# Evidence-Based Report

# Childhood Sexual Abuse and Anxiety Disorders

| Reviewer | Associate Professor Ian Lambie |
|---|---|
| Literature search | Ariana Krynen, Charlotte Best |
| Date Draft Report Completed | 27 October 2015 |
| Date Final Report Completed | 30 May 2016 |

**Important Note:**

- The purpose of this brief report is to summarise the evidence for the association between childhood sexual abuse and the development of anxiety disorders.

- It is not intended to replace clinical judgement, or be used as a clinical protocol.

- A reasonable attempt has been made to find and review papers relevant to the focus of this report; however, it does not claim to be exhaustive.

- This report is based upon information supplied up to October 2015.

# 1. Executive Summary

- Childhood sexual abuse can have significant short- and long-term effects, including the subsequent development of anxiety disorders.

- The purpose of this report is to provide an evidence-based guide on the association between childhood sexual abuse and anxiety disorders as a teenager/adult. These findings will be used to assist in the decision making process regarding cover and entitlements of those who have experienced childhood sexual abuse and later developed an anxiety disorder.

- A literature search was conducted in October 2015 using Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Cochrane Database of Systematic Reviews, PsycINFO, and the Worldwide Web. Further literature was also located through reading the reference list of review articles.

- Findings from the three systematic reviews and two meta-analyses identified in this report showed that:

  - Victims of childhood sexual abuse are more likely to develop anxiety disorders than are non-victims.

  - There is fair quality evidence that childhood sexual abuse is a likely risk factor for the development of anxiety disorders, with an odds ratio of between 1.5 and 7.5.

  - There is some evidence that severity of childhood sexual abuse (i.e., abuse with penetration) strengthens the association with anxiety in later life.

  - There is some evidence that experience of childhood sexual abuse is associated with a higher odds ratio of developing an anxiety disorder than childhood physical abuse, child abuse/neglect, community violence, and complex trauma.

  - Limitations of the current research examining the association between childhood sexual abuse and anxiety disorders include methodological limitations of studies included in reviews, childhood sexual abuse and outcomes being assessed using a variety of different methods, abuse being reported retrospectively, and the range of confounding variables present across studies.

- Mediators of the link between childhood sexual abuse and the development of anxiety disorders may include shame or self-blame, interpersonal difficulties, family conflict and over-control, as well as avoidant coping strategies. Additional mediators include the sense of loss of security and safety following the childhood sexual abuse, feelings of powerlessness, and negative cognitive appraisals about the self, world and others.

Research regarding the role of childhood sexual abuse on the development of anxiety disorders is not yet fully understood.

- Given the identified limitations of the current literature and that there are likely to be many causes of and risk factors for anxiety disorders, it is difficult to conclude whether childhood sexual abuse is a direct and sufficient cause of anxiety disorders. However, there is some good quality evidence that childhood sexual abuse is likely to be a risk factor for developing anxiety disorders later in life.

## 2. Introduction

Anxiety disorders are widely dispersed in the population, and collectively they are the most commonly experienced mental health disorder (Kessler et al., 2009). In the general population, estimated lifetime prevalence of any anxiety disorder are approximately 16%, with 12-month prevalence of around 11%; though it is noted there are wide variations between studies (Kessler et al., 2009). For example, the lifetime prevalence in the United States has been reported at 28.8% (Kessler et al., 2009) and 12-month prevalence at 18.1% (Kessler et al., 2005). Anxiety disorders can have marked impacts on occupational and social functioning, as well as an individual's quality of life (Olatunji, Cisler, & Tolin, 2007).

The estimated prevalence of childhood sexual abuse for females is between 8 to 31%, and between 3 to 17% for males; the wide estimate ranges reflecting the heterogeneity of studies (Barth, Bermetz, Heim, Trelle, & Tonia, 2013). Despite the methodological challenges inherent in conducting international systematic reviews and meta-analyses, most studies have consistently shown that worldwide more than 1 out of 5 women, and 1 out of 10 men experience childhood sexual abuse (Pereda, Guilera, Forns, & Gómez-Benito, 2009). However, underreporting of childhood sexual abuse is a well-documented phenomena and likely impacts these prevalence rates (Leclerc & Wortley, 2015).

For victims of childhood sexual abuse, the effects can be devastating both in the short- and long-term. Frequently reported short-term effects include fear, anxiety, depression, aggression, anger and hostility, and sexually inappropriate behaviour. Long-term effects include ongoing depression and anxiety, poor self-esteem, difficulty in trusting others, self-harm and suicide, a tendency toward revictimisation, feelings of isolation and stigma, substance abuse, and a host other mental health problems (Browne & Finkelhor, 1986; Fergusson, McLeod, & Horwood, 2013; Paolucci, Genuis, & Violato, 2001). One such group of mental health disorders which has been linked to childhood sexual abuse is anxiety disorders, which is the focus of this report.

## 3. Background

ACC Research subcontracted Associated Professor Ian Lambie to conduct an evidence-based review to investigate the association between childhood sexual abuse and the subsequent development of anxiety disorders as a teenager/adult.

This evidence-based report will be used to provide ACC clinical advisors, claims management staff and service providers with an evidence-based guide on the relationship between childhood sexual abuse and the development of anxiety disorders. In addition, this report will be used to assist in the development of an approach to deciding cover and entitlements for people who have experienced childhood sexual abuse and develop an anxiety disorder at an older age.

## 4. Investigation

A search was conducted in October 2015 in the following databases: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Cochrane Database of Systematic Reviews, and PsycINFO. Further literature was also located through searching the Worldwide Web and reading the reference list of review articles. The references of any review articles were also investigated, as was the Worldwide Web. Only articles in English and published between 2005 and 2015 were included.

Search terms used included: anxiety, anxiety disorders, childhood sexual abuse, child sexual abuse, sexual abuse.

Inclusion criteria: systematic reviews and meta-analyses looking at the relationship between childhood sexual abuse and anxiety disorders.

Exclusion criteria: non-English studies, animal or laboratory studies, narrative reviews, letters or editorials; study designs other than systematic review or meta-analysis.

This resulted in identifying 59 articles, of which three systematic reviews and two meta-analyses were used in this report.

Evidence tables were created for each systematic review and meta-analysis, and they can be found in Appendix 1. A table of the excluded studies can be found in Appendix 2.

**Note:** many articles included in this report were conducted prior to the publication of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). In the DSM-5, post-traumatic stress disorder (PTSD) was reclassified as a Trauma and Stressor-Related

Disorder[1] as opposed to an anxiety disorder as outlined in the DSM, Fourth Edition. Therefore, any interpretation of findings which include PTSD should be made with this in mind.

Any relevant papers were assessed for their methodological quality using the following SIGN[2] criteria:

| Levels of evidence (LOE) | |
|---|---|
| 1++ | High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias |
| 1+ | Well-conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias |
| 1- | Meta-analyses, systematic reviews, or RCTs with a high risk of bias |
| 2++ | High quality systematic reviews of case control or cohort or studies<br><br>High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal |
| 2+ | Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal |
| 2- | Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal |
| 3 | Non-analytic studies, e.g. case reports, case series |
| 4 | Expert opinion |

---

[1] There is a separate report outlining the evidence for the association between childhood sexual abuse and trauma-related responses.

[2] Scottish Intercollegiate Guidelines Network http://www.sign.ac.uk/

## 5. Findings

**Systematic Reviews**

Three systematic reviews are included in this report: Lindert et al. (2014)[1], Maniglio (2013)[2], and Carr et al. (2013)[3].

The most recent systematic review and meta-analysis by Lindert et al. (2014)[1] looked at epidemiological studies that described the association between childhood physical or sexual abuse and depression or anxiety. The authors included 19 studies; 18 studies were cross-sectional and 1 was longitudinal (a New Zealand birth cohort study; Moffitt et al. 2007). Fourteen studies assessed depression, thirteen studies assessed anxiety, and eight studies assessed distress (i.e., depression or anxiety). The cross-sectional studies included some form of random sampling of a general population, in which prior child abuse was assessed retrospectively and psychological outcomes were assessed at the time of recruitment. In the longitudinal study, the participants self-reported child abuse at age 32 years. All studies contrasted abuse exposure versus no abuse exposure before age 16 years to depression and/or anxiety after age 16 years.

The odds of people with childhood sexual abuse having anxiety in adulthood were significantly greater than in people with no childhood sexual abuse (OR[†] = 2.52; 95% CI[±]: 2.12 to 2.98). This pooled estimate was based on thirteen studies. The data exhibited heterogeneity ($I_2$ = 58.7%[§], p = 0.004; see forest plots in evidence table for more details). Childhood physical abuse was also found to be associated with an increased risk of developing anxiety in adulthood (OR = 1.70; 95% CI: 1.33 to 2.18).

The odds of people with childhood sexual abuse having distress (i.e., depression or anxiety) in adulthood were significantly greater than in people with no childhood sexual abuse (OR = 3.01; 95% CI: 2.41 to 3.76). There was modest heterogeneity among the studies ($I^2$ = 45%, p = 0.119). The results were essentially unchanged when the longitudinal study was excluded. Childhood physical abuse was also found to be associated with an increased risk of having distress in adulthood (OR = 2.16; 95% CI: 1.38 to 3.40).

Age group- or gender-specific results were not reported in most studies; therefore a random effects meta-regression was used to assess the influence of these factors. There was no

---

[†] odds ratio

[±] 95% confidence interval

[§] a measure of heterogeneity (i.e., variation in treatment effects above that expected by chance); see Appendix 3 for more details about heterogeneity and the $I^2$ statistic

CONFIDENTIAL

evidence of a relationship between age or gender of subjects and the OR for either physical or sexual abuse and anxiety or depression. Publication bias was assessed using a funnel plot, which found no obvious bias. The results of this systematic review and meta-analysis support the hypothesis that sexual abuse in childhood is associated with anxiety in adulthood.

