



Original Research Report

SEXUAL ABUSE AND NEGLECT DURING CHILDHOOD ARE ASSOCIATED WITH AN INCREASED PREVALENCE OF MENTAL HEALTH PROBLEMS AMONG UNIVERSITY STUDENTS IN SURAKARTA, INDONESIA

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ABSTRACT

The prevalence of mental health problems is a global public health concern. Young adults, such as university students, are highly vulnerable to the onset of mental health problems due to biological, psychological, and social factors. In particular, abusive and traumatic experiences during childhood may increase the risk of developing mental health problems during adulthood. The prevalence of child abuse cases in Indonesia is concerning. This abuse includes physical, emotional, and sexual abuse, in addition to neglect. This study aimed to assess the relationship between the occurrence of mental disorder symptoms during young adulthood and the preceding child abuse. A total of 191 undergraduate students in Surakarta, Indonesia, participated in this study. The participants completed the Child Abuse and Trauma Scale (CATS) for the evaluation of maltreatment experienced during childhood and adolescence as well as the Self-Reporting Questionnaire-20 (SRQ-20) for the measurement of mental health problem symptoms. The association of the degree of child abuse and trauma with mental health problems was analyzed using a logistic regression test, which was selected because the dependent variable (mental health problems) had binary outcomes. The level of statistical significance was set at $p < 0.05$. We found that 33% of the participants reported mental health problems. In addition, sexual abuse and neglect were found to be associated with mental health problems. The analysis of the sexual abuse variable revealed a statistically significant value of $p = 0.03$, an odds ratio (OR) of 1.39, and a 95% confidence interval (CI) of 1.03-1.88. Additionally, the analysis of the neglect variable yielded comparable results with values of $p = 0.03$, $OR = 1.26$, and $95\% CI = 1.02-1.55$. Our findings suggest that child abuse, particularly sexual abuse and neglect, may have a long-term deleterious impact on an individual's mental health.

Keywords: Child abuse; mental health; sexual abuse; childhood trauma

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Highlights:

1. This study reiterates the long-term negative impact of childhood trauma on young adults' mental health.
2. This study contributes to the prevention of mental disorders through the identification of risk factors associated with mental health problems.

INTRODUCTION

Mental health problems have become a major public health concern across the globe. In 2019, the global prevalence of mental disorders was estimated to be one in eight individuals, equivalent to approximately 970 million people. Among these people who lived

with mental disorders, depression and anxiety were the most commonly found (Auerbach et al. 2018, World Health Organization 2022). Roughly 14 million Indonesian people aged 15 years or older, which accounted for around 6% of the total population, suffered from anxiety and depression. The prevalence rate of severe mental illness, such as schizophrenia, was 1.7 per 1,000 Indonesian

population (Ministry of Health of the Republic of Indonesia 2013). This issue is even more concerning as the prevalence of mental illnesses worldwide has been increasing markedly over time, including in Indonesia.

University students, being young adults, are one of the populations at a high risk of developing mental health problems. This can be attributed to the developmental challenges during the transition to adulthood (Sheldon et al. 2021). According to Uhlhaas et al. (2023), the peak onset of mental health issues mostly occurs before the age of 25 years. This statement is supported by data on cohorts of 14,000 students from 19 universities across 8 countries. The survey involving these cohorts revealed that approximately 33% of the students had mental illnesses (Auerbach et al. 2016). Mental health disorders have been shown to be associated with several academic problems. Students who suffer from mental health problems have exhibited poor academic performance and an increased rate of study dropout (Hjorth et al. 2016, Chu et al. 2023). In addition, Gunnell et al. (2020) revealed that suicide rates among students had increased from 3 to 4.7 per 100,000 individuals in the years 2000-2001 until 2009-2010. The data suggest the importance of addressing this issue comprehensively.

Several determinants contribute to the development of mental health problems, including biological, psychological, and social factors. In particular, child abuse has been shown to be associated with an increased risk of mental illnesses (Su et al. 2022). Abuse experienced by children encompasses four common forms: physical abuse, emotional abuse, neglect or harmful environment at home, and sexual abuse. Violence against children adversely impacts child development and contributes to an increased risk of mental health issues during adulthood (Cheong et al. 2017). Abusive experiences, such as emotional abuse, are correlated with symptoms of mental distress, such as low self-esteem, negative perception about the world, depression, anxiety, suicide attempt, eating disorder, and other forms of mental health problems (Mazzeo et al. 2008, Cheong et al. 2017, Dye 2020).

Unfortunately, despite the negative impact on child development, the cases of violence against children in Indonesia remain high. In 2016, the Indonesian Child Protection Commission (*Komisi Perlindungan Anak Indonesia*) documented approximately 1,000 cases of violence against children (Setyawan 2017). However, the actual number might be underestimated. In 2021, the Ministry of Women Empowerment and Child Protection of the Republic of Indonesia reported 15,517 cases of child abuse (CNN Indonesia 2022).

Whether this abusive experience during childhood contributes to the development of mental health problems during early adulthood has not been adequately explored in the context of the Indonesian population. Here, we aimed to investigate the relationship between child abuse and mental health problems among university students in Surakarta, Indonesia.

MATERIALS AND METHODS

We conducted an analytical observational study using a cross-sectional design. The participants were undergraduate students enrolled in universities located in Surakarta, Indonesia, and met the eligibility criteria for the study. Students with a history of mental illness during childhood were excluded from the study. We employed cluster random sampling to determine the samples (