

The association of depression and child maltreatments among Indonesian adolescents

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Abstract

Background: Depression is one of the most prevalent emotional mental health problem among adolescents. Mental health problem might be the result of child maltreatment considering their prevalence are increasing simultaneously in Indonesia. The aim of this study is determining the association between depression and history of maltreatment among adolescents.

Methods: An analytic cross-sectional study was conducted to 786 junior high school students of Bandung City, West Java, Indonesia. Subject was selected using two stage cluster sampling. The questionnaire of Children's Depression Inventory (CDI) and ISPCAN Child Abuse Screening Tool (ICAST) were applied to assess depression and history of maltreatment respectively. Depression confirmation was diagnosed by psychiatry based on scored positive in CDI. Data were analyzed using chi-square and multiple regression test.

Results: History of child maltreatment was associated with depressive disorder in adolescents ($p = 0.03$). All dimension of child maltreatment had significant association with depression ($p < 0.05$). Psychological violence had the highest risk factor for the occurrence of depressive disorders (PR = 6.51), followed by violence exposure and physical violence. Sexual violence was not a common dimension of child maltreatment among students. The history of psychological violence had the strongest association with depression, which three times more likely to develop depression (POR = 3.302, $p = 0.004$)

Conclusion: Psychological violence was proven as a strong risk factor in developing depression symptom for adolescents student. Early intervention to prevent maltreatment and its consequences is critical, as well.

Background

Child maltreatment or child abuse is all forms of physical and mental child abuse, sexual abuse, neglect or negligent treatment, commercial or other exploitation, which has a high likelihood of resulting in actual or potential harm to the child health, survival, development, dignity, responsibility, belief or right.¹⁻³ The prevalence of child abuse is increasing.⁴ Meta-analyses provided a series of overall estimations of 17.7%, 26.7%, 11.8% and 16.3% for physical abuse, psychological abuse, sexual abuse, and neglect, respectively.⁵⁻⁷ The Indonesian Commission of Child Protection⁸, reported increase in violence from 2.178 cases in 2011 to 6.006 in 2015. Based on the scene, 91% of those cases occur at home with family member, 87,6% at school, while 17,9% happen in society.⁸

A history of violence in children might lead to mental health disorders, such as depressive, psychotic, anxiety and post-traumatic disorder^{9, 10}. Depression is one of the mental health problems that occur in adolescents. Currently, about 2 to 3% of children and 8% of adolescents have experienced depression. In the other hand, a lifetime prevalence of depressive disorders in adolescents is estimated to be 17%.¹¹

Adolescents with depression may become a burden for families and themselves. The impact of depression is not only detrimental to the child and family but it can also be a national burden.¹² Adolescents with depression may have a higher risk of decline in academic performance, interpersonal relations, and suicide.¹³ The history of child maltreatment at the age of 10 to 17 years is the strongest predictor of depression, moreover violence in school and home (domestic) have the highest risk of depressive disorder than in society.^{14,15}

West Java is one of thirty-four provinces in Indonesia which has 9.3% prevalence of mental emotional problems in adolescents above 15 years of age while Indonesia's national rate is at 6%.¹⁵ Accordingly, this research was aimed to analyze the relationship between history of child maltreatments with depression in adolescents in West Java, Indonesia

Methods

Study design

A cross-sectional study was conducted on junior high school students. A two-stage cluster sampling was done to determine the school and the subjects. Firstly, several schools were selected, and then the adequate number of students was determined by simple random sampling method. A minimum sample size of 770 students was needed in this study (99% power and 95% significance interval). The study was conducted from May to December 2016.

A letter of approval from the Provincial Directorate of National Education of the city where the research took place was obtained prior to the study. An ethical approval was issued by the Health Research Ethics Committee Faculty of Medicine, Universitas Padjadjaran

Tools

Depression was assessed using the Children's Depression Inventory (CDI)^{16,17} as well as interviews for the enforcement of a diagnosis based on the criteria of the DSM V diagnostic criteria. Depression criteria were fulfilled with students' filled questionnaire. Later on, with the determination of the subsequent CDI score³¹⁹, the interview was carried out by psychiatrist based on the DSM V diagnostic criteria. The CDI instrument itself had been validated in Indonesian version.¹⁸

To assess any history of child maltreatment, we used the ICAST-C questionnaire^{19,20} had been validated in Indonesian version²¹. ICAST-C consists of 55 questions from 5 dimensions of maltreatment: violence exposure (9 questions), physical (18 questions), psychological (18 questions), neglect (6 questions), and sexual (4 questions). Score for each question were interpreted as follow: 1=if there is a history of violence and 0=if there is no history of violence. A cut-off point was made using the mean value of the history of child maltreatment data. Subjects with a total score of child maltreatment dimensions below the cut-off point were not categorized as experiencing child maltreatment.