This systematic review and meta-analysis was of fair methodological quality (1+). Limitations of the systematic review and meta-analysis include abuse among subjects being reported retrospectively in all studies; studies included were restricted to only original research studies reporting adjusted ORs; abuse was assessed with a variety of different methods; there was no detailed data on the important aspects of abuse (e.g. frequency, duration and severity); the variety of outcome definitions used; and only one study included in the review reported gender-specific outcomes.

The second systematic review by Maniglio (2013)[2] examined published reviews investigating the role of child sexual abuse (CSA) in the aetiology of anxiety disorders. This fair quality (1+) systematic review included four reviews: Neumann et al. (1996; 15 meta-analyses investigating the relationship between CSA and a variety of psychological, behavioural and sexual problems), Rind et al. (1998; 18 meta-analyses examining the relationship between CSA and a variety of psychological, behavioural and sexual problems), Paolucci et al. (2001; 6 meta-analyses examining the relationship between CSA and a variety of psychological, behavioural and sexual problems), and Chen et al. (2010; 8 meta-analyses examining the association between prior history of sexual abuse and a variety of psychiatric symptoms or disorders). Paolucci et al. (2001) and Chen et al. (2010) reviewed a range of samples (i.e., young and adult, male and female, clinical and nonclinical samples), while Neumann et al. (1996) and Rind et al. (1998) focused on adult female (both clinical and nonclinical) samples and college (both male and female) samples, respectively.

Three reviews found a significant association between CSA and generic anxiety symptoms (Neumann et al. 1996 ($d^{¢}$ = .40; 95% CI: .34 to .47); Rind et al. 1998 ($r^{Ŧ}$ = .13; 95% CI: .10 to .15; $\chi^{2\,φ}$ = 4.62); Chen et al. 2010 (OR = 3.09; 95% CI: 2.43 to 3.94))[*]. Significant associations were also found between CSA and post-traumatic stress symptoms (Neumann et al. 1996 (d =.52; 95% CI: .44 to .59); Paolucci et al. 2001 (d = .40; 95% CI: .37 to .43); Chen et al. 2010 (OR = 2.34; 95% CI: 1.59 to 3.43))[**], obsessive-compulsive symptoms

---

$^{¢}$ Cohen's d; measure of effect size
$^{Ŧ}$ correlation coefficient; measure of effect size
$^{φ}$ Chi-squared test
[*] converted effect size to OR for generic anxiety symptoms: Neumann et al. (1996): 2.07; Rind et al. (1998): 1.60
[**] converted effect size to OR for post-traumatic stress symptoms: Neumann et al. (1996): 2.57; Paolucci et al. (2001): 2.07

CONFIDENTIAL

(Neumann et al. 1996 (d = .34; 95% CI: .22 to .46); Rind et al. 1998 (r = .10; 95% CI: .06 to .15; $\chi^2$ = 5.01)) [***], and phobic symptoms (Rind et al. 1998 (r =.12; 95% CI: .07 to .17; $\chi^2$ = 8.08)) [****].

Moderator variables [ϕ] included definition of abuse, abuse involving contact, relationship to the perpetrator (greater risk of anxiety problems in college survivors of intrafamilial abuse, and in college female victims of abuse – both wanted and unwanted sex), and sample source (samples from non-clinical populations yielded smaller effect sizes than clinical samples). In addition, form of publication generated conflicting results, with some evidence suggesting larger effect sizes among college samples whose results were published. Gender, socioeconomic status, age of subjects at time of assessment, penetration, force, frequency, duration of abuse, age when abused, level of contact and consent, publication date, sampling strategy, method of assessment of abuse, type of statistics, sample size, as well as type of institution were not statistically significant moderators.

The authors concluded that there is evidence that CSA is a significant, although general and nonspecific, risk factor for anxiety disorders, especially posttraumatic stress disorder (regardless of gender of the victim and severity of abuse). However, the authors note that causal inferences cannot be made because of the presence of both confounding variables and methodological limitations in the studies included in each review. Nonetheless, CSA should be considered one of the several risk factors for anxiety disorders and included in multifactorial etiological models for anxiety disorders.

The final systematic review by Carr et al. (2013)[3] was of fair methodological quality (1-) and examined studies investigating early life stresses (i.e., sexual abuse, physical abuse, emotional abuse, physical neglect, and emotional neglect) and their association with psychiatric disorders in adulthood. The authors included 44 articles, of which 43 evaluated sexual abuse as an early life stress. Nineteen studies used a control group. The comparator groups included subjects without mental disorders (n = 14), and subjects without early life stressors (n = 5).

Twenty studies found support for the association between sexual abuse and anxiety disorders, particularly with post-traumatic stress disorder, panic disorder, agoraphobia, and obsessive-compulsive disorder. Physical abuse and unspecified neglect were also found to be associated

---

[***] converted effect size to OR for obsessive compulsive symptoms: Neumann et al. (1996): 1.85; Rind et al. (1998): 1.43
[****] converted effect size to OR for phobic symptoms: Rind et al. (1998): 1.55
[ϕ] variables that account for significant heterogeneity in effect size estimates; variable that affects the strength of relationship

CONFIDENTIAL

with anxiety disorders. However, due to lack of any statistical analyses and methodological assessment of study quality, this review is hypothesis-generating.

**Meta-Analyses**

Two meta-analyses are included in this report: Amado et al. (2015)[4] and Martinez et al. (2014)[5].

The meta-analysis by Amado et al. (2015)[4] was of fair methodological quality (1-) and investigated the effects of child/adolescent sexual abuse on victims' likelihood of developing symptoms of internalising injury, specifically depression and anxiety. The authors included 78 studies with 19,360 participants.

They found that sexual abuse was significantly associated with general sequelae (i.e., internalising injury), depression, and anxiety. Victims of child/adolescent sexual abuse had a 68% higher probability of anxiety than non-victims. Victims of child/adolescent sexual abuse had a greater probability of developing generalised anxiety disorder (OR = 5.12; r = .34; 95% CI: .33 to .35), specific phobia (OR = 7.62; r = .41; 95% CI: .40 to .42), social phobia (OR = 4.85; r = .34; 95% CI: .33 to .35) and panic disorder (OR = 5.60; r = .36; 95% CI: .35 to .37), with injury (i.e., psychological injury) quantified as 41%, 49%, 40% and 43%, respectively.

With regards to moderators, the authors found female and male child/adolescent sexual abuse victims were more likely to develop anxiety disorders than non-victims (ORs =2.43 and 1.66, respectively). The effect size found in females was significantly higher than for males ($q_s^{\psi}$=0.104, p <.05), with results generalizable for females but not for males (the effects of the moderators could not be assessed for males due to the very small k). Injury in anxiety for female and male victims was 2.26 and 1.73 times greater than for non-victims, respectively. Anxiety derived from abuse with penetration was significantly higher than abuse with no contact for anxiety ($q_s$= 0.092, p <.05).

Limitations of the meta-analysis include the use of self-reports of a retrospective nature for classification of abuse; primary studies assume that injury to mental health is sequelae to abuse without appraising other possible causes; the effect of the variable under analysis in primary studies was not completely isolated (as in many studies victims of sexual abuse, physical abuse, neglect and other categories appear under the same umbrella); and some studies had no control group, the normative population was taken as contrast group, or it was not equivalent to the experimental one with the subsequent potential for distortion in the calculated effect sizes.

---

$\psi$ Cohen's q; measure of effect size with correlational differences

CONFIDENTIAL

The second meta-analysis by Martinez et al. (2014)[5] was of fair quality (1+) and looked at determinants of differential responses to trauma exposure. The authors included 74 studies with samples of youth exposed to traumatic events and who completed the Trauma Symptom Checklist for Children (TSCC).

The authors found that sexual abuse was associated with higher anxiety than child abuse/neglect (t[ᵘ](20) = 3.53, p = .002), community violence (t(25) = 5.76, p <. 001), and complex trauma (t(21) = 3.69, p = .001). Among sexual abuse samples, female representation was associated with higher posttraumatic stress, anger and dissociation but not anxiety or depression. Among sexual abuse samples, older age was associated with higher anxiety β[Ø] = .57, $Q$[ˣ](1,17) = 8.96, p <. 003), as well as posttraumatic stress, depression and dissociation.

Limitations of the meta-analysis include only including published studies which may have resulted in a bias in the study sample, and the decision to focus only on the Trauma Symptom Checklist for Children disregarding other measures of symptomology (e.g. structured interviews or other symptom checklists).


## 6. Additional Information

**Other Risk Factors of Anxiety Disorders**

Although not the focus of this report, other risk factors for the development of anxiety disorders will give context to the evidence about childhood sexual abuse. One source was used (with no formal methodological appraisal): *DynaMed*[TM***].


**DynaMed**[TM]


**Generalised Anxiety Disorder**
***Likely risk factors:***
- family or personal history of anxiety or mood disorders
- female gender
- history of:
  - physical or emotional trauma

---

[ᵘ] t-test
[Ø] standardised regression coefficient
[ˣ] *Q* statistic; used to assess the magnitude of variability in the weighted mean t-scores
[***] a clinical reference resource tool created by physicians for physicians and other health care professionals with conclusions based on the best available clinical evidence which has been consistently and systematically identified, evaluated and selected

CONFIDENTIAL

- low socioeconomic status
- internalizing problems
- stressful life events such as child abuse or childhood conduct problems
- lifestyle, socioeconomic, and behavioural characteristics:
  - separated, widowed, or divorced
  - loneliness
  - unemployed
  - homemaker
  - low education
  - increased stress
  - inhibited behaviour
- The following factors associated with an increased risk of developing a first-ever anxiety disorder among adults: subthreshold panic attack, history of depressed moods and affective disorders, female gender, low mastery (view that personal events are under one's control), having ≥ 2 chronic somatic illnesses, and parental history of anxiety disorder
  - based on cohort study of 5,618 adults in the Netherlands
- adolescent self-harm with or without suicidal intent associated with increased risk of depression and anxiety disorder diagnosis in young adulthood
  - based on prospective cohort study of 4,799 adults born in 1991-1992 from Avon Longitudinal Study of Parents and Children in United Kingdom completed questionnaire at age 16 years and were followed
- serotonin 1A receptor gene C(-1019)G polymorphism associated with comorbid generalised anxiety disorder and major depression
  - based on cohort study with 1,059 patients

