ASA showed a higher severity of PTSD symptoms than those who reported only CSA or ASA.

Filipas & Ullman[23] examined the psychological sequelae of CSA and the factors that contributed to revictimization in 577 women. PTSD symptoms were significantly and positively correlated with all revictimized participants as compared with those reporting only CSA.

Kimerling et al.[5] evaluated the presence of victimization in adulthood and PTSD symptoms in the previous 30 days in a community sample (n=11,056). CSA was a more potent risk factor for ASA than for adult non-sexual physical assault. Women exposed to any violence were much more likely to have experienced symptoms of PTSD in the previous 30 days; revictimization was a potent risk factor for PTSD.

Walsh et al.[2] estimated the prevalence of sexual victimization and PTSD in a national representative survey of 6,764 women in the U.S., pooled from the samples of other studies.[26,27] Revictimization significantly increased the odds ratio (OR) of developing PTSD in college students and adult housewives in the 6 months after ASA and over their lifetime, as compared to women with CSA only, ASA only, and non-victimized women.

Finally, the only longitudinal study included in our analysis[17] examined risk factors for the development of PTSD after trauma in 148 female victims of sexual violence. Only 4% of women had suffered CSA + ASA. The authors found a strong correlation between PTSD severity and exposure to revictimization.

Eight of the nine papers included were classified as having strong quality (grade VI). One was classified as IV with an average quality rating. The mean quality score of the articles was 5.5, and the evidence quality was deemed strong.

Although the reports differed significantly regarding use of psychometrics to assess CSA and ASA, as well as for clinical evaluation of PTSD, they all used scales with acceptable specificity and reliability, thereby lending some credibility to the data collected.

In general, the selected articles presented consistent data about the association between CSA and greater vulnerability to ASA, reinforcing the revictimization hypothesis. In addition, we found positive correlations between CSA or ASA and the presence of PTSD symptoms. As most studies divided their respective populations into only CSA, only ASA, CSA + ASA, and no history of trauma, we were able to identify which of these groups had a stronger association to the emergence of PTSD after an episode of ASA. In the various studies included, the most commonly observed frequency of PTSD symptoms was in the CSA + ASA groups.

Discussion

Our systematic review identified only nine articles that established a connection between the three traumatic events we intended to assess, making it clear that further advances in this area are needed. Despite that, the results confirmed our hypothesis that there is a cumulative risk of PTSD development after sexual revictimization. Revictimized women have higher odds of developing PTSD symptoms than women who have not experienced CSA.

Most of the studies did not have a prospective design; therefore, we cannot conclude that there is a causal

Table 1 Characteristics of studies included in qualitative analysis

Reference	Design and sample	Age (years)	Study quality	Evidence quality	Assessment scales
Arata[18]	Cross-sectional (n=92)	19-48	VI	Strong	PTSD = SCID-NP for DSM-III-R suppl. PTSD ASA = SES CSA = self-report measure based on Finkelhor's measure of childhood victimization[19]
Messman-Moore[20]	Cross-sectional (n=648)	17-49	IV	Average	PTSD = SCL-90-R ASA = LEQ CSA = MSES
Nishith[21]	Cross-sectional (n=117)	18-51	VI	Strong	PTSD = PSS-SR ASA = HVQ CSA = HVQ: Sexual and Physical Abuse
Thompson[22]	Cross-sectional (n=97)	20-55	VI	Strong	PTSD = SCID-I/P for DSM-IV; PSS-SR ASA = no scales, only definition: forced penetration upon the participant without their consent when they were 18 years of age or older CSA = no scales, only definition: intrafamilial and extrafamilial sexual activity that was either unwanted or that involved family member 5 or more years older than the participant
Schumm[11]	Cross-sectional (n=777)	> 20	VI	Strong	PTSD = PSS-SR ASA = four items from the NWS questionnaire CSA = CTQ
Filipas & Ullman[23]	Cross-sectional (n=577)	17-21	VI	Strong	PTSD = Post-Traumatic Stress Diagnostic Scale[24] ASA = SES CSA = CSA questionnaire from Banyard et al.,[25] adapted from Finkelhor[19]
Kimerling[5]	Cross-sectional (n=11,056)	> 18	VI	Strong	PTSD = PC-PTSD Screen ASA = TSS CSA = TSS
Walsh[2]	Cross-sectional College students (n=1,991) Adults (n=3,001)	18-86	VI	Strong	PTSD module from the NSA and NWS ASA questionnaire from the NSA and NWS CSA questionnaire from the NSA and NWS
Elklit[17]	Longitudinal (n=136)	18-71	VI	Strong	PTSD = HTQ-Part IV for DSM-IV-TR ASA = no scales; victims were interviewed about the episode of sexual violence with specific questions that allowed dichotomous yes/no answers CSA = no scales; 12 situations of violence presented to participants, who then had to indicate which they had experienced