For correlation validity test, we compared the items correlation value with reference value by taking 5% with the number of respondents (45) as α value. It turned out to be 0.294. The results showed that all items in ICAST-C had adequate validity. Based on Kuder-Richarson reliability test method, the ICAST-C instrument showed strong reliability (KR20=0.92 and KR21=0.87).

Data analysis

Descriptive tests with numeric and percentage value presentation were used to analyze the results of CDI and I-CAST. Analytic Chi-square test was used to analyze the difference of socio-demographic characteristics of students among depression subjects and association between scores of both instruments. Bivariate analysis between the histories of child maltreatment with depression was tested with Prevalence Ratio (PR). Multivariate test was proceeded to analyze which type of maltreatment was the most correlated to depression. Results were considered significant if p value <0.05. Data management and analysis were done using SPSS (Statistical Package for Social Science) 15.0.

Results

A total of 845 students from 23 junior high schools gave their consent, however only 835 filled a questionnaire. After examining the questionnaire, a number of 786 students participated in this study (Figure 1). Students were from 7th grade (34.86%), 8th grade (36.51%), and 9th grade (28.63%) of junior high school. Both male and female students had almost equal proportion of 441(56.11%) and (345) 43.89% respectively. The age range was 12-16 years old, with mean age 13 years old. A 43 (5.47%) subjects with CDI score ≥ 19 , had subsequently interviewed by psychiatrist and met the DSM-V criteria of depression. There were no significant differences of students' socio-demographic characteristic among depression and non-depression subjects (Table 1).

Table 1. The socio-demographic comparison among depression and non-depression subjects

Depression			
Characteristics	Yes	No	p*
	43	743	
Age			0.168**
Mean	13.56	13.36	
SD	0.881	0.926	
Median	13.0	13.0	
Range	12-15	12-16	
Sex	N(%)	n(%)	
Male (N=441)	21(4.8)	420(95.2)	0.323*
Female (N=345)	22(6.4)	323(93.6)	
Grade			
7 th (N=274)	11(4.0)	263(96.0)	
8 th (N=287)	17(5.9)	270(94.1)	0.395*
9 th (N=225)	15(6.7)	210((3.3)	
Father's Education			
Primary School (74)	4(5.4)	70(94.6)	
Junior High School (82)	3(3.7)	79(96.3)	
Senior High School (300)	15(5.0)	285(95.0)	0.802*
College and higher (324)	21(6.5)	303(93.5)	
Illiterate (6)	0	6(100.0)	
Mother's Education			
Primary School (75)	2(2.7)	73(97.3)	
Junior High School(102)	2(2.0)	100(98.0)	
Senior High School (329)	19(5.8)	310(94.2)	0.202*
College and higher (272)	20(7.4)	252(92.6)	
Illiterate (8)	0	8(100.0)	
Father's Occupation			
Public Servant (295)	16(5.4)	279(94.6)	
Entrepreneur (337)	16(4.7)	321(95.3)	0.556*

Labors/Farmers/Others (154)	11(7.1)	143(92.9)	
Mother's Occupation			
Public Servant (116)	9(7.8)	107(92.2)	
Entrepreneur (145)	12(8.1)	137(91.9)	0.181*
Labors/Farmers/Others (54)	3(5.6)	51(94.4)	
Housewife (467)	19(4.1)	448(95.9)	

* p value using Chi-square test ** T test

The history of child maltreatment was determined by statistical mean rate of the child maltreatment score. A subject with scores above the mean value was categorized as having a history of child maltreatment. Subjects with history of child maltreatment were 367 (46.7%). The percentage subject with history of psychological victimization violence exposure, physical victimization, neglect and sexual victimization were 45.4%, 40.84%, 39.82% and 46.31%, respectively.

A number of 27 (3.43%) subjects with depression had experience of child maltreatment. Significant association was found between depression and child maltreatment history ($p=0.03$) (see Table 2).

Table 2: Association between depression and child maltreatment history

Child maltreatment history	Depression				p
	No (743)		Yes (43)		
	n	%	n	%	
Yes	340	43.26	27	3.43	0.030*
No	403	51.27	16	2.04	

Chi-square $p < 0.05$

Based on bivariate analysis, all of 5 dimensions of child maltreatment history were associated with depression. Subjects with psychological victimization history were 6.51 times more likely to develop depression. While neglect was experienced by total of 315 subjects, with 28 of them developed depression. (Table 3)