*Possible risk factors:*
- low income level
- heavy cigarette smoking during adolescence may increase risk of anxiety disorders in early adulthood
  - based on prospective cohort study of 688 children and adolescents
- greater exposure to fine particulate air pollution may be associated with increased prevalence of anxiety symptoms in older women
  - based on analysis of patient data from 71,271 women aged 57-85 years (mean age 70 years) in Nurses' Health Study
- respiratory disease in infancy associated with increased risk of treatment for anxiety disorder in adulthood

- based on prospective cohort study of 1,062 infants followed through adulthood
- reported slapping and spanking during childhood associated with increased risk for anxiety disorder and other disorders in adulthood
  - based on retrospective cohort study of 4,888 persons aged 15-64 years who did not report history of physical or sexual abuse (excluding slapping and spanking) during childhood

## Social Anxiety

*Likely risk factors:*

- family history of social anxiety

*Possible risk factors:*

- level of physical activity
  - regular physical activity associated with lower prevalence of social anxiety
    - based on cross-sectional study of 8,098 persons aged 15-54 years in United States

## Specific Phobia

*Likely risk factors:*

- family history, particularly first-degree relatives with phobia
- stiff man syndrome as risk factor for a situational phobia

## Panic Disorder

*Likely risk factors:*

- family history and genetic predisposition
  - based on systematic review and meta-analysis of studies of aggregate familial risk

*Possible risk factors:*

- significant life stressors
- history of childhood sexual or physical abuse
- anxious temperament
- cigarette smoking in adolescents and young adults
  - smoking associated with increased risk of panic disorder and panic attacks in young adults
    - based on prospective cohort study of 3,021 persons aged 14-24 years followed for mean 42 months

- cigarette smoking during adolescence may increase risk of anxiety disorders in early adulthood
  - based on prospective cohort study of 688 adolescents
- regular physical activity associated with lower prevalence of panic attacks and anxiety disorders
  - based on cross-sectional study of 8,098 persons aged 15-54 years in United States

## Agoraphobia

### Likely risk factors:

- genetic predisposition likely, with heritability reported as high as 61%
- panic attacks and panic disorder may precede agoraphobia
  - based on cohort study of 3,021 persons in Germany aged 14-24 years followed for 10 years

### Possible risk factors:

- response to early trauma or family climate
- in older patients, onset of agoraphobia may be associated with events such as falls, muggings, or physical illness
- agoraphobic behaviour reported to develop following physical illness such as vestibular disease or postural instability from Parkinson disease
- regular physical activity associated with lower prevalence of panic attacks and anxiety disorders
  - regular physical activity associated with lower prevalence of current:
    - major depression (OR = 0.75; 95% CI: 0.6 to 0.94)
    - panic attacks (OR = 0.73; 95% CI: 0.56 to 0.96)
    - social phobia (OR = 0.65; 95% CI: 0.53 to 0.8)
    - specific phobia (OR = 0.78; 95% CI: 0.63 to 0.97)
    - agoraphobia (OR = 0.64; 95% CI: 0.43 to 0.94)
      - based on cross-sectional study of 8,098 persons aged 15-54 years in United States
- cigarette smoking during adolescence
  - based on prospective cohort study of 688 adolescents with follow-up interview 5-8 years later
  - anxiety during adolescence not significantly associated with heavy smoking during early adulthood

**Mediators of the Association between Childhood Sexual Abuse and Anxiety Disorders**

The current literature regarding possible mediators can provide further understanding into the association between childhood sexual abuse and anxiety disorders. Here, one source is reviewed (with no formal methodological appraisal): a narrative review by Whiffen and MacIntosh (2005). This is followed by a brief overview of several theories that have been proposed to help explain the relationship between childhood sexual abuse and subsequent development of anxiety disorders.

**Whiffen and MacIntosh (2005)**

This critical review looked at empirical literature on mediators of the link between childhood sexual abuse and emotional distress (including symptoms of depression, anxiety, dissociation, and trauma). The authors reviewed 19 studies assessing shame or self-blame, interpersonal difficulties, family environment, and coping as mediators of the link between childhood sexual abuse or maltreatment and adult emotional distress.

The authors found support for the roles of shame or self-blame, interpersonal difficulties and avoidant coping strategies as mediators. In addition, family conflict and over-control may mediate symptoms of anxiety. The authors also found that emotional distress appeared to mediate links between childhood sexual abuse and other adverse outcomes such as alcohol abuse and revictimisation.

The authors noted limitations in the literature including methodological and conceptual problems, specifically that researchers do not always use standardized procedures for determining mediation and confusion between mediators and proxy variables.

**Theories**

A number of theories have been proposed to help explain the association between childhood sexual abuse and the development of anxiety disorders in later life.

One proposed pathway suggests that internalised shame and self-blame subsequently lead to the development of anxiety (Maniglio, 2013). Other theories view childhood sexual abuse as being an acute traumatic event, which generates immediate phobic responses and anxiety-related symptoms due to the interference of the child's developing sense of security and safety (Briere & Elliott, 1994). It has also been proposed that childhood sexual abuse contributes to feelings of powerlessness which is thought to contribute to anxiety (Spaccarelli, 1994).

Negative cognitive appraisals about the self, the world, and others and their intentions have also been suggested to contribute to those who have experienced childhood sexual abuse being more susceptible to developing anxiety following exposure to another significant life stressor (e.g., interpersonal conflict, parental divorce, perpetrator threats; see Spaccarelli (1994) for full list). Furthermore, avoidant coping strategies have been thought to mediate the association between childhood sexual abuse and anxiety disorders (Chaffin, Wherry, & Dykman, 1997; Tremblay, Hébert, & Piché, 1999; Whiffen & MacIntosh, 2005).

There is a lack of literature exploring biological theories regarding the relationship between childhood sexual abuse and the development of anxiety disorders. Genetic and biological factors are considered to influence the development of anxiety independently, irrespective of the presence or absence of childhood sexual abuse (Maniglio, 2013). However, the literature indicates that early-life stress (i.e., childhood sexual abuse) can have neuro-biological consequences leading to an increased likelihood of developing a vulnerability to stress and anxiety (Heim, Shugart, Craighead, & Nemeroff, 2010).

Despite the above explanations, it is possible that certain variables, other than childhood sexual abuse, act independently to contribute to the development of anxiety disorders among those who have experienced childhood sexual abuse (Maniglio, 2013). In Maniglio's (2013)[2] most recent review of the literature, it was concluded that research in this area has not yet reached consensus, and many questions on the role childhood sexual abuse plays in the development of anxiety disorders remain unanswered.

## 7. Conclusions

The three systematic reviews and two meta-analyses in this report found:

- Fair quality evidence (i.e., the review was of fair methodological quality (1+/1-)) from one systematic review that people with childhood sexual abuse have significantly greater odds (OR=2.52) of having anxiety in adulthood compared to those with no childhood sexual abuse. Experience of childhood sexual abuse was also associated with higher odds of developing anxiety than childhood physical abuse (ORs = 2.52 versus 1.70, respectively)[1]

- Fair quality evidence from one systematic review of an association between childhood sexual abuse and anxiety (generic anxiety symptoms: OR range= 1.60 to 3.09; post-traumatic stress symptoms: OR range = 2.07 to 2.57; obsessive-compulsive symptoms: ORs = 1.43 and 1.85; phobic symptoms: OR = 1.55)[2]

- Fair quality evidence from one systematic review of an association between sexual abuse and anxiety disorders, particularly with post-traumatic stress disorder, panic disorder, agoraphobia and obsessive-compulsive disorder[3]

- Fair quality evidence from one meta-analysis that victims of childhood/adolescent sexual abuse were more likely to develop anxiety than were non-victims (generalised anxiety: OR = 5.12; specific phobia: OR = 7.62; social phobia: OR = 4.85; panic disorder: OR = 5.60)[4]

- Fair quality evidence from one meta-analysis that sexual abuse was associated with higher anxiety than child abuse/neglect, community violence, and complex trauma[5].

Using Bradford Hill's guide to causation (Appendix 4), the strength of association between childhood sexual abuse and the development of an anxiety disorder is in the order of 1.5 to 7.5 increased odds, and appears to be relatively consistent. Temporality (i.e., abuse occurs before the development of the anxiety disorder) cannot be certain due to the retrospective design of studies.

The biological gradient (i.e., greater exposure leads to greater incidence of the effect) was investigated by two authors[2, 4]. In one systematic review, aspects of the abuse experience (force, frequency, duration of abuse, age of victim when abused, level of contact) were not found to be statistically significant moderator variables[2]; however, the absence of a dose-response relationship does not rule out causality. One systematic review found anxiety resulting from abuse with penetration was significantly higher than abuse with no contact[4].

In relation to plausibility, there may be evidence for the roles of shame or self-blame, interpersonal difficulties, family conflict and over-control, as well as avoidant coping strategies as mediators of the link between childhood sexual abuse and the development of anxiety disorders. Additional mediators identified include the sense of loss of security and safety following the childhood sexual abuse, feelings of powerlessness, and negative cognitive appraisals about the self, world and others. It has been noted that research regarding the role of childhood sexual abuse on the development of anxiety disorders is not yet fully understood.

Limitations of the current research examining the association between childhood sexual abuse and anxiety disorders include methodological weaknesses of studies included in reviews, childhood sexual abuse and outcomes being assessed using a variety of different methods, abuse being reported retrospectively, and the range of confounding variables present across studies.

Given the identified limitations of the current literature and that there are likely to be many causes of and risk factors for anxiety disorders, it is difficult to provide a strong conclusion as to whether childhood sexual abuse is a direct and sufficient cause of anxiety disorders. However, there is some good quality evidence that childhood sexual abuse is likely to be a risk factor for developing anxiety later in life.

## 8. Limitations of this report

As only English language articles were included, the presence of publication bias in this report is a possibility. In addition, only focussing on systematic reviews and meta-analyses may have missed more recent research.

