

# Childhood Physical and Sexual Violences as Potential Factors of Post Traumatic Stress Disorder: A Meta-Analysis

Fadila Alfiasari<sup>1)</sup>, Didik Tamtomo<sup>2)</sup>, Hanung Prasetya<sup>3)</sup>

<sup>1)</sup>Masters Program in Public Health, Universitas Sebelas Maret

<sup>2)</sup>Faculty of Medicine, Universitas Sebelas Maret

<sup>3)</sup>Study Program of Acupuncture, Health Polytechnics, Ministry of Health Surakarta

## ABSTRACT

**Background:** WHO states that as many as 300 million children have experienced physical punishment or psychological violence. These traumatic events can cause Post Traumatic Stress Disorder (PTSD) which has an impact on the lives of victims of physical and sexual violence. The purpose of this study was to analyze and estimate the average influence of physical and sexual violence in childhood on the incidence of Post Traumatic Stress Disorder (PTSD) using a meta-analysis study.

**Subjects and Method:** This research is a systematic review and meta-analysis with the selection of PRISMA flow diagrams. Population= adults aged >18 years. Intervention= experience of physical and sexual violence as children. Comparison= no experience of physical and sexual violence as children. Outcome= PTSD. Article searches through journal databases include: Pubmed, Google Scholar, Science Direct, Researchgate and Springerlink. The articles used in this study are articles that have been published from 2000-2022. The keywords used in the database are "Child Physical Abuse"[tw] OR "Childhood Physical Abuse"[tw] OR "Child Maltreatment"[tw] OR "Physical Violence"[tw] OR "Physical Abuse"[Mesh] OR "Child Abuse"[Mesh] AND "Sexual Abuse"[tw] OR "Child Sexual Molestation"[tw] OR "Child Abuse, Sexual"[Mesh] OR "Sexual Trauma"[Mesh] AND "Post-Traumatic Stress Disorder"[tw] OR "Posttraumatic Stress Disorder"[tw] OR "Post-Traumatic Neuroses"[tw] OR "Post-traumatic Neuroses"[tw] OR "PTSD"[tw] OR "Stress Disorders, Post-Traumatic"[Mesh]. Inclusion criteria included full-text articles with a cross-sectional study design. The analysis used multivariate logistic regression with adjusted Odds Ratio and published in English. Articles that met the requirements were analyzed using the Revman 5.4 application.

**Results:** Meta-analysis of 10 articles showing for childhood physical abuse (aOR=1.87; 95% CI=1.47 to 2.37; p<0.001) and childhood sexual violence (aOR=2.67; 95% CI=2.02 up to 3.52; p<0.001).

**Conclusion:** Experience of physical and sexual violence in childhood increases the risk of developing Post Traumatic Stress Disorder as an adult.

**Keywords:** Post Traumatic Stress Disorder, physical violence, sexual violence, meta-analysis

## Correspondence:

Fadila Alfiasari. Masters Program in Public Health, Universitas Sebelas maret. Jl. Ir. Sutami 36A, Surakarta 57126, Jawa Tengah, Indonesia. Email: alfiasari3108@gmail.com. Mobile: +62852353588-82.

## Cite this as:

Alfiasari F, Tamtomo D, Prasetya H (2023). Childhood Physical and Sexual Violences as Potential Factors of Post Traumatic Stress Disorder: A Meta-Analysis. J Epidemiol Public Health. 08(02): 191-204.

<https://doi.org/10.26911/jepublichealth.2023.08.02.04>.



Journal of Epidemiology and Public Health is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.

## BACKGROUND

Post Traumatic Stress Disorder (PTSD) is a psychiatric disorder that occurs in people who have experienced/witnessed traumatic

events such as natural disasters, severe accidents, terrorism, war/battles, rape, death threats, sexual violence, and serious injuries to the body (APA, 2020). PTSD epidemiolo-

gy globally is found in as many as 5-10% (Supriyanto, 2021). The etiology of PTSD can occur due to traumatic events in the form of life-threatening accidents, wars, certain diseases or medical conditions and physical violence, sexual violence, and also other violence in childhood (Supriyanto, 2021).

Findings uploaded by WHO (2022) stated that three out of four children (300 million children) aged 2-4 years experienced physical punishment and/or psychological violence by their parents and caregivers. One in five women and one in 13 men reported experiencing sexual abuse/violence as children (ages 0-17 years). As many as 120 million women under the age of 20 experience forced sexual contact. The consequences of child abuse in any form range from lifelong physical and mental health problems (eg depression, anxiety, PTSD, etc.) to social and employment impacts which can slow down a country's economic and social development. Another impact is behavioral deviations during adulthood which can be passed from one generation to the next.

The application system for recording and reporting violence against women and children through the PPA SYMPHONY (Online Information System for the Protection of Women and Children) made by the Indonesian government through the Ministry of Women and Children Protection, presents data input from January 1, 2022 to the present, that cases there have been 17,813 cases of violence, with 16,346 victims women and 2,860 men. Ironically, 56.6% of the victims of this violence are children. The highest category of victims based on age was 13-17 years old with 6,261 cases (31.5%). A child is someone who is not yet 18 years old, including children who are still in the womb (Presiden Republik Indonesia, 2014). Meanwhile, the types of violence that dominated were sexual violence with 7,626 cases, Phy-

sical violence with 6,184 cases, and psychological violence with 5,893 cases. The number of cases based on the place of occurrence was 11,044 cases in the household. In addition, the number of victims based on the scene of the incident was 11,899 also in the household (KemenPPPA, 2022).

The National Center for PTSD says that seven or eight out of 100 people experience PTSD at some point in their lives. Women are more likely to experience PTSD than men and also the influence of genes can cause some people to experience PTSD than others (NIMH, 2022). The prevalence rate of PTSD in 21 countries due to witnessing violence was 21.8%, experienced interpersonal violence 18.8%, accidents 17.7%, war exposure 16.2% and trauma to loved ones as much as 12.5% (WHO, 2013).