Table 3. Association between depression and dimensions of child maltreatment

Dimension	No Depression		Depression		p-value	Prevalence Ratio				
	(N=743)		(N=43)							
	N	%	N	%						PR
Violence exposure										
no	421	53.56	11	1.40	0.00	**	3.80	1.88		
yes	322	40.97	32	4.07				7.66		
Psychological Victimization										
no	415	52.80	7	0.89	0.000	**	6.51	2.858	14.8106	
yes	438	55.73	36	4.58						
Physical Victimization										
no	452	57.51	13	1.65	0.000	**	3.58	1.8392		
yes	291	37.02	30	3.82				6.9858		
Neglect										
no	458	58.27	15	1.91	0.001	**	3.00	1.5749		
yes	285	36.26	28	3.56				5.7137		
Sexual Victimization										
no	589	74.94	25	3.18	0.002	**	2.75	1.4647		
yes	154	19.59	18	2.29				5.1772		

Note: * Chi-square test; PR: Prevalence Risk

Since bivariate analysis had showed the association of all dimensions with depression, multivariate analysis was done to find dimension with strongest association with depression. Logistic regression test was conducted to analyze which type of child maltreatment with the strongest association of depression. The result showed in table 4 that psychological violence has the strongest association. The history of psychological violence was three times more likely to develop depression (POR = 3.302, p = 0.004).

Table 4: Multivariate regression between depression and child maltreatment dimensions

Variable	coeff B	SE (B)	p value	POR _{adj} (95% CI)
First model :				
Psychological	0.854	0.453	0.060	2.348 (0.966-5.708)
Physical	0.463	0.391	0.237	1.589 (0.738-3.421)
Violence exposure	0.902	0.427	0.035	2.464 (1.068-5.684)
Neglect	0.242	0.337	0.472	1.274 (0.658-2.466)
Sexual	0.437	0.342	0.202	1.548 (0.792-3.027)
Last model :				
Psychological	1.195	0.414	0.004	3.302 (1.466-7.438)
Violence exposure	1.096	0.415	0.008	2.993 (1.328-6.747)

Discussion

This study revealed that child maltreatment was quite common in junior high school students in Bandung, West Java, Indonesia. About 46,69% of our subjects had history of child maltreatment. Indonesia itself has no definite data of child maltreatment or child abuse so far. However, this current study showed the history of victimization in psychological dimensions was the most widely experienced by the students (46.31%), followed with violence exposure (45.04%), and physical victimization (40.84%). On the other hand, sexual victimization was uncommon (21.88%). Epidemiological data from a study in India showed that the highest prevalence of violence experienced was psychological (61.9%), physical (21.43%) and sexual violence (16.67%).²³ Meanwhile data from the United States showed 686.000 cases of children violence was neglect (78.6%), physical abuse (18.3%) and sexual violence (9.3%).²³ However, several studies showed the cumulative prevalence based on a survey of communities were about 15-30% in girls and 5-15% in boys for sexual violence, 5-35% for physical violence, 4-9% psychological violence and 6-12% neglect²³.

Most of subjects were seventh grade students who were in early adolescent phase (ages 11 to 14) were typically very egocentric with poor self-regulation.²⁴ Those young adolescents were most emotionally victimized at school. School violence played an important role in developing depression.^{12,25} Meanwhile, conduct disorder had the highest prevalence in adolescents, namely 7% in adolescents aged 12 to 16 years old.²⁶

This study showed all child maltreatment dimensions had significant association with depression. This is similar to prior studies that asserted the existence of correlation between the histories of violence in

children with depression.^{27,28} Subjects with history of psychological child maltreatment had 6.51 times higher risk of depression. This finding is similar to a meta-analysis that stated abuse or maltreatment and neglect were strongly associated between child abuse history with depressive disorder in adolescence.²⁵ Moreover, Pirdehghan's study in Iran showed a correlation between mental disorder and violence (Spearman rho:0.2;p-value <0.001) as well.²⁹

We found that depressive symptoms on the CDI were strongly associated with all dimension of child maltreatment, particularly psychological violence and neglect. In one review of 124 studies, psychological violence increased the risk of depression by an odds ratio of 3.06, whereas physical abuse increased the risk of depression by only half that amount. Furthermore, psychological violence maltreatment was more closely related to depression severity than sexual or physical abuse.¹⁰

Emotional abuse and neglect may alter the development of brain reward and oxytocin systems in children leading to impaired parental care giving in the subsequent generation.³¹

These findings were confirmed in a recent systematic review and meta-analysis, although most of the data came from retrospective cross-sectional studies or longitudinal designs that relied on selfreported abuse.³² Sexual violence showed a far weaker association. There are several possible explanations. may be underreported because of stigma.³³

Practitioners should be aware that violence during childhood might result in negative consequences in adolescents. Therefore, a good understanding is required to prevent violence acts against children hence might increase effective intervention for violence issue in adolescents.³⁰

Conclusions

History of child abuse has correlation with depressive disorder in adolescents. Psychological child abuse was the highest risk factor for the onset of disorders of depression compared to other violent dimensions.