95%CI = 95% confidence interval; ASA = adult sexual assault; CSA = child sexual abuse; CTQ = Childhood Trauma Questionnaire; HTQ = Harvard Trauma Questionnaire; HVQ = History of Victimization Questionnaire Subscales; LEQ = Life Experiences Questionnaire; MSES = Modified Sexual Experiences Survey; NSA = National Survey of Adolescents; NWS = National Woman's Study; OR = odds ratio; PC-PTSD Screen = Primary Care-PTSD-Screen; PSS-SR = PTSD symptom scale self-report; PTSD = post-traumatic stress disorder; SCID-I/P = Structured Clinical Interview for DSM-IV-TR Axis: patient edition; SCID-NP = Structured Clinical Interview for DSM-III-R: non-patient edition; SCL-90-R = Symptom Checklist-90-Revised; SES = Sexual Experiences Survey; TSS = Traumatic Stress Schedule.

relationship among the events of the triad (CSA-ASA-PTSD). Additionally, studies using clinical or convenience sampling do not provide generalizable estimates of the prevalence of revictimization, or of the risk factors crucial for the development of psychopathology.

The main limitation of this review was the lack of longitudinal studies and standardized methodological approaches to asses CSA and ASA concomitantly. Besides, the diagnosis of PTSD was assessed in some articles, but in others, only PTSD symptomatology was described. The instruments used to collect data were heterogeneous, and sometimes only self-report scales were used. The risk of bias in memory recall for collecting retrospective data on abuse is an important consideration, although this is usually a caveat in all studies that use instruments to collect data on childhood experiences in adults. Although some studies provided information about the cumulative effect of the triad of events of interest, the authors did not perform a meta-analysis, because of the limitations noted above. Unfortunately, our results are limited to a qualitative analysis of the data.

Some other limitations are also worth noting. MeSH terms and their synonyms might be deeply explored using Boolean operators, as well as expanded to languages other than English; here, we restricted our search to those terms cited in the Methods section. In addition, we did not rate the included studies in terms of risk of bias. Recently, as research in the area of validation of evidence assessment tools has become more prevalent, negative results with classical tools (such as the Cochrane Risk of Bias