Research conducted by Chang et al. (2019) found that an individual who experienced adverse childhood experiences (ACEs) had a 1.32 risk of developing PTSD as an adult. The results of research conducted by Liu et al. (2020) with a total number of respondents of 898 people, it was found that the average age of respondents experiencing mental disorders was 24.5 with a proportion of ages 18-21 of 28.6%, ages 22-26 of 34.7%, and ages 26-30 as much as 36.6%. In addition, as many as 31.8% had a high level of experiencing PTSD with PCL-C scores  $\geq 45$ .

Based on case descriptions regarding PTSD above, researchers are interested in knowing the relationship between physical and sexual violence in childhood to the occurrence of PTSD. this study aimed to analyze and estimate the average influence of physical and sexual violence in childhood on the incidence of Post Traumatic Stress Disorder (PTSD). The available data will be analyzed using a meta-analysis by synthesizing the study results to minimize bias.

## SUBJECTS AND METHOD

### 1. Study Design

This study used a systematic review study design and meta-analysis with analysis guidelines adapted to the PRISMA flow chart guidelines method. Research data was searched through several database sources, namely Pubmed, Google Scholar, Science Direct, Researchgate, and Springer in the 2000-2022 period with the keywords "Child Physical Abuse"[tw] OR "Childhood Physical Abuse"[tw] OR "Child Maltreatment"[tw] OR "Physical Violence"[tw] OR "Physical Abuse"[Mesh] OR "Child Abuse"[Mesh] AND "Sexual Abuse"[tw] OR "Child Sexual Molestation"[tw] OR "Child Abuse, Sexual"[Mesh] OR "Sexual Trauma"[Mesh] AND "Post-Traumatic Stress Disorder"[tw] OR "Post-traumatic Stress Disorder"[tw] OR "Post-Traumatic Neuroses"[tw] OR "Post-traumatic Neuroses"[tw] OR "PTSD"[tw] OR "Stress Disorders, Post-Traumatic"[Mesh].

### 2. Steps of Meta-Analysis

The meta-analysis was carried out through 5 steps as follows:

- 1) Formulate research questions using the PICO model
- 2) Search for primary study research articles from online databases such as Pubmed, Google Scholar, Science Direct, Research gate, and Springer.
- 3) Conduct screening and quality assessment of primary study articles.
- 4) Extract and analyze data into the RevMan 5.3 application.
- 5) Interpret the results and conclusions.

### 3. Inclusion Criteria

This study has inclusion criteria, including full text paper articles using observational methods, namely cross-sectional studies, multivariate analysis with adjusted odds ratio (aOR), interventions in the form of experiences of physical and sexual violence in childhood, research subjects are adults age >

18 years and the outcome is Post Traumatic Stress Disorder.

### 4. Exclusion Criteria

This study has exclusion criteria, including: articles published before 2000, respondents aged <18 years, primary studies that have been meta-analyzed, and articles published in other than English and Indonesian.

### 5. Operational Definition of Variables

The formulation of the research problem was carried out by considering the eligibility criteria determined using PICO, namely: Population: adults > 18 years, Intervention: experience of physical and sexual violence in childhood, Comparison: not experiencing experience of physical and sexual violence in childhood-children and Outcome: Post-Traumatic Stress Disorder (PTSD).

**Physical Violence** is an event that results in actual or potential physical harm from the misuse of a normal interaction by parents, people who are trusted and people who have power.

**Sexual** violence is a type of sexual assault that starts in the form of indecent spoken or written words, showing genitals (exhibitionism), touching body parts that are forbidden to hold (breasts, genitals, buttocks), to acts of oral sex and sexual intercourse (sexual intercourse).

**Post Traumatic Stress Disorder** is a psychiatric disorder that occurs in people who have experienced/witnessed traumatic events such as natural disasters, severe accidents, terrorism, war/battles, rape, death threats, sexual violence, and serious injuries to the body.

### 6. Study Instruments

Assessment of the quality of research articles was carried out using the Critical Appraisal of A Cross Sectional Study (CEBM, 2014).