## 9. Appendix 1: Evidence Tables

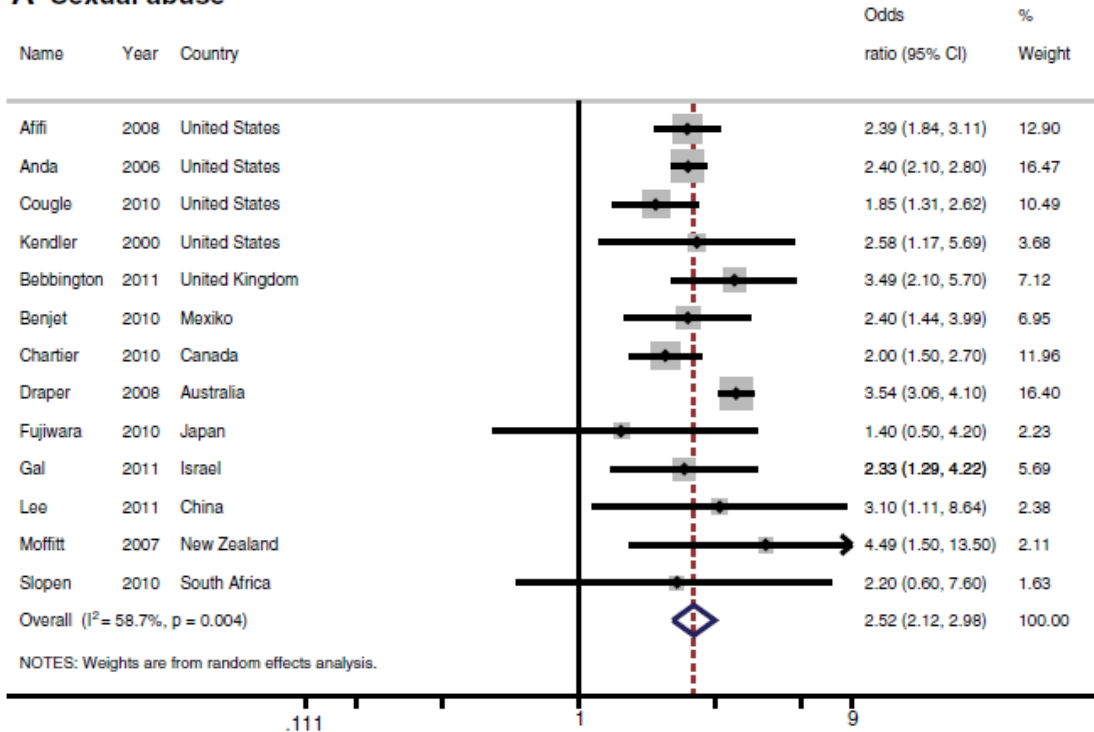| Reference and study design | Studies | Exposure | Outcome Measure | Results | Conclusions |
|---|---|---|---|---|---|
| Lindert et al. (2014).<br><br>"Sexual and physical abuse in childhood is associated with depression and anxiety over the life course: Systematic review and meta-analysis."<br><br>International Journal of Public Health **59**:359-372<br><br>Germany<br><br>Included studies:<br>*Total:*<br>Afifi et al. 2009, Anda et al. 2006, Bebbington et al. 2011, Benjet et al. 2010, Chartier et al. 2010, Comijs et al. 2007, Cougle et al. 2010, Draper et al. 2008, Fujiwara & Kawakami 2011, Gal et al. 2011, Ishida et al. 2010, Jirapramukpitak et al. 2011, Kendler et al. 2000, Lee et al. 2011, Luo et al. 2008, Moffit et al. 2007, Ramiro et al. 2010, Slopen et al. 2010, Thompson et al. 2004 | Number of studies: Total = 19; child sexual abuse and anxiety = 13<br><br>Total number of participants in the studies: 115,579<br><br>Child sexual abuse and anxiety: N = 85,485<br><br>Inclusion criteria: Assessed exposure to physical or sexual abuse in childhood or adolescence before the age of 16 years and depression or anxiety in subjects at least 16 years old; presented original data from an epidemiologic cross-sectional or longitudinal study in peer-reviewed literature; included at least 100 participants who were from the general community; used quantitative categorical assessment of child abuse before age 16 years; assessed depression and anxiety with validated scales or clinical diagnoses after age 16 years; and reported effect estimates with confidence intervals. | Child sexual abuse, child physical abuse | Odds ratio (OR) of depression, anxiety, or distress (i.e., depression or anxiety) in adulthood. | **Child sexual abuse and anxiety (N =13 studies)**<br><br>OR = 2.52 (95% CI: 2.12 to 2.98)<br>$I^2 = 58.7\%$, p = 0.004<br><br>**Child sexual abuse and distress (i.e., depression or anxiety; N not reported)**<br><br>OR = 3.01 (95% CI: 2.41 to 3.76)<br>$I^2$, 45%, p = 0.119<br><br>**Child sexual abuse and depression (N = 14 studies)**<br><br>OR = 2.04 (95% CI: 1.65 to 2.53)<br>$I^2 = 81\%$, p < 0.0001<br><br>**Child physical abuse and anxiety (N = 7 studies)**<br><br>OR = 1.70 (95% CI: 1.33 to 2.18)<br>$I^2$, 95%, p < 0.001<br><br>**Child physical abuse and distress (N not reported)**<br><br>OR = 2.16 (95% CI: 1.38 to 3.40) | Author's conclusions: High levels of depression, anxiety and distress are reported in adults exposed to childhood sexual and physical abuse.<br><br>Reviewer's conclusions: This systematic review and meta-analysis indicates that the odds of people with childhood sexual abuse having anxiety in adulthood is significantly greater than in people with no childhood sexual abuse. |

| | | | | |
|---|---|---|---|---|
| *Child sexual abuse and anxiety:*<br>Afifi et al. 2009, Anda et al. 2006, Cougle et al. 2010, Kendler et al. 2000, Bebbington et al. 2011, Benjet et al. 2010, Chartier et al. 2010, Draper et al. 2008, Fujiwara & Kawakami 2011, Gal et al. 2011, Lee et al. 2011, Moffit et al. 2007, Slopen et al. 2010. | Exclusion criteria: Not explicitly reported; however, studies excluded included those on special populations, not original studies, no confidence intervals reported, only reporting data on psychosis. Other reviews were also excluded.<br><br>Databases used: PubMed/MEDLINE (National Library of Medicine), EMBASE (Elsevier), PsycINFO (EBSCO), MeSH (NLM), EMTREE (Elsevier), Thesaurus of Psychological Index Terms (APA) (Jan 2000 – March 2012)<br><br>Description of the methodological assessment of studies: not conducted<br><br>Fixed or variable effects: random effects; fixed effect methods with Mantel-Haenszel weighting for one study.<br><br>Heterogeneity:  Cochrane Q test, quantified using $I^2$ statistic | | | $I^2$, 96.6%, $p < 0.0001$<br><br>**Child physical abuse and depression (N = 7 studies)**<br><br>OR = 1.49 (95% CI: 1.29 to 1.72)<br>$I^2 = 36\%$, $p = 0.16$<br><br>No evidence of a linear relationship between mean age of the study samples and the OR for either type of abuse and anxiety or depression (all $p \geq 0.53$).<br><br>No linear relationship between gender and the OR for either type of abuse and anxiety or depression (all $p \geq 0.60$). | |

**Forest plots for meta-analyses**

**Fig. 1 meta-analysis of child sexual abuse on anxiety.**
The side of the shaded box around the individual study ORs represents the weight for that study for the pooled analysis.

**A Sexual abuse**

| Name | Year | Country | Odds ratio (95% CI) | % Weight |
|------|------|---------|---------------------|----------|
| Afifi | 2008 | United States | 2.39 (1.84, 3.11) | 12.90 |
| Anda | 2006 | United States | 2.40 (2.10, 2.80) | 16.47 |
| Cougle | 2010 | United States | 1.85 (1.31, 2.62) | 10.49 |
| Kendler | 2000 | United States | 2.58 (1.17, 5.69) | 3.68 |
| Bebbington | 2011 | United Kingdom | 3.49 (2.10, 5.70) | 7.12 |
| Benjet | 2010 | Mexiko | 2.40 (1.44, 3.99) | 6.95 |
| Chartier | 2010 | Canada | 2.00 (1.50, 2.70) | 11.96 |
| Draper | 2008 | Australia | 3.54 (3.06, 4.10) | 16.40 |
| Fujiwara | 2010 | Japan | 1.40 (0.50, 4.20) | 2.23 |
| Gal | 2011 | Israel | **2.33 (1.29, 4.22)** | 5.69 |
| Lee | 2011 | China | 3.10 (1.11, 8.64) | 2.38 |
| Moffitt | 2007 | New Zealand | 4.49 (1.50, 13.50) | 2.11 |
| Slopen | 2010 | South Africa | 2.20 (0.60, 7.60) | 1.63 |
| Overall ($I^2$ = 58.7%, p = 0.004) | | | 2.52 (2.12, 2.98) | 100.00 |

NOTES: Weights are from random effects analysis.

.111       1       9

Note: there was no forest plot conducted for child sexual abuse on distress.