Table 2 Main findings of the studies included in qualitative analysis

Reference	Comparison groups	Main findings
Arata[18]	CSA ASA CSA + ASA No sexual trauma history	25%, history of sexual victimization; 18%, victimization in childhood only; 28%, victimization in adulthood only; 26%, victimization in childhood and adulthood (revictimization). PTSD = 31% of revictimized women; 6% of those victimized only in adulthood; 12% of those victimized only in childhood; 13% of those never victimized. Lifetime PTSD relation to level of victimization: $\chi^2 = 13.76$ $p < 0.005$.
Messman-Moore[20]	CSA + ASA (revictimization) or physical abuse in adulthood Multiple victimizations (physical and sexual) in adulthood CSA onlyASA - sexual or physical No abuse experiences	CSA reported by 20.1% of the sample. Revictimized women reported more somatic complaints, depression, anxiety, interpersonal sensitivity, hostility, and PTSD than women not victimized or with a history of abuse in adulthood only. There was no difference between the group of revictimized women (CSA + ASA) and the group with multiple victimizations in adulthood. PTSD symptoms related to revictimization: mean = 0.93 (standard error = 0.08), $p < 0.0001$.
Nishith[21]	CSA only Childhood physical assault ASA only Adulthood physical and sexual assault CSA + adulthood physical and sexual assault	Sexual abuse in childhood was associated with high rates of subsequent physical and sexual victimization in adulthood. Child sexual abuse, but not physical abuse in childhood, predicted high impact and high magnitude of subsequent traumatic events in adulthood. Sexual abuse alone was not an independent predictor of PTSD onset after rape, but it was related only indirectly to the emergence of PTSD when associated with revictimization in adulthood.
Thompson[22]	CSA only Adulthood rape only CSA + adulthood rape No history of sexual trauma	The three groups that experienced abuse had higher rates of PTSD, which did not differ between them. Group participants with trauma were 2.7-3 times more likely to have symptoms of avoidance when compared to the control group. Re-experienced symptoms were significantly higher in CSA only and CSA + rape groups than in the control group. PTSD diagnosis in the control group = 12%; CSA only group = 84.6%; rape only group = 76.2%; and CSA + rape group = 83.3%. PTSD diagnosis 6-7 times greater in the three trauma groups ($R^2 = 0.34$).
Schumm[11]	CSA only ASA only CSA + ASA No history of sexual trauma	At least one episode of traumatic experience was reported by 70% of the sample. 22% of women met criteria for possible PTSD. CSA only = 47%; ASA (rape) only = 5%; no sexual trauma = 30%; both CSA + ASA (rape) = 18%. PTSD symptoms were more strongly related to CSA + ASA when compared to all other groups, OR 17.56 (95%CI 8.35-36.9).
Filipas & Ullman[23]	CSA only ASA only CSA + ASA No history of sexual trauma	CSA only = 16%; ASA only = 10%; CSA + ASA = 12%; no trauma = 61%. 42% of those who reported CSA also reported ASA, vs. 14% of non-CSA reporting ASA. Revictimized women had more PTSD symptoms when compared to the CSA alone group, $F(1,112) = 5.80$ ($p < 0.05$).
Kimerling[5]	Victimization (physical and sexual) in childhood only CSA only Victimization (physical and sexual) in adulthood only ASA only Victimization (physical and sexual) in childhood and adulthood CSA + ASA No victimization	Revictimization = 12.2% of women; either physical or sexual violence in childhood = 24.3%; either physical or sexual violence in adulthood = 22.9%. Prevalence of victimized women among those who suffered: CSA = 50.2%; ASA = 14.1%; CSA + ASA = 12.2%. CSA was a powerful risk factor for ASA (95%CI 3.7-5.1). Prevalence of PTSD: CSA and PTSD = adjusted OR 4.7 (95%CI 3.7-6.0); ASA and PTSD = 4.9 (95%CI 3.8-6.4); CSA + ASA and PTSD = adjusted OR 12.7 (95%CI 10.0-15.4).
Walsh[2]	College students Victimized only once Revictimized Housewives women Victimized only once Revictimized	College students: sexual victimization = 12.5%; single victimization = 6.3%; revictimization = 6.3%. 50% of those victimized were revictimized; 40% PTSD in the past 6 months and 58.4% PTSD in their lifetime. Adult women: victimized = 20%; single victimization = 8.2%; revictimization = 11.8%. 58.8% of those victimized were revictimized; 27.2% PTSD in the past 6 months and 58.8% PTSD in their lifetime. Revictimization × PTSD (lifetime): revictimized college students: 8.2 (OR); singly victimized college students: 2.8 (OR); revictimized housewives: 5.9 (OR); singly victimized housewives: 2.5 (OR).

Continued on next page

Table 2 (*continued*)

Reference	Comparison groups	Main findings
		Revictimization × PTSD (6 months): revictimized college students: 6.7 (OR); singly victimized college students: 2.8 (OR); revictimized housewives: 5.8 (OR); singly victimized housewives: 2.4 (OR).
Elklit[17]	Prior rape Prior CSA Prior rape + CSA Prior physical violence Other type of prior trauma	45% had core symptoms of PTSD; 25% had subclinical PTSD; 26% reported an episode of violence prior to rape. Out of these, 22% has experienced some sexual victimization prior to rape, and 69% had experienced non-sexual trauma. Non-sexual trauma and negative affectivity were related to PTSD severity (B = 0.33 and 0.34; $p < 0.001$).