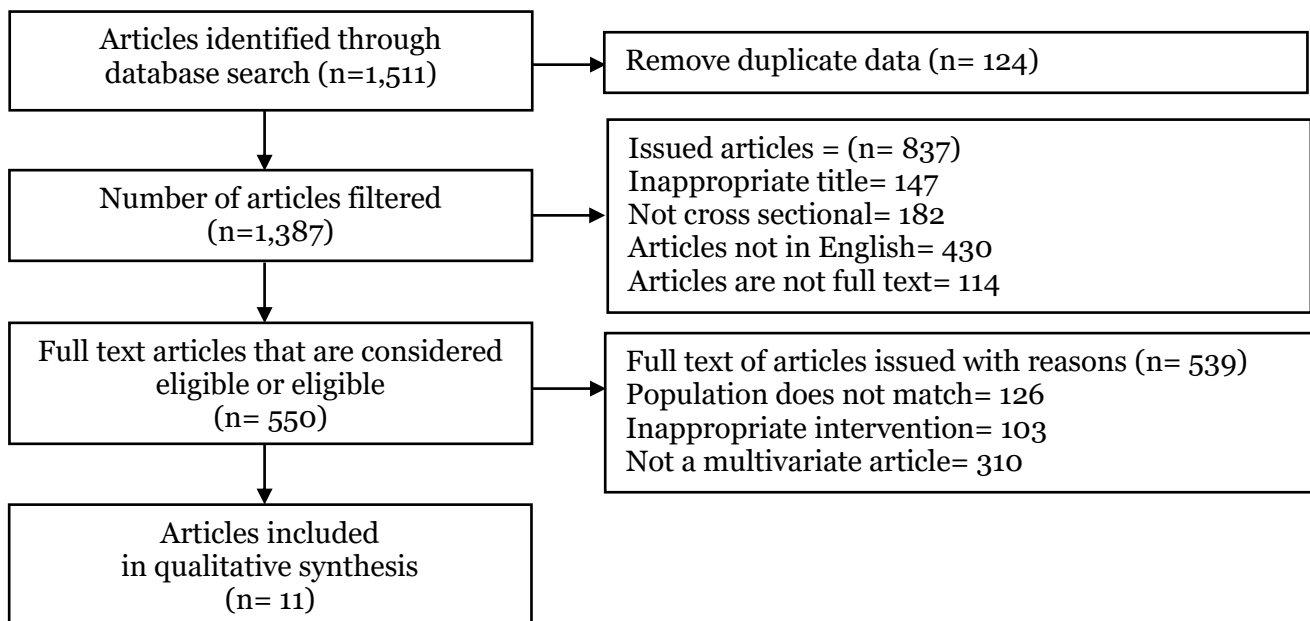
### 7. Data Analysis

Data analysis in this study was carried out using the Review Manager application (Rev-

Man 5.4). Data were analyzed based on variations between studies by determining the use of cross-sectional analysis models. In this study the value of  $I^2$  is used to quantify dispersion. The results of data analysis are the effect size values of the research heterogeneity which will be interpreted in the form of forest plots and funnel plots.

## RESULTS

Primary studies related to physical and sexual violence as a potential factor in the occurrence of Post Traumatic Stress Disorder show that there were 11 articles. 1 article from Asia (China), 1 article is from Australia (Australia), 1 article from Europe (Southern Sweden) and 8 articles from the Americas (Canada, Peru, and Columbia).

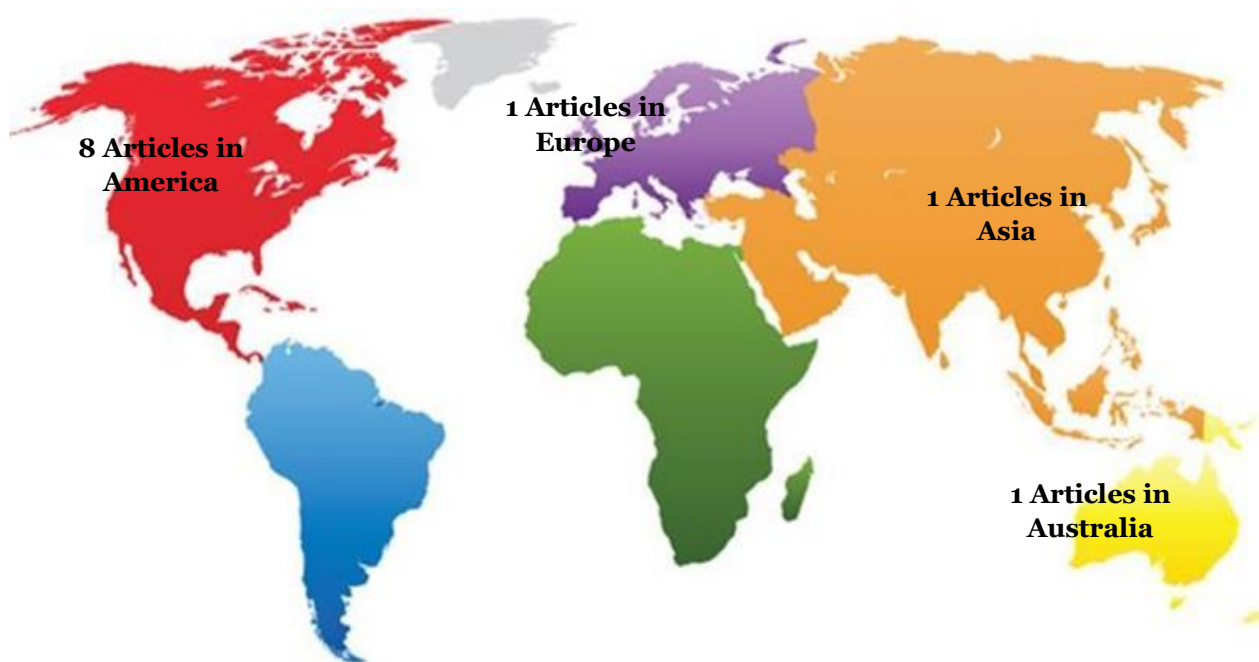


**Figure 1. PRISMA Flowchart**

The search for articles was carried out using a database based on the PRISMA flow chart, which can be seen in Figure 1. From the results, 11 articles met the requirements, consisting of 2 articles that included interventions for physical violence in childhood, 1 article that included interventions for sexual violence in childhood. -children and 8 articles listed two interventions namely physical and sexual violence in childhood. Furthermore, the researchers assessed the quality of

the articles using the Critical Appraisal Skills Program (CASP). The results show that physical and sexual violence in childhood has a risk for the occurrence of Post Traumatic Stress Disorder.

The quality of the research was then assessed using the Assessment of the quality of this research using the Critical Appraisal Tools of Cross-Sectional Study published by CEBMa (Center for Evidence-Based Medicine) which can be seen in Table 1.