**Study type: Systematic review with meta-analysis**

**Quality: 1+**

**Comments:** Adequately conducted systematic review with meta-analysis. Systematic search of three databases. No language restriction. Methodological assessment not reported. Publication bias assessed by funnel plot – no obvious pub bias present. Heterogeneity considered. Subgroup analysis undertaken. Meta-analysis appears appropriate.

| Reference and study design | Studies | Results | | | | |
|---|---|---|---|---|---|---|
| Maniglio (2013)<br><br>"Child sexual abuse in the aetiology of anxiety disorders: A systematic review of reviews."<br><br>Trauma, Violence & Abuse **14**(2): 96-112.<br><br>Italy<br><br>Included studies: Chen et al. 2010, Neumann et al. 1996, Paolucci et al. 2001, Rind et al. 1998 | Number of studies: 4<br><br>Total number of participants in the studies: 3,214,482<br><br>Inclusion criteria: studies need to have appeared in peer-reviewed journals; be published in full; be critical reviews of the literature; review studies sampling human subjects; investigate medical, neurobiological, psychological, behavioural, sexual, or other health problems following child sexual abuse; have primary and sufficient data derived from longitudinal, cross-sectional, case-control or cohort studies; reviews must address the significance, strength, and/or nature of the relationship between child sexual abuse and later anxiety symptoms or disorders and/or the potential effects of third variables on such relationship.<br><br>Exclusion criteria: Must not be dissertation papers, editorials, letters, | **Source** | **Subjects** | **Outcome variables** | **Significant outcomes (effect sizes or odds ratios [95%CI]; homogeneity** | **Significant moderators (between-group homogeneity)** |
| | | Chen et al. (2010) | Male and female young and adult patients and non-patients (37 studies, 3,162,318 subjects) | Anxiety, posttraumatic stress, depression, eating disorders, sleep disorders, suicide attempts, schizophrenia, somatoform disorders | Anxiety (OR =3.09 [2.43-3.94]), posttraumatic stress (OR= 2.34 [1.59, 3.43]), depression (OR =2.66 [2.14, 3.30]), eating (OR =2.72 [2.04, 3.63]), sleep (OR =16.17 [2.06-126.76]), suicide (OR=4.14 [2.98, 5.76]) | Posttraumatic stress: history of rape (females abused in adulthood, OR=2.57 [1.13, 5.87] |
| | | Neumann et al., 1996 | Female adult patients & nonpatients (38 studies, 11,162 subjects) | Anxiety, obsessions or compulsions, posttraumatic stress, anger, depression, revictimization, self-mutilation, sex problems, substance abuse, suicide, self-concept, interpersonal problems, dissociation, somatization, general symptoms, overall psychopathology | Anxiety (d =.40 [.34,.47]), obsessions/ compulsions (d= .34 [.22, .46]), posttraumatic stress (d =.52 [.44, .59]), depression (d= .41 [.36, .46]), anger (d =.39 [.25, .51]), revictimization (d= .67 [.50, .84]), self-mutilation (d= .42 [.19, .64]), sex problems (d =.36 [.30, .42]), substance abuse (d= .41 [.31, .51]), suicide (d = .34 [.24, .44]), self-concept (d = .32 [.32, .47]), interpersonal problems (d =.39 [.22, .46]), dissociation (d= .39 [.32, .47]), somatization (d= .34 [.24, .45]), general symptoms (d =.46 [.40, .52]), overall psychopathology (d = .37 [.33, .41]; Q= 62.36, p<.01) | Overall impairment: sample source (Q$_B$ =9.40, p < .01) |

| | | | | | |
|---|---|---|---|---|---|
| conference proceedings, books and book chapters<br><br>Databases used: AMED, Cochrane Reviews, EBSCO, ERIC, MEDLINE, PsycINFO, ScienceDirect (Jan 1996 – December 2008 and January 2009 – December 2010) + reference lists search<br><br>Description of the methodological assessment of studies: Methodological Quality Checklist<br><br>Fixed or variable effects: not applicable<br><br>Heterogeneity: Chen et al. (2010) used $I^2$; Neumann et al. (1996) used Hedges' between-group heterogeneity statistic ($Q_{BET}$); Rind et al. (1998) used normal deviate z (equivalent to $Q_{BET}$). Paolucci et al. (2001) did not use statistics to quantify heterogeneity of effect sizes. | Paolucci et al., 2001 | Male & female young & adult patients & nonpatients (37 studies, 88 samples, 25,367 subjects) | Posttraumatic stress, depression, suicide or self-injury, early sex or prostitution, sex perpetration, intelligence or learning | Posttraumatic stress (d = .40 [.37, .43]), depression (d = .44 [.41, .47]), suicide/ self-injury (d = .44 [.40, .48]), early sex/ prostitution (d = .29 [.25-.32]), sex perpetration (d = .16 [.11, .21]), intelligence/ learning (d = .19 [.12, .26]) | |
| | Rind et al., 1998 | Male & female adult nonpatients (59 studies, 51 samples, 15,635 subjects) | Anxiety, obsessions or compulsions, phobia, alcohol, depression, dissociation, eating disorders, hostility, interpersonal sensitivity, locus of control, paranoia, psychosis, self-esteem, sex problems, social impairment, somatization, suicide, general symptoms, overall psychopathology | Anxiety (r = .13 [.10, .15]; $\chi^2$ = 4.62), obsessions / compulsions (r= .10 [.06, .15]; $\chi^2$ = 5.01), phobia (r =.12 [.07, .17]; $\chi^2$ = 8.08), alcohol (r =.07 [.02, .12]; $\chi^2$ = 2.97), depression (r = .12 [.10, .14]; $\chi^2$ = 25.71), dissociation (r = .09 [.04, .15]; $\chi^2$ = 1.86), eating disorders (r = .06 [.02, .10]; $\chi^2$ = 9.92), hostility (r = .11 [.06, .16]; $\chi^2$ = 11.22, p < .05), interpersonal sensitivity (r = .10 [.06, .15]; $\chi^2$ =11.78), paranoia (r = .11 [.07, .16]; $\chi^2$ = 10.34), psychosis (r = .11 [.06, .15]; $\chi^2$ =10.13), self-esteem (r = .04 [.01, .07]; $\chi^2$ = 51.31, p < .05), sex problems (r =.09 [.07, .11]; $\chi^2$ = 39.49, p < .05), social impairment (r = .07 [.04, .10]; $\chi^2$ = 20.37), somatization (r = .09 [.06, .12]; $\chi^2$ = 15.20), suicide (r | Overall impairment: published study (r = .25, p= .08), incest (r = .09 [.01- .17]; $\chi^2$ = 15.20), consent gender interaction (z = 2.51, p>.02; females, r=.11 [.09-.13]; $\chi^2$ = 14.50) |

| | | |
|---|---|---|
| | | = .09 [.06, .12]; $\chi^2$ = 10.94), general symptoms (r = .12 [.08, .15]; $\chi^2$ =18.77), overall psychopathology (r = .09 [.08, .11]; $\chi^2$ =49.19, p > .50) |
| | | **Significant confounders**<br>Rind et al., 1998:<br>Overall impairment: nonsexual abuse or neglect (r = .19 [.13, .25]; $\chi^2$ = 2.36), family adaptability (r = .13 [.06, .19]; $\chi^2$ = 20.38), family conflict or pathology (r= .14 [.12, .17]; $\chi^2$ = 0.74), family structure (r = .09 [.06, .12]; $\chi^2$ = 6.54), family support or bonding (r = .13 [.09, .16]; $\chi^2$ = 36.46), family traditionalism (r = .16 [.09, .22]; $\chi^2$ = 8.26).<br>Anxiety: overall family (r= .34 [-.28, .40]; $\chi^2$ = 19.80).<br>Obsessions / compulsions: overall family (r = .27 [ -.20, .34]; $\chi^2$ = 4.02).<br>Phobia: overall family (r= .18 [-.08, .28]; $\chi^2$ = value not provided). |

**Conclusions**

Author's conclusions: Across methodologies, samples and measures, survivors of CSA are significantly at risk for anxiety problems, such as generic anxiety, obsessive-compulsive phobia, and posttraumatic stress symptomology. However, causal inferences cannot be made, because of the presence of both confounding variables and methodological limitations in the studies included in each review.
Child sexual abuse should be considered a general, non-specific risk factor for anxiety symptoms or disorders.

Reviewer's conclusions: This systematic review presents evidence suggestive of an association between childhood sexual abuse and anxiety disorders, but is not definitive due to the limitations of the studies and confounding variables.

**Study type: Systematic review**

**Quality: 1+**

**Comments:** Adequately conducted systematic review with no meta-analysis. Multiple databases searched. Methodological assessment adequate. Heterogeneity considered. Subgroup analyses conducted by Chen et al. (2010) were discussed.

| Reference and study design | Studies | Results |
|---|---|---|
| Carr et al. 2013<br><br>"The role of early life stress in adult psychiatric disorders: A systematic review according to childhood trauma subtypes."<br><br>The Journal of Nervous and Mental Disease **201**(12): 1007-1018.<br><br>Brazil<br><br>Included studies:<br><br>*Total:*<br><br>Becker & Grilo, 2011; Heins et al. 2011, Laporte et al. 2011, Wingenfeld et al. 2011, Jonas et al. 2011, Khoury et al. 2010, McLaughlin et al. 2010b, Kessler et al. 2010, Green et al. 2010, McLaughlin et al. 2010a, Steiger et al. 2010, Hovens et al. 2010, Wiersma et al. 2009, Rubino et al. 2009, Steel | Number of studies: 44<br><br>Total number of participants in the studies: 145,507<br><br>Inclusion criteria: Study included at least one of the defined forms of early life stress: emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect; publications from 2001-2011; in English or Portuguese; in humans; and adults ranging in age from 18 to 64 years.<br><br>Exclusion criteria: Did not mention early life stress, genetic or neurobiological perspective, psychiatric disorders not mentioned, child or teenager sample, a review article, therapeutic or instruments, other idiom, abusers profile, cognitive or behavioural aspects, politic or legal aspects, | **Overview of results from articles (N = 24) examining the association between sexual abuse and anxiety disorder in adulthood** |

Results table:

| Author/year | ELS[†] Instrument | Diagnosis | Main Results |
|---|---|---|---|
| Afifi et al. 2006 | CTS, PBI | MD, AD, SAD, DBD | The prevalence of psychiatric disorders progressively increased as the severity SA increased |
| Afifi et al. 2008 | Open questions | MD, AD, SAD | SA was associated with all psychiatric disorders and suicide ideation. When associated with physical abuse, increased odds of suicidal attempts |
| Becker and Grilo, 2011 | CTQ | MD, AD, SAD, ED | SA was reported by 31% of binge-eating disorder participants. SA was associated with posttraumatic stress disorder |
| Bulik et al. 2001 | Structured questions | MD, AD, ED, SAD | Positive link between SA and increased risk for psychopathology, but not a predictive one |
| Caspi et al. 2008 | SSI | AD | Positive association between SA and obsessive-compulsive disorder as well as panic disorder |
| Gibb et al. 2007 | CTQ | MD, AD | SA associated especially with posttraumatic stress disorder |
| Green et al. 2010 | FHRDC, CTS | MD, AD, SAD, DBD | SA has powerful and often subadditive associations with the onset of many types of largely primary mental disorders throughout the life course |
| Hovens et al. 2010 | CTI | MD, AD | SA was associated with pure anxiety, pure depression, and anxiety and depression |