95%CI = 95% confidence interval; ASA = adult sexual assault; CSA = child sexual abuse; CTQ = Childhood Trauma Questionnaire; HTQ = Harvard Trauma Questionnaire; HVQ = History of Victimization Questionnaire Subscales; LEQ = Life Experiences Questionnaire; MSES = Modified Sexual Experiences Survey; NSA = National Survey of Adolescents; NWS = National Woman's Study; OR = odds ratio; PC-PTSD Screen = Primary Care-PTSD-Screen; PSS-SR = PTSD symptom scale self-report; PTSD = post-traumatic stress disorder; SCID-I/P = Structured Clinical Interview for DSM-IV-TR Axis: patient edition; SCID-NP = Structured Clinical Interview for DSM-III-R: non-patient edition; SCL-90-R = Symptom Checklist-90-Revised; SES = Sexual Experiences Survey; TSS = Traumatic Stress Schedule.

Tool) have been described in the context of systematic reviews in the field of mental health. Rodrigues-Tartari et al.[28] and Okuda et al.[29]found that, for attention deficit hyperactivity disorder (ADHD) and autism, respectively, the Cochrane tool was not reliable, with an omega < 0.7.

Some studies evaluated the factors that mediated CSA and ASA.[12,14,17,21] Ullman et al.[12] hypothesized that, after CSA, some individuals could develop maladaptive coping mechanisms, negative cognitive modulation, and decreased emotional regulation. This disrupted psychological functioning would predispose the individual to ASA. In addition, some PTSD symptoms, such as those related to affective and cognitive dissociation and hypervigilance, were proposed as mediators of revictimization risk. In this way, victimization leads to PTSD, and PTSD leads to revictimization.[2]

Although it is strongly suggested that PTSD acts as a mediator in revictimization, the literature is contradictory in this regard, and the data obtained are not definitive.

Our hypothesis is that there is a progressive increase and interactive risk among the factors CSA-ASA-PTSD. Experiencing CSA would predispose survivors to a lower risk-assessment capacity and other high-risk behaviors that could lead to revictimization.[12] The underlying biological mechanisms potentially correlated with this triad remain unclear.

Intensive epigenetic studies in the last decade have increased our knowledge and provided evidence that the stress-response systems are involved in resilience and vulnerability to the development of mental disorders.[13] Work conducted by Meaney & Szyf[30] demonstrated the direct effect of epigenetic mechanisms during early brain development in determining increased sensitivity to stress. Epigenetic changes in early life alter brain functioning associated with cognitive and behavioral responses to stress, affecting individual vulnerability to stressful situations.

Caspi et al.[31] found that one overall underlying dimension, which they called factor P (general psychopathology), could summarize individual propensity to develop psychiatric disorders. The concept of factor P raised questions about the specificity of any etiological factor for discrete mental disorders. This poses an issue for addressing CSA (or any child maltreatment) as an exclusive risk factor for PTSD, as it is a risk factor for many other disorders. Nevertheless, it bears stressing that there should be some specificity of CSA leading to ASA, due to its impact on the subject's identity and sexual functioning. Furthermore, as we discussed above, ASA correlates with PTSD. CSA probably correlates with the proposed P factor, but also plays a particular role in the CSA-ASA-PTSD triad.

Given the high prevalence and impact of violence on the development of mental disorders, Hanson[32] proposed that traumatic and stressful experiences throughout life have a cumulative effect on individuals, hindering their ability to effectively deal with their problems, unlike people who experience few traumatic situations during the life course. Traumatic experiences of a more interpersonal nature, and sexual violence in particular, would have a stronger cumulative negative effect on coping capacity.[20]

The main impact of this review is that prevention is the key to reduce PTSD prevalence; first by trying to educate people about (and avoid) CSA, and second, when attending to sexually abused children, by proposing interventions that could ensure a protective environment with safe attachment and, ultimately, trying to develop a good sense of awareness to avoid dangerous situations that could lead to revictimization.

Besides educational campaigns to reduce violence against children and women, longitudinal prospective studies to test new approaches, considering these possibilities of intervention, are sorely needed.

Acknowledgements

The authors thank Hugo Cogo for his advice on methodological issues. MFM has received a grant from Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP; process 2014/12559-5).

Disclosure

The authors report no conflicts of interest.

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