**Figure 2. Map of the primary study article area of physical and sexual violence in childhood on post traumatic stress disorder**

**Table 1. Results of the quality assessment of the cohort study on the effect of vaccination on COVID-19 infection**

Author (Year)	Question Criteria												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Afifi et al. (2014)	1	1	0	0	1	1	1	1	1	1	1	1	10
Chang et al. (2019)	1	1	1	0	1	1	1	1	1	0	1	1	10
Coker et al. (2005)	1	1	1	1	0	1	1	1	1	1	1	1	11
Cogle et al. (2010)	1	1	1	0	1	1	1	1	1	0	1	1	10
Fetzner et al. (2011)	1	1	1	1	1	1	1	1	1	1	1	1	12
Nasir et al. (2021)	1	1	1	1	1	0	1	1	1	0	1	1	10
Sixto E et al. (2017)	1	1	1	0	1	1	1	1	1	0	1	1	10
Scott et al. (2018)	1	1	1	0	0	1	0	1	1	1	1	1	9
Sugaya et al. (2012)	1	1	1	1	1	1	1	1	1	1	1	1	12
Turner et al. (2017)	1	1	1	0	1	1	1	1	1	1	1	1	11
Wangel et al. (2016)	1	1	1	1	1	1	1	1	1	1	1	1	12

**Description of the question criteria:**

- 1 = Does the study address clearly focused questions/problems?
- 2 = Is the research method (research design) appropriate to answer the research questions?
- 3 = Is the method of selecting research subjects clearly stated?
- 4 = Can the method of determining the sample explain selection bias?
- 5 = Are the subjects in the sample representative in relation to the population to which the findings will be referred?
- 6 = Was the sample size based on pre-study statistical power considerations?
- 7 = Was a satisfactory response rate achieved?
- 8 = Is the measurement (questionnaire) valid and reliable?



- 9 = Was statistical significance assessed?  
10 = Are confidence intervals given for the main results?  
11 = Could there be confounding factors that have not been taken into account?  
12 = Are the results applicable to your research?

#### Answer score description:

- 0 = No  
1 = Yes

Based on the assessment of study quality using the Critical Appraisal Tools of Cross-Sectional Study published by CEBMa (Center for Evidence-Based Medicine) as shown

in Table 1, 11 articles included in the quantitative synthesis meta-analysis were articles in good category.

**Table 2. Summary of primary studies with cross-sectional design with each PICO (N= 66,014)**

Author (Year)	Country	Total Sample	P	I	C	O
Wangel et al. (2016)	Sweden	1,003	Female >18 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Cogle et al. (2010)	USA	4,141	Adults >18 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Fetzner et al. (2011)	Canada	14,061	Adults >18 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Nasir et al. (2021)	Australia	544	Adults >18 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Sixto et al. (2017)	peruvian	2,928	Female 18-49 years (16 weeks gestation)	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Sugaya et al. (2012)	USA	3,097	Adults >18 years	Experiencing physical violence	No physical violence	PTSD
Afifi et al. (2014)	Canada	23,395	Adults >18 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Turner et al. (2017)	USA	14,564	Male >20 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Chang et al. (2019)	China	1,501	Adults 18-59 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Coker et al. (2005)	Colombia	369	Female >18 years	Experiencing physical violence and sexual violence	Not Experiencing physical violence and sexual violence	PTSD
Scott et al. (2018)	USA	411	Female >18 years	Experiencing sexual violence	Not experiencing sexual violence	PTSD

**Table 3. Adjusted Odds Ratio (aOR) in a study of physical violence in childhood on post traumatic stress disorder (N= 66,014)**

Studies	aOR	95%CI	
		Lower Limit	Upper Limit
Wangel et al. (2016)	4.58	2.77	7.60
Cogle et al. (2010)	2.06	1.59	2.66
Fetzner et al. (2011)	1.26	0.99	1.61
Nasir et al. (2021)	2.34	1.08	5.10
Sixto et al. (2017)	4.88	2.49	9.57
Sugaya et al. (2012)	1.55	1.32	1.84
Afifi et al. (2014)	1.2	0.8	1.9
Turner et al. (2017)	2.33	1.84	2.94
Chang et al. (2019)	1.33	1.01	1.73
Coker et al. (2005)	1.2	0.7	2.0
Wangel et al. (2016)	4.58	2.77	7.60

**Table 4. Adjusted Odds Ratio (aOR) in studies of sexual violence in childhood on post traumatic stress disorder**

Studies	aOR	95%CI	
		Lower Limit	Upper Limit
Wangel et al. (2016)	3.95	2.40	6.49
Cogle et al. (2010)	2.83	2.19	3.65
Fetzner et al. (2011)	1.47	1.11	1.94
Nasir et al. (2021)	2.45	0.94	6.42
Sixto et al. (2017)	6.77	3.04	15.06
Scott et al. (2018)	1.9	1.0	3.7
Afifi et al. (2014)	2.9	2.0	4.3
Turner et al. (2017)	2.33	1.25	4.37
Chang et al. (2019)	2.84	1.71	4.73

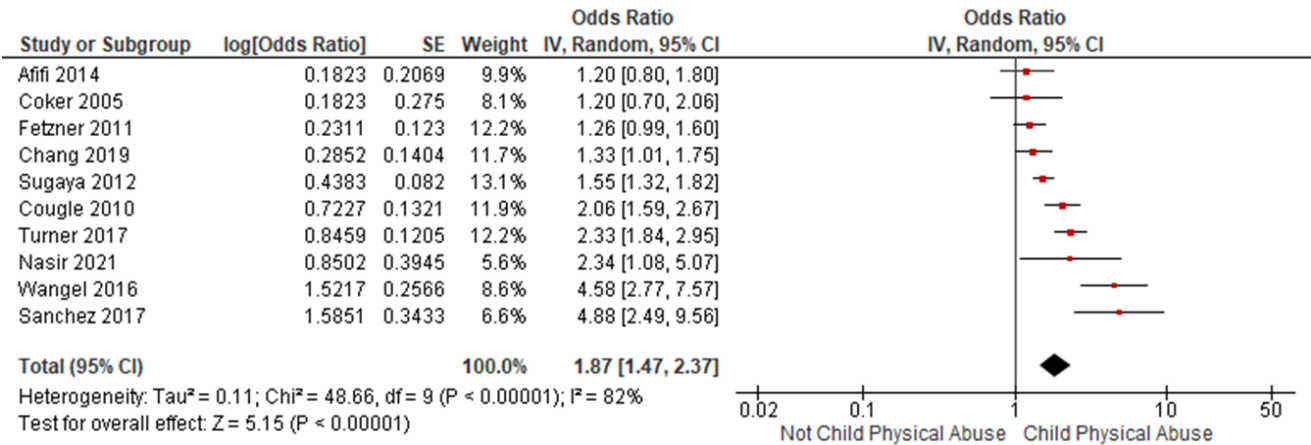
Interpretation of the meta-analysis process can be seen through the forest plot. Figure 3 shows that there is an effect of physical violence in childhood on the occurrence of PTSD and this effect is statistically significant. Adults who experienced physical violence during childhood had a risk of experiencing PTSD 1.87 times compared to those who did not experience physical violence during childhood (aOR= 1.87; 95% CI=1.47 to 2.37;  $p<0.001$ ). The forest plot showed high heterogeneity of effect estimates between studies ( $I^2=82\%$ ;  $p<0.001$ ). Thus the calculation of the average effect estimate uses the Random Effect Model (REM).