[†] Early Life Stress (i.e., emotional abuse, physical abuse, sexual abuse, emotional neglect or physical neglect)

| | | Study | Measure | Disorders | Findings |
|---|---|---|---|---|---|
| et al. 2009, Afifi et al. 2009, Tyrka et al. 2009, Caspi et al. 2008, Sfoggia et al. 2008, Afifi et al. 2008, Wonderlich et al. 2007, Grover et al. 2007, Uçok and Bikmaz 2007, Gibb et al. 2007, Afifi et al. 2006, Zavaschi et al. 2006, Sar et al. 2006, Sareen et al. 2005, Bradley et al. 2005, Katerndahl et al. 2005, Bandelow et al. 2005, Bebbington et al. 2004, Lang et al. 2004, Rayworth et al 2004, Holowka et al. 2003, Zanarini et al. 2002, Roy 2002, Lewis-Fernández et al. 2002, Leverich et al. 2008, Wonderlich et al. 2001, Bulik et al. 2001, Molnar et al. 2001a, Johnson et al. 2001, Molnar et al. 2001b. | specific groups, other clinical conditions.<br><br>Databases used: PubMed, SciELO, LILACS, PsycINFO (2001-2011), + manual search<br><br>Description of the methodological assessment of studies: not reported<br><br>Fixed or variable effects: not applicable<br><br>Heterogeneity: not discussed | Jonas et al. 2011 | TSQ | MD, AD, SAD, ED | In all cases, the overall association of SA with each disorder was highly significant. The highest scores were associated with non-consensual sexual intercourse, particularly with phobia and symptoms of PTSD, except panic |
| | | Katerndahl et al. 2005 | CSAAS, FOQ, PBI | MD, AD, SAD, PD, ED | SA was associated with borderline personality disorder, substance abuse, major depressive episode, suicidality, bulimia, agoraphobia, and panic disorder. Multiple perpetrators increase the probability of developing mental disorders |
| | | Kessler et al. 2010 | FHRDC, CTS | MD, AD, DBD, SAD | SA has strong associations with all classes of disorders at all life-course stages in all groups of World Mental Health countries |
| | | Khoury et al. 2010 | ETI, TEI | SAD, AD | Strong links between SA and substance use disorders and their joint associations with PTSD outcome |
| | | Lang et al. 2004 | CTQ | MD, AD, DD | SA was associated with increased anxiety sensitivity. The more subtypes of ELS, the more severe was the psychopathology |
| | | McLaughlin et al. 2010a | FHRDC, CTS | MD, AD, SAD, DBD | SA was significantly but modestly related to persistence of mood, substance, and anxiety disorders. Exposure to multiple other childhood adversities increased the persistence of mood and anxiety disorders throughout the life course |
| | | McLaughlin et al. 2010b | FHRDC, CTS | MD, AD, DBD | SA particularly associated with anxiety disorders but also with mood and disruptive behaviour disorders. Predictive effects persisted throughout the life course |

Note at top right (continuation of previous cell): comorbid group. Contributing to the severity of psychopathology

| | | Molnar et al. 2001a | CTS | MD, AD, SAD | SA is associated with substantial increased risk for subsequent psychopathology |
|---|---|---|---|---|---|
| | | Molnar et al. 2001b | CTS, FHRDC, DIS | MD, AD, SAD | Association between SA and suicidal behaviour, mediated by psychopathology. SA increased the risk for suicide attempts |
| | | Sareen et al. 2005 | CMHSR, FHRDC | MD, AD, SAD, ED | SA was independently and significantly associated with mental disorders |
| | | Wingenfeld et al. 2011 | ETI, ETI | MD, PD, AD, DD | SA was a significant predictor of all aspects of measured psychopathology |
| | | Wonderlich et al. 2007 | CTI | PD, AD, MD, SAD | SA was associated with mood disorders, anxiety disorders, daily purging frequency, and self-destructive behaviour |

AD = Anxiety Disorder; DBD = Disruptive Behaviour Disorder; ED = Eating Disorder; MD = Mood Disorder; PD = Personality Disorder; S = Schizophrenia; SAD = Substance Abuse Disorder.

CMHSR = Childhood Maltreatment History Self-Report; CSAAS = Child Sexual Abuse and Assault Survey; CTI = Childhood Trauma Interview; CTQ = Childhood Trauma Questionnaire; CTS = Conflict Tactics Scale; DIS = Diagnostic Interview Schedule; ETI = Early Trauma Inventory; FHRDC = Family History Research Diagnostic Criteria; FOQ = Family-of-Origin Questionnaire; PBI = Parental Bonding Index; SSI = Semi-Structured Interview; TSQ = Trauma Screening Questionnaire; TEI = Traumatic Events Inventory.

**Conclusions**

Author's conclusions: Sexual abuse was associated with anxiety disorders in 20 studies, and particularly with posttraumatic stress disorder, panic disorder, agoraphobia, and obsessive-compulsive disorder.

Reviewer's conclusions: This systematic review presents evidence suggestive of an association between childhood sexual abuse and anxiety disorders but is not definitive.

**Study type: Systematic review**

**Quality: 1-**

**Comments:** Wide ranging systematic review with no meta-analysis. Adequate search of multiple databases. No formal methodological assessment.

CONFIDENTIAL

| Reference and study design | Studies | Exposure | Outcome Measure | Results | Conclusions |
|---|---|---|---|---|---|
| Amado et al. (2015)<br><br>"Psychological injury in victims of child sexual abuse: A meta-analytic review."<br><br>Psychosocial Intervention 24: 49-62<br><br>Spain<br><br>Included studies: Balsam et al. 2010, Bonomi et al. 20008, Briere & Elliot 2003, Brown et al. 1999, Canton-Cortes et al. 2012, Canton-Cortes & Justicia 2008, Carey et al. 2008, Cheasty et al. 1998, Chen et al. 2004a, Chen et al. 2004b, Chen et al. 2006, Chen et al. 2014a, Chen et al. 2014b, Chen et al. 2014c, Comijs et al. 2013, Cortes-Arboleda et al. 2011a, Cortes-Arboleda et al. 2011b, Cutajar et al 2010a, Cutajar et al. 2010b, Doerfler et al. 2009, Dube et al. 2005, Feeney et al. 2013, Feerick & Snow, 2005, Fergusson et al. 2008a, Fergusson et al. 2008b, | Number of studies: 78<br><br>Total number of participants in the studies: 19,360<br><br>Inclusion criteria: Studies assessed the sequelae of child/adolescent sexual abuse in terms of depression and anxiety internalising variables; studies reporting the effect sizes of child/adolescent sexual abuse, sequelae (in which variables and/or statistics enabled group size, mean and standard deviation of sequelae measurement variables for each group, prevalence, specificity, and sensitivity to be calculated); studies defining the ground truth for classifying participants as victims of child/adolescent sexual abuse or the measure of abuse; and studies providing descriptive data on the sample employed.<br><br>Exclusion criteria: After contacting the authors, the data required was not facilitated for the computation of the effect sizes, studies with data errors (e.g., lack of consistency in group size | Child sexual abuse | Weighted effect size (Cohen's d; r), Odds Ratio of general sequelae (i.e., internalising injury), depression and anxiety | **Child sexual abuse and general sequelae (i.e., internalising injury)**<br><br>k=91; r = .28, 95% CI: .27 to .29<br>Victims of child/adolescent sexual abuse 70% higher probability of internalising injury than non-victims<br>Injury = 34%<br><br>**Child sexual abuse and Anxiety**<br><br>k=62; r = .26, 95% CI: .25 to .27<br>68% higher probability of internalising injury among victims versus non-victims<br>Injury = 31%<br><br>**Child sexual abuse and generalised anxiety:**<br><br>OR = 5.12l; r = .34, 95% CI: .33 to .35<br>Injury = 41%<br><br>**Child sexual abuse and specific phobia:**<br><br>OR = 7.62; r = .41; 95% CI: .40 to .42<br>Injury = 49% | Author's conclusions: The results of the study support a significant and positive effect of child/adolescent sexual abuse on mental health (of a small to large size and generalizable).<br><br>Reviewer's conclusions: This meta-analysis presents evidence that suggests child/adolescent sexual abuse is significantly associated with anxiety, including generalised anxiety disorder, specific phobia, social phobia, and panic disorder. |