Limitations

We recognized those questionnaires might cause depression diagnosis was overrepresented in adolescents. Thus, we involve some psychiatrists to give interview to subjects in order to solve this issue. The number of subjects that met the depression criteria was also small which should be carefully considered to represent the broader population. Limitation of this research was also in the process of fulfilling the questionnaires. Some students met some challenges in answering the questions, thus the authors accompaniment was required to get the foremost results. The use of legally defined cases is likely to have over or underestimated the true prevalence of childhood maltreatment.

List Of Abbreviations

CDI	= Children's Depression Inventory
ISPCAN	= International Society for Prevention of Child Abuse and Neglect
ICAST	= ISPCAN Child Abuse Screening Tool
DSM-V	= Diagnostic and Statistical Manual of Mental Disorders V
ICAST-C	= ISPCAN Child Abuse Screening Tool Children's Version
SPSS	= Statistical Package for the Social Sciences
PR	= Prevalence Ratio

Declarations

Ethics approval and consent to participate

An ethical approval was issued by the Health Research Ethics Committee Faculty of Medicine, Universitas Padjadjaran 29/UN6.C1.3.2/KEPK/PN/2016. Written informed consent was obtained from the subjects and parents or guardians.

Consent for publication

Not applicable.

Availability of data and materials

All data and materials of this study are available at Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia, by contacting the corresponding author Meita Dhamayanti, email meita.dhamayanti@unpad.ac.id

Competing interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Authors' contributions:

MD, NM and VP were responsible for the conception and design of the study, acquisition of data, analysis, and interpretation of data writing and revising the manuscript. AN contributed to the analysis

and interpretation of data as well as writing and revising the manuscript. NS contributed to the conception and design of the study, acquisition of data, analysis of data, interpretation of data, and writing the manuscript. All authors read and approved this manuscript.

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Figures

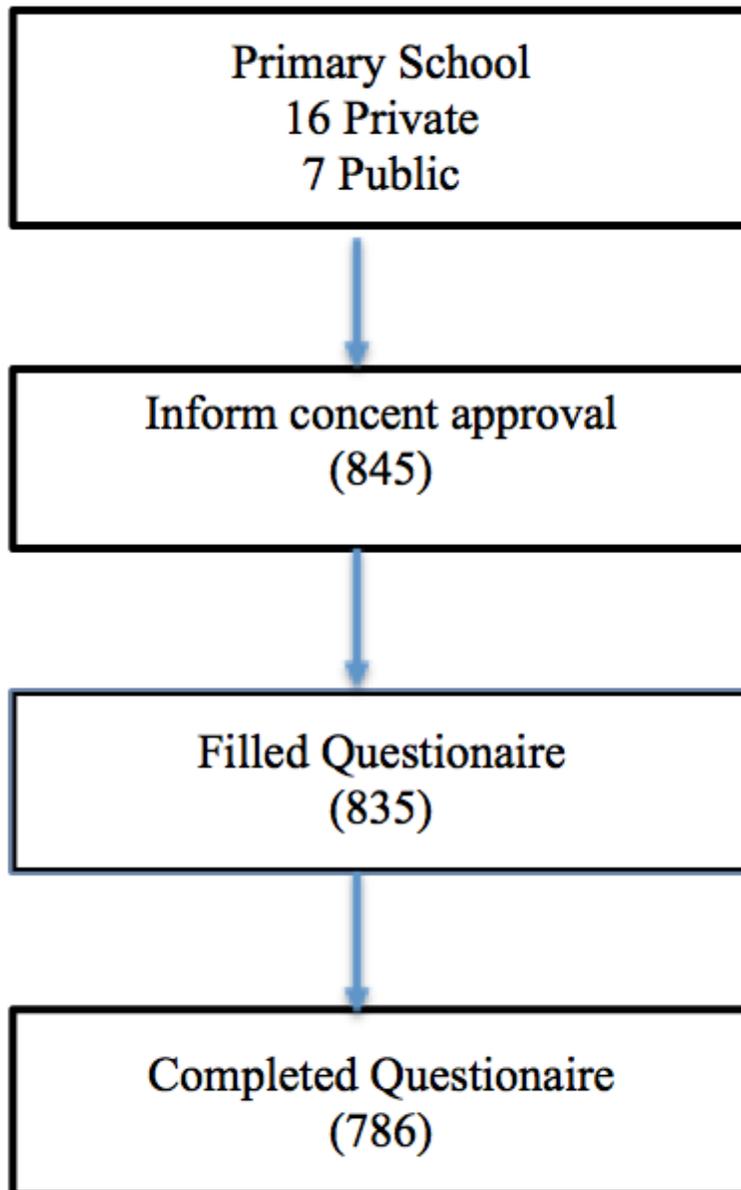


Figure 1

Sample selection

Supplementary Files

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