A funnel plot is a plot that describes the estimated effect size of each study against its estimated accuracy which is usually the standard error. Figure 4 shows a distribution of effect estimates that are more or less symmetrical to the right and left of the mean vertical line, thus not indicating publication bias.

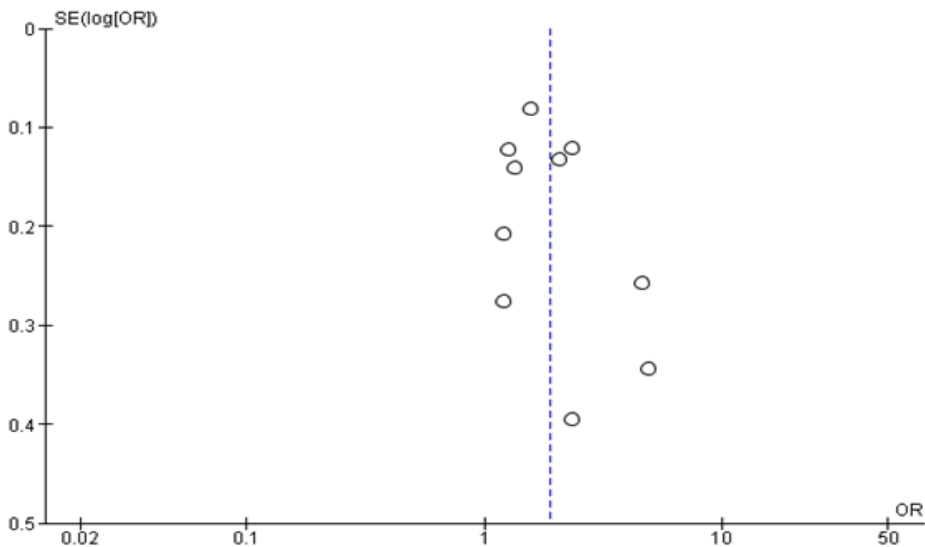
Interpretation of the results of the meta-analysis process can be seen through the forest plot. Figure 5 shows that there is an effect of sexual violence in childhood on the risk of PTSD and this effect is specifically significant. Adults who experienced sexual violence in childhood had a risk of experiencing PTSD 2.67 times compared to

those who did not experience sexual violence in childhood (aOR=2.67; 95% CI= 2.02 to 3.52;  $p<0.001$ ). The forest plot also showed high heterogeneity of effect esti-

mates between studies ( $I^2=68\%$ ;  $p<0.001$ ). Thus calculating the average estimated effect using the Random Effect Model (REM) approach.



**Figure 3. Forest plot of physical violence in childhood on the occurrence of Post Traumatic Stress Disorder**



**Figure 4. Funnel plot of physical violence in childhood on the occurrence of post traumatic stress disorder**

A funnel plot is a plot that describes the estimated effect size of each study against its estimated accuracy which is usually the standard error. Figure 6 shows a more or

less symmetrical distribution of effect estimates to the right and left of the vertical mean line, thus not indicating publication bias.



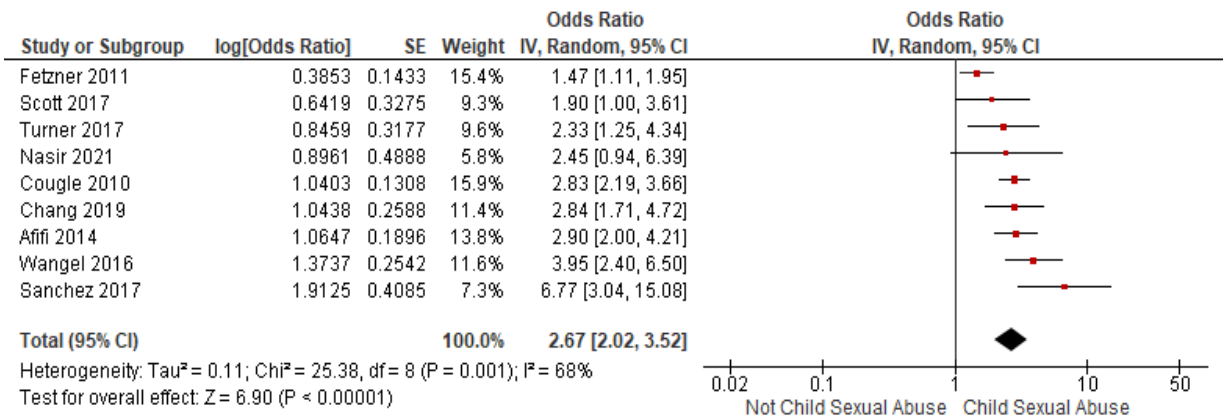


Figure 5. Forest plot of sexual violence in childhood on the occurrence of post traumatic stress disorder