| | | | | | |
|---|---|---|---|---|---|
| Fergusson et al. 2008c, Fergusson & Dacey 1997, Fergusson et al. 2013, Fondacaro et al. 1999, Frias et al. 2014, Godbout et al. 2013, Gudjonsson et al. 2011, Haj-Yahia & Tamish 2001, Henderson et al. 2002, Hobfoll et al. 2002, Jonas et al. 2011, Kendler et al. 2000, Kent & Walker 1998, Kugler et al. 2012, Kuo et al. 2011, Lamoreux et al. 2012, Leck et al. 2006, Li et al. 2012, Linskey & Fergusson 1997, López et al. 1995, Lumley & Harkness 2007, Lutrek et al. 2004, MacMillan et al. 2001a, MacMillan et al. 2001b, Manion et al. 1998a, Mannion et al. 1998b, Mapp 2006, Mchichi Alami & Kadri 2004, McLean et al. 2014, McLeer et al. 1998, Merril 2001, Messman-Moore et al. 2000, Meston et al. 2006, Meyerson et al. 2002, Miller 2006, Molnar et al. 2001a, Molnar et al. 2001b, Mullen et al. 1996, Musliner & Singer 2014, Nelson et al. 2002a, Nelson et al. 2002b, Newcomb et al. 2009a, | throughout the study not attributable to missing data), studies failing to guarantee the mutual exclusion of the victim of sexual abuse condition from other forms of maltreatment (e.g., studies undertaking a single comprehensive analysis of victims of sexual and physical abuse or neglect). <br><br> Databases used: Web of Science, Core Collection, Current Contents, Medline, Scielo, KCI-Korean + meta-search engines: Google, Yahoo, Google Scholar (1995-2015) <br><br> Description of the methodological assessment of studies: not reported <br><br> Fixed or variable effects: not reported <br><br> Heterogeneity: not discussed | | | **Child sexual abuse and social phobia:** <br><br> OR = 4.85; r = .34; 95% CI: .33 to .35 <br> Injury = 40% <br><br> **Child sexual abuse panic disorder:** <br><br> OR = 5.60; r = .36; 95% CI: .35 to .37 <br> Injury = 43% <br><br> **Child sexual abuse and Depression** <br><br> k=87; r = .24, 95% CI: .23 to .25 <br> 66% higher probability of internalising injury among victims versus non-victims <br> Injury = 28% <br><br> **Child sexual abuse and major depressive disorder:** <br><br> OR = 3.25; r = .26; 95% CI: .25 to .27 <br> Injury = 31% <br><br> **Child sexual abuse and dysthymia:** <br><br> OR = 6.59; r = .38; 95% CI: .37 to .39 <br> Injury = 46% | |

| | | | | | |
|---|---|---|---|---|---|
| Newcomb et al. 2009b, Offen et al. 2003, Peleikis et al. 2004, Peleikis et al. 2005, Pérez-Fuentes et al. 2013, Portegijs et al. 1996, Rich et al. 2005a, Rich et al. 2005b, Schaaf & McCanne, 1998, Silverman et al. 1996, Spertus et al. 2003, Steel et al. 2004, Subica 2013, Sun et al. 2008, Swanston et al. 2003, Thomas et al. 2011, Thompson et al. 2003, Trowell et al. 1999, van Vugt et al. 2013, Villarroel et al. 2012, Widom et al. 2007, Young et al. 2007a, Young 2007b. | | | | **Gender**<br><br>Female and male child/adolescent sexual abuse victims more likely to develop depression (ORs=5.40 and 1.44, respectively) and anxiety disorders (ORs =2.43 and 1.66, respectively) than non-victims.<br><br>For depression and anxiety, the effect size found in females was significantly higher than for males ($q_s$=0.388, p <.05 and $q_s$=0.104, p <.05, respectively), with results generalizable for females but not for males (effects of the moderators could not be assessed for males due to the very small k).<br><br>Injury in anxiety for female and male victims was 2.26 and 1.73 times greater than for non-victims, respectively. For depression: 2.26 and 1.60, respectively.<br><br>**Type of abuse**<br><br>Injury derived from abuse with penetration was significantly higher than injury in the no-contact abuse condition for depression ($q_s$=0.093, p <.05) and anxiety ($q_s$=0.092, p <.05). | |

**Study type: Meta-Analysis**

**Quality: 1-**

**Comments:** Adequately conducted meta-analysis. Multiple databases searched. Subgroup analysis undertaken.

| Reference and study design | Studies | Exposure | Outcome Measure | Results | Conclusions |
|---|---|---|---|---|---|
| Martinez et al. (2014).<br><br>"Symptom variation on the trauma symptom checklist for children: A within-scale meta-analytic review".<br><br>Journal of Traumatic Stress 27(6): 655-663.<br><br>United States<br><br>Included Studies: not explicitly stated. | Number of studies: 74<br><br>Total number of participants in the studies: 14,867<br><br>Inclusion criteria: Studies that provided raw (US or international) or T scores (US only) for at least one TSCC subscale; Included participants exposed to a traumatic event; Included youth ages 8-16 years; Published in a peer-reviewed journal in English; Had a sample size of 15 or greater.<br><br>Exclusion criteria: Not stated<br><br>Databases used: Social Sciences Citations Index, PsycINFO, PubMed, Published International Literature on Traumatic Stress<br><br>Description of the methodological assessment of studies: not reported<br><br>Fixed or variable effects: random effects<br><br>Heterogeneity: Q statistic and $I^2$ statistic | Trauma (sexual abuse, child abuse/neglect, community violence, complex trauma) | Trauma Symptom Checklist for Children (TSCC; Briere, 1996): Posttraumatic stress, anxiety, depression, anger, dissociation (t-scores) | **U.S versus international samples**<br><br>International samples of youth reported greater posttraumatic stress (Q(1, 63) = 6.90, p = .009), anxiety (Q(1, 57) = 8.43, p = .004), and depressive symptoms (Q(1, 53) = 6.36, p = .012) than youth in U.S. samples. No differences found for anger or dissociation<br><br>**Sexual abuse vs. other trauma types**<br><br>Sexual abuse associated with higher anxiety than child abuse/neglect (t(20) = 3.53, p = .002), community violence (t(25) = 5.76, p < .001), and complex trauma (t(21) = 3.69, p = .001).<br><br>Sexual abuse associated with higher symptoms of posttraumatic stress than child abuse/neglect (t(19) = 3.19, p = .005), community violence (t(24) = 5.47, p < .001), and complex trauma (t(20) = 3.66, p = .002).<br><br>Sexual abuse associated with higher depressive symptoms than child abuse/neglect (t(23) = 2.95, p = .007), community | Author's conclusions: A substantial percentage of youth exposed to a traumatic event do not develop clinically significant levels of posttraumatic symptomology. Youth who experienced sexual abuse displayed the greatest symptoms of posttraumatic stress, anxiety, depression and dissociation compared to exposure to community violence. Older age was associated with higher anxiety, posttraumatic stress, depression and dissociation in sexual abuse samples.<br><br>Reviewer's conclusions: This meta-analysis presents evidence suggesting that sexual abuse is associated with higher anxiety than child abuse/neglect, community violence, and complex trauma. In addition, older age is associated with higher anxiety. |

| | | | | violence (t(26) = 4.95, p < .001), or complex trauma (t(23) = 3.63, p = .001). | |
|---|---|---|---|---|---|
| | | | | No significant differences across trauma types for dissociative or anger symptoms. | |
| | | | | **Gender** | |
| | | | | Significant positive relationships between the percentage of females in a sample and posttraumatic stress ($\beta$ = .51, Q(1, 68) = 24.62, p < .001), anxiety ($\beta$ = .50, Q(1, 60) = 22.53, p < .001), depression ($\beta$ = .52, Q(1, 56) = 18.36, p < .001), and dissociation ($\beta$ = .35, Q(1, 59) = 8.48, p = .004). No significant relationship was found between gender and anger symptoms. | |
| | | | | Among sexual abuse samples, female representation was associated with higher posttraumatic stress ($\beta$ = .62, Q(1, 17) = 10.88, p = .001), anger ($\beta$ = .47, Q(1, 18) = 4.69, p = .030), and dissociation ($\beta$ = .53, Q(1, 18) = 8.03, p = .005), but not anxiety or depression. | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | **Age** | |
| | | | | Age not significantly associated with any TSCC subscale. | |
| | | | | Among sexual abuse samples, older age associated with higher posttraumatic stress ($\beta$ = .60, Q(1, 15) = 8.30, p = 004), anxiety ($\beta$ = .57, Q(1, 17) = 8.96, p < .003), depression ($\beta$ = .51, Q(1, 16) = 6.00, p = .014), and dissociation ($\beta$ = .50, Q(1, 16) = 5.78, p = .016). | |
| | | | | No significant interaction found between age and sexual abuse for anger symptoms. | |
| | | | | **Ethnicity** | |
| | | | | Higher sample representation of ethnic minorities ($\beta$ = −.40) associated with lower depression (Q(1, 33) = 6.27, p = .012). | |
| | | | | No significant relationships between ethnic minority representation and other subscales found. | |
| | | | | No significant interactions found between ethnic minority representation and trauma type for any TSCC subscale. | |

CONFIDENTIAL

**Study type: Meta-Analysis**

**Quality: 1+**

**Comments:** Adequately conducted meta-analysis. Multiple databases searched. Heterogeneity considered. Subgroup analysis undertaken. No formal methodological assessment.

## 10.    Appendix 2: Excluded Study Table

The 52 studies excluded from this report are presented in the table below. These studies had the term "review", "systematic review", and/or "meta-analysis" stated in its abstract.

An additional 1000+ articles were identified by the literature searches conducted. However, these articles were not included in this report based on the exclusion criteria (i.e., non-English studies, animal or laboratory studies, narrative reviews, letters or editorials; study designs other than systematic review or meta-analysis).