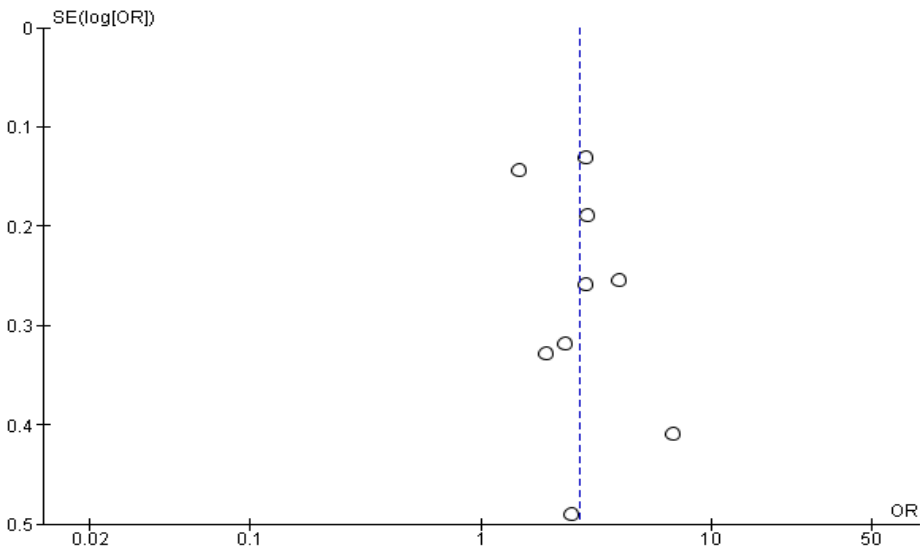


Figure 6. Funnel plot of physical violence in childhood on the occurrence of post traumatic stress disorder

DISCUSSION

This systematic review and meta-analysis study examines physical and sexual violence in childhood as a potential factor in the occurrence of Post Traumatic Stress Disorder (PTSD). The independent variables in this study were physical and sexual violence during childhood while the dependent variable studied was Post Traumatic Stress Disorder (PTSD). The intervention was designed with the aim of reducing PTSD rates in adults >18 years of age with a cross-sectional study design. Research on Post Traumatic Stress Disorder (PTSD) is considered impor-

tant because the prevalence of PTSD in adults is still high throughout the world, there are even several countries that have not paid more attention to this mental health problem, so this case has become a global problem in all countries, both developed and developing countries. nor growing.

In this systematic review, 11 intervention studies were identified from four continents of which eight articles were from the Americas and one article each from Asia, Australia and Europe from 2000 to 2022. Systematic review research and meta-

analyses This study uses research that has controlled for confounding factors or co-founding factors which can be seen in the previous primary study inclusion criteria used, namely by including the results of multivariate analysis in the form of adjusted odds ratio (aOR) values. Confounding factor is a combination of estimation of the relationship between exposure and disease that is examined by other factors that are related to both disease and exposure. For a variable to be called a confounder, a covariate must be a risk factor for disease in the unexposed base population that is not affected by exposure. The point is that the confounder must be a risk factor for a disease. Confounding factors affect the relationship or effect of exposure to the occurrence of disease which is estimated by the study not the same as the relationship or effect that actually occurs in the target population or the study results are invalid (Murti, 2018).

Data processing regarding physical and sexual violence in childhood on the incidence of PTSD in this study used the Review Manager 5.4 application with the generic inversion of variance method. This method is a method used in analyzing data in the form of level data such as time to event data, hazard ratios, ordinal scales, adjusted estimates and average differences or average ratios. The results of the systematic review and meta-analysis are presented in the form of forest plots and funnel plots. A forest plot is a diagram that shows an overview of the information from each study investigated in the meta-analysis and estimates of the overall results, in that the forest plot also visually displays the amount of variation (heterogeneity) between study results. The funnel plot shows the relationship or relationship between the effect size of the study and the sample size or standard error of the effect size of the various studies studied (Murti, 2018). In this study there is no publication

bias depicted in the funnel plot where the distribution of effect estimates is more or less symmetrical to the right and left of the vertical mean line.

### **1. Childhood Physical Abuse with PTSD**

There are 10 articles with a cross-sectional study design as a source of meta-analysis of physical violence in childhood with PTSD. In this study it was reported that there was high heterogeneity between experiments ( $I^2=82\%$ ;  $p<0.001$ ) so that the Random Effect Model (REM) was used. Based on the results of analysis from primary research, this high heterogeneity occurs because there is variation or diversity between populations, which can be seen from the different number of samples between studies, as well as different genders (there are studies that only select men, only women, and mix between male and female). The results of a meta-analysis on the forest plot showed that adults who experienced physical violence during childhood had a 1.87 times the risk of developing PTSD compared to adults who did not experience significant physical violence during childhood (aOR=1.87; 95% CI = 1.47 to 2.37;  $p<0.001$ ).

The results of this study are supported by another study conducted by Strauss et al., (2020) in Australia by studying trans-gender youth (age 14-25 years) which stated that young people with experiences of physical violence in childhood experienced PTSD is at risk 3.56 times compared to youth who did not experience physical violence in childhood (aOR=3.56; 95% CI= 2.41 to 5.24;  $p<0.001$ ). Another study conducted by Subica (2013) in California USA with a sample of 172 adults aged 18-84 years stated that adults who experienced physical violence during childhood had a 2.64 times greater risk of experiencing PTSD compared to adults who did not experience physical violence. in childhood (OR= 2.64; 95% CI =

1.36 to 5.13;  $p < 0.010$ ), but in this study confounding factors were not taken into account, so there were only OR values.

Another study conducted by Fetzner et al., (2011) with a sample of 34,653 adults in the United States and Columbia with ages over 18 years collected from data from The National Epidemiologic Survey of Alcohol and Related Conditions (NESARC) stated that adults with experienced physical violence during childhood had a 1.26 times higher risk of experiencing PTSD compared to those who did not experience physical violence during childhood ( $aOR = 1.26$ ; 95% CI = 0.99 to 1.61;  $p < 0.001$ ). Research conducted by Sixto et al., (2017) also stated that pregnant women aged 18-49 years (gestational age 16 weeks) who experienced physical violence during childhood had a risk of developing PTSD by 4.88 times compared to those who did not experience physical violence in childhood ( $aOR = 4.88$ ; 95% CI = 2.49 to 9.57;  $p < 0.001$ ).

Findings uploaded by WHO (2022) stated that three out of four children (300 million children) aged 2-4 years experienced physical punishment and/or psychological violence by their parents and caregivers. The effects of physical violence are falling sick, injured or dangerous injuries and loss or weakening of organ abilities, sensory damage, to disability. Children who experience physical violence have difficulty socializing with their peers. They also feel that they have no self-esteem, and always blame themselves for the incident and feel that they have to keep what happened to them a secret. Individuals who experience violence also become aggressive and also lose their "reaction" to violent events that happen to them, for example, they will not care or feel numb when they are beaten. They will also stop dreaming of achieving the future because they feel hopeless. Many studies also state that children who are exposed to

physical threats and aggressive actions by parents or caregivers can develop post-traumatic stress reactions and other psychological problems such as aggressive behavior, depression, and anxiety (NCTSN, 2021).

As we all know, the majority of victims of violence are female, as reported in the PPA SIMFONI violence recording and reporting application system, that out of a total of 25,580 cases that came in (as of 1 January 2022 to 23 December 2022) there were 23,227 female victims and 4,243 men (KemenPPPA, 2022). This shows that men have little potential to experience violence. However, research conducted by Turner et al., (2017) states that men can also experience physical violence during their lifetime. The results of this study stated that men aged >20 years with experiences of physical violence in children experienced a 2.33 times the risk of experiencing PTSD compared to those who did not have experiences of physical violence in childhood. ( $aOR = 2.33$ ; 95% CI = 1.84 to 2.94;  $p < 0.001$ ). This research proves that people with both male and female sex can experience physical violence which in turn has the potential to experience PTSD.

## 2. Sexual Violence in Childhood with PTSD

There are 9 articles with a cross-sectional study design as a source of meta-analysis of childhood sexual violence with PTSD. In this study it was reported that there was high heterogeneity between experiments ( $I^2 = 68\%$ ;  $p < 0.001$ ) so that the Random Effect Model (REM) was used. Based on the results of analysis from primary research, this high heterogeneity occurs because there is variation or diversity between populations, which can be seen from the different number of samples between studies, as well as different genders (there are studies that only select men, only women, and mix between male

and female). The results of a meta-analysis on the forest plot showed that adults who experienced sexual violence during childhood had a 2.67 times the risk of developing PTSD compared to adults who did not experience significant sexual violence during childhood (aOR=2.67; 95% CI = 2.02 to 3.52;  $p < 0.001$ ).

The results of this study are in line with research conducted by Afifi et al., (2014) conducted in Canada which stated that an adult who was sexually abused as a child has a 2.9-fold risk of developing PTSD (aOR=2.9; 95% CI=2.0 to 4.3;  $p < 0.001$ ). Research conducted by Cogle et al., (2010) conducted at the United State of America (USA) also stated that adults with experiences of sexual violence as children have a 2.83 times risk of experiencing PTSD compared to adults who have not experienced sexual violence. sexual violence in childhood (aOR=2.83; 95% CI= 2.19 to 3.65;  $p < 0.01$ ). Research by Wang et al., (2016) conducted in Sweden also stated that adults who experienced sexual violence in childhood had a 3.95 times the risk of experiencing PTSD (aOR=3.95; 95%CI= 2.40 to 6.49;  $p < 0.837$ ).

One in five women report experiencing sexual abuse or violence as a child. As many as 120 million women under the age of 20 experience forced sexual contact (WHO, 2022). This statement is in line with research conducted by Aye et al., (2021) in Myanmar on 2,377 adults aged 18-49 years who stated that the prevalence of women with experiences of sexual violence in childhood was higher than that of men ( 13.3% vs. 1.3%). A quarter of the study population had experienced a traumatic event in which 26% reported experiencing PTSD. The PPA SYMPHONY violence recording and reporting application system also stated that out of a total of 25,580 cases (as of 1 January 2022 to 23 December 2022) there were 23,227

female victims and 4,243 male victims (KemenPPPA, 2022).

As we all know, the majority of victims of sexual violence are women, but men also do not rule out the possibility of experiencing incidents of sexual violence during childhood. Research conducted by Turner et al., (2017) states that men aged >20 years with experiences of sexual violence in childhood experience a 2.33 times the risk of experiencing PTSD compared to those who do not have experience of sexual violence in childhood. (aOR=2.33; 95% CI=1.25 to 4.37;  $p < 0.01$ ). WHO (2022) also states that one in 13 men reports experiencing sexual abuse as a child (age 0-17 years).

The conclusion in this meta-analysis study showed that there was an effect of physical violence in childhood on the risk of Post Traumatic Stress Disorder by 1.87 times (aOR=-1.87; 95% CI=1.47 to 2.37;  $p < 0.001$ ). There was an effect of physical violence in childhood on the risk of Post Traumatic Stress Disorder was 2.67 times (aOR=2.67; 95% CI=2.02 to 3.52;  $p < 0.001$ ). The limitation of this study is that there is a language bias because in this study. The selected articles were only in English so that they ignored other languages, the articles analyzed only came from four continents and the majority were in the America. Therefore, the results did not represent the whole world, the articles were subjected to meta-analysis only 11 articles, and there is a search bias because in this study only used 5 databases (Pubmed, Google Scholar, Science Direct, Research gate and Springerlink).

#### **AUTHOR CONTRIBUTION**

Fadila Alfiasari as the main researcher, formulates the problem, collects data, analyzes the data, interprets and concludes the research results. Didik Gunawan Tamtomo and

Hanung Prasetya discussed the contents of the article.

### ACKNOWLEDGEMENT

The researcher would like to thank all parties who have helped in the preparation of this article and also thank the database providers Pubmed, Google Scholar, Science Direct, Research-gate and Springerlink.

### FUNDINGS AND SPONSORSHIP

The study was self-funded.

### CONFLICT OF INTEREST

There is no conflict of interest in this study.

### REFERENCES

- Afifi T, Macmillan H, Boyle M, Tailieu T, Cheung K, Sareen J (2014). Child abuse and mental disorders in Canada. *Cmaj*. 186(9): 700. doi: 10.15-03/cmaj.140314
- APA (2020). What is Posttraumatic Stress Disorder?. American Psychiatric Association.
- Aye W, Lien L, Stigum H, Bjertness E (2021). Childhood abuse and its association with adults' mental health problems: a crosssectional study among men and women in the Yangon Region of Myanmar. *BMJ Open*. 11(11): 1–14. doi:10.1136/bmjopen2020045870.
- Chang X, Jiang X, Mkandarwire T, Shen M (2019). Associations between adverse childhood experiences and health outcomes in adults aged 18–59 years. *PLoS ONE*. 14(2): 1–11. doi: 10.1371/-journal.pone.0211850
- Coker L, Weston R, Creson L, Justice B, Blakeney P (2005). PTSD symptoms among men and women survivors of intimate partner violence: The role of risk and protective factors. *Violence Vict*. 20(6): 625–643. doi: 10.1891/0-8866708.20.6.625.
- Cogle R, Timpano R, SachsEricsson N, Keough E, Riccardi J (2010). Examining the unique relationships between anxiety disorders and childhood physical and sexual abuse in the National Comorbidity SurveyReplication. *Psychiatry Res*. 177(1–2): 150–155. doi: 10.1016/j.psychres.2009.03.008
- Fetzner M, McMillan K, Sareen J, Asmundson G (2011). What is the association between traumatic life events and alcohol abuse/dependence in people with and without PTSD? findings from a nationally representative sample. *Depress Anxiety*. 28(8): 632–638. doi: 10.1002/da.20852
- KemenPPPA (2022). Sistem Informasi Online Perlindungan Perempuan dan Anak (SIMFONI PPA). Available at: <https://kekerasan.kemenpppa.go.id/register/login>
- Liu C, Zhang E, Tin G, Ba W, Hyun S. (2020). Factors associated with depression, anxiety, and PTSD symptoms during the covid19 pandemic: clinical implications for U.S. young adult mental health. *Psychiatry Res*. doi: 10.1016/j.psychres.2020.113172
- Murti B (2018). Prinsip dan metode riset epidemiologi (Ke Lima). Program Studi Ilmu Kesehatan Masyarakat Program Pascasarjana Universitas Sebelas Maret.
- Nasir B, Black E, Toombs M, Kisely S, Gill N, Beccaria G, Kondalsamy-Chennakesavan S, Nicholson G (2021). Traumatic life events and risk of post-traumatic stress disorder among the indigenous population of regional, remote and metropolitan Central-Eastern Australia: a crosssectional study. *BMJ Open*. 11(4): 1–11. doi: 10.1136/bmjopen2020040875



- NCTSN (2021). What is child trauma. National Child Traumatic Stress Network.
- NIMH (2022). PostTraumatic Stress Disorder. National Institute of Mental Health.
- Presiden Republik Indonesia. (2014). Undang-undang No 35 tahun 2014 tentang perlindungan anak. Cell. 3(4): 1–15.
- Scott, Koenen, King, Petukhova, Alonso, Bromet, Bruffaerts, et al. (2018). Post-traumatic stress disorder associated with sexual assault among women in the WHO World Mental Health Surveys. *Psychol. Med*, 48(1), 155–167. doi: 10.1017/S0033291717001593
- Sixto S, Omar P, Diana C, QiuYue Z, Bizu G, Gregory S, Marta R, et al. (2017). Childhood physical and sexual abuse experiences associated with post traumatic stress disorder among pregnant women. *Ann Epidemiol*. 27(11): 716–723. doi: 10.1016/j.annepidem.2017.09.012. Childhood.
- Strauss P, Cook A, Winter S, Watson V, Wright D, Lin A. (2020). Mental health issues and complex experiences of abuse among trans and gender diverse young people: findings from trans pathways. *LGBT Health*. 7(3): 128–136. doi: 10.1089/lgbt.2019.0232
- Subica M (2013). Psychiatric and physical sequelae of childhood physical and sexual abuse and forced sexual trauma among individuals with serious mental illness. *J Trauma Stress*. 26 (3): 588–596. doi: 10.1002/jts.21845.
- Sugaya L, Hasin D, Olfson M, Lin H, Grant F, Blanco C (2012). Child physical abuse and adult mental health: a national study. *J Trauma Stress*. 25 (3): 1–9. doi: 10.1002/jts
- Supriyanto I (2021). Epidemiologi Post Traumatic Stress Disorder (PTSD). *Alomedika*. Available at: <https://www.alomedika.com/penyakit/psikiatri/posttraumaticstressdisorderptsd/epidemiologi>.
- Turner S, Taillieu T, Cheung K, Afifi O. (2017). The relationship between childhood sexual abuse and mental health outcomes among males: Results from a nationally representative United States sample. *Child Abuse Negl*. 66: 64–72. doi: 10.1016/j.ch-ia-bu.2017.01.018.
- Wangel A, Ryding E, Schei B, Östman M, Lukasse M, Temmerman M, Steingrimsdóttir T, et al. (2016). Emotional, physical, and sexual abuse and the association with symptoms of depression and posttraumatic stress in a multiethnic pregnant population in southern Sweden. *Sex Reprod Healthc*. 9: 7–13. doi: 10.1016/j.srhc.2016.04.003
- WHO (2013). New clinical protocol and guidelines to enable effective mental health care for adults and children exposed to trauma and loss. World Health Organization
- WHO (2022). Child Maltreatment. World Health Organization.