| Reference | Reason for exclusion |
|---|---|
| Aaron 2012 | Literature review; Focus not on anxiety |
| Alexander 2007 | Review; Focus not on anxiety |
| Alonso et al. 2009 | Focus not on anxiety |
| Asati et al. 2012 | Review; Focus not on anxiety and childhood sexual abuse |
| Avinger & Jones 2007 | Review; Focus is on intervention - not about causation |
| Beghi et al. 2013a | Literature review; Focus not on anxiety |
| Beghi et al. 2013b | Literature review; Focus not on anxiety and childhood sexual abuse |
| Benuto & O'Donohue 2015 | Review of meta-analyses; Focus is on intervention - not about causation |
| Bolen et al. 2015 | Meta-analysis; Focus not on anxiety |
| Bowman 2007 | Focus not on anxiety |
| Brozowski & Hall 2010 | Focus not on childhood sexual abuse |
| de Abreu et al. 2009 | Focus not on anxiety and childhood sexual abuse |
| Desrochers et al. 2008 | Critical review; Focus not on anxiety and childhood sexual abuse |
| Dillon et al. 2013 | Focus not on childhood sexual abuse |
| Diseth 2005 | Focus not on anxiety – overview |
| Dvir et al. 2014 | Review, not systematic review or meta-analysis |
| Fang et al. 2015 | Systematic review; Focus not on anxiety or childhood sexual abuse |
| Fliege et al. 2009 | Systematic review; Focus not on anxiety |
| Gillies et al. 2013 | Review; Focus not on anxiety |
| Gough & Bell 2005 | Focus is on intervention - not about causation |
| Grad et al. 2014 | Review; Focus not on anxiety |
| Halfon et al. 2013 | Review; Focus not on anxiety |
| Hamner & Robert 2005 | Review; Focus is on intervention - not about causation |
| Hassan & Ali 2011 | Literature review; Focus not on childhood sexual abuse |
| Hillberg et al. 2011 | Systematic review; Focus is on methodology quality – not about causation |
| Hyde 2007 | Not a review, systematic review, or meta-analysis |

| | |
|---|---|
| Jacobson & Gould 2007 | Critical review; Focus not on anxiety and childhood sexual abuse |
| Klaus 2010 | Focus not on anxiety |
| Lalor & McElvaney 2010 | Focus not on anxiety |
| Latthe et al. 2006 | Systematic review; Focus not on anxiety |
| Macdonald et al. 2012 | Focus is on intervention - not about causation |
| Malon 2010 | Focus not on anxiety |
| Matheson et al. 2013 | Systematic meta-analysis; Focus not on anxiety |
| Nunes et al. 2012 | Meta-analysis; Focus is on perpetrators of sexual abuse not victims |
| Olatunji et al. 2010 | Meta-analysis; Focus not on childhood sexual abuse and causation |
| Panagakis 2012 | Dissertation |
| Pattison & Harris 2006 | Review; Focus is on intervention - not about causation |
| Regehr et al. 2013 | Systematic review; Focus is on intervention - not about causation; also adult rape not childhood sexual abuse |
| Retz-Junginger et al. 2014 | Focus not on anxiety |
| Rhodes 2015 | Focus not on anxiety |
| Richa et al. 2014 | Focus not on anxiety or childhood sexual abuse |
| Sanchez-Meca et al. 2011 | Meta-analysis; Focus is on intervention - not about causation |
| Schmidt et al. 2013 | Focus not on childhood sexual abuse |
| Seto & Lalumiere 2010 | Meta-analysis; Focus is on perpetrators of sexual abuse not victims |
| Standardisierte et al. 2012 | Focus not on anxiety or causation of childhood sexual abuse |
| Steine et al. 2012 | Systematic review; Focus not on anxiety |
| Ventegodt et al. 2006 | Review; Focus not on anxiety or childhood sexual abuse |
| Vitzthum et al. 2009 | Focus not on childhood sexual abuse |
| Walsh et al. 2015 | Review; Focus is on intervention and prevention |
| Wigham et al. 2011 | Systematic review; Focus not on anxiety or childhood sexual abuse |
| Wilen 2015 | Systematic review and meta-analysis; Focus is on psychosocial intervention – not about causation |
| Zlotnik 2014 | Meta-analysis; Focus not on causation and anxiety |

## 11. Appendix 3: Heterogeneity and the $I^2$ statistic

Heterogeneity is the variation between the results of a set of studies. It can be clinical, methodological and/or statistical. Clinical heterogeneity can be caused by differences between the studies with respect to participants, interventions, and/or outcome.

Methodological heterogeneity can be caused by differences between studies regarding design and/or conduct e.g. blinding, allocation concealment etc.

Statistical heterogeneity is the excessive variation in the results of studies above that expected by chance. Statistical heterogeneity is identified graphically and by using a statistical test e.g. the "$I^2$" statistic.

The degree of heterogeneity measured by the $I^2$ statistic assists determination of whether a meta-analysis is appropriate and, if so, what model to use in pooling the results.

| $I^2$ statistic | Suggested interpretation from Matheson (2013) |
|---|---|
| 0-40% | Might not be important |
| 50-75% | May be important |
| >75% | Should be regarded as considerable |

## 12. Appendix 4: Bradford Hill's Criteria of Causation

A suggested guide to assessing the likelihood of causation

- **Strength of the association**: A small association does not mean that there is not a causal effect, though the larger the association, the more likely that it is causal.

- **Consistency of the association**: Consistent findings observed by different persons in different places with different samples strengthens the likelihood of an effect.

- **Specificity**: Causation is likely if a very specific population at a specific site and disease with no other likely explanation. The more specific an association between a factor and an effect is, the bigger the probability of a causal relationship.

- **Temporality**: The effect has to occur after the cause (and if there is an expected delay between the cause and expected effect, then the effect must occur after that delay).

- **Biological gradient**: Greater exposure should generally lead to greater incidence of the effect. However, in some cases, the mere presence of the factor can trigger the effect. In other cases, an inverse proportion is observed: greater exposure leads to lower incidence.

- **Plausibility:** A plausible mechanism between cause and effect is helpful (but Hill noted that knowledge of the mechanism is limited by current knowledge).

- **Coherence**: Coherence between epidemiological and laboratory findings increases the likelihood of an effect. However, Hill noted that "... lack of such [laboratory] evidence cannot nullify the epidemiological effect on associations".

- **Experiment**: "Occasionally it is possible to appeal to experimental evidence".

- **Analogy**: The effect of similar factors may be considered.

# 13. References

[4] Amado, B.G., Arce, R., & Herraiz, A. (2015). Psychological injury in victims of child sexual abuse: a meta-analytic review. *Psychological Intervention*, *24*, 49-62.

Barth, J., Bermetz, L., Heim, E., Trelle, S., & Tonia, T. (2013). The current prevalence of child sexual abuse worldwide: a systematic review and meta-analysis. *International journal of public health, 58*(3), 469-483.

Briere, J. N., & Elliott, D. M. (1994). Immediate and long-term impacts of child sexual abuse. *The future of children*, 54-69.

Browne, A., & Finkelhor, D. (1986). Impact of child sexual abuse: a review of the research. *Psychological bulletin, 99*(1), 66.

[3] Carr, C.P., Martins, C.M., Stingel, A.M., Lemgruber, V.B., & Juruena, M.F. (2013). The role of early life stress in adult psychiatric disorders: a systematic review according to childhood trauma subtypes. *J Nerv Ment Dis, 201*(12), 1007-1020.

Chaffin, M., Wherry, J. N., & Dykman, R. (1997). School age children's coping with sexual abuse: Abuse stresses and symptoms associated with four coping strategies. *Child abuse & neglect, 21*(2), 227-240.

Chen, L.P., et al. (2010). Sexual abuse and lifetime diagnosis of psychiatric disorders: systematic review and meta-analysis. *Mayo Clin Proc* 2010, *85*(7),618-29.

DynaMed. 2014.

Fergusson, D. M., McLeod, G. F., & Horwood, L. J. (2013). Childhood sexual abuse and adult developmental outcomes: Findings from a 30-year longitudinal study in New Zealand. *Child abuse & neglect, 37*(9), 664-674.

Heim, C., Shugart, M., Craighead, W. E., & Nemeroff, C. B. (2010). Neurobiological and psychiatric consequences of child abuse and neglect. *Developmental psychobiology, 52*(7), 671-690.

Hill, A.B. (1965). The environment and disease: association or causation? *Proc R Soc Med, 58*, 295-300.

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Chatterji, S., Lee, S., Ormel, J., . . . Wang, P. S. (2009). The global burden of mental disorders: an update from the WHO World Mental Health (WMH) surveys. *Epidemiologia e psichiatria sociale, 18*(01), 23-33.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the

National Comorbidity Survey Replication. *Archives of general psychiatry, 62*(6), 593-602.

Leclerc, B., & Wortley, R. (2015). Predictors of victim disclosure in child sexual abuse: additional evidence from a sample of incarcerated adult sex offenders. *Child abuse & neglect, 43*, 104-111.

[1] Lindert, J., von Ehrenstein, O.S., Grashow, R., Gal, G., Braehler, E., & Weisskopf, M.G. (2014). Sexual and physical abuse in childhood is associated with depression and anxiety over the life course: systematic review and meta-analysis. *Int J Public Health, 59*, 359-372.

[2] Maniglio, R. (2013). Child Sexual Abuse in the Etiology of Anxiety Disorders A Systematic Review of Reviews. *Trauma, Violence, & Abuse, 14*(2), 96-112.

[5] Martinez, W., Polo, A.J.,& Zelic, K.J. (2014). Symptom variation on the trauma symptom checklist for children: a within-scale meta-analytic review. *Journal of Traumatic Stress, 27*, 655-663.

Moffitt, T.E., et al. (2007). Generalized anxiety disorder and depression: childhood risk factors in a birth cohort followed to age 32. *Psychol Med 37*(3):441–452

Neumann, D.A., Houskamp, B.M., Pollock, V.E., & Briere, J. (1996). The long-term sequelae of childhood sexual abuse in women: A meta-analytic review. *Child Maltreat, 1*, 6–16.

Olatunji, B. O., Cisler, J. M., & Tolin, D. F. (2007). Quality of life in the anxiety disorders: a meta-analytic review. *Clinical psychology review, 27*(5), 572-581.

Paolucci, E. O., Genuis, M. L., & Violato, C. (2001). A meta-analysis of the published research on the effects of child sexual abuse. *The Journal of psychology, 135*(1), 17-36.

Pereda, N., Guilera, G., Forns, M., & Gómez-Benito, J. (2009). The international epidemiology of child sexual abuse: A continuation of Finkelhor (1994). *Child abuse & neglect, 33*(6), 331-342.

Rind, B., Tromovitch, P., & Bauserman, R. (1998). A meta-analytic examination of assumed properties of child sexual abuse using college samples. *Psychol Bull 124*(1):22–53

Spaccarelli, S. (1994). Stress, appraisal, and coping in child sexual abuse: a theoretical and empirical review. *Psychological bulletin, 116*(2), 340.

Tremblay, C., Hébert, M., & Piché, C. (1999). Coping strategies and social support as mediators of consequences in child sexual abuse victims. *Child abuse & neglect, 23*(9), 929-945.

Whiffen, V. E., & MacIntosh, H. B. (2005). Mediators of the link between childhood sexual abuse and emotional distress a critical review. *Trauma, Violence, & Abuse, 6*(1), 24-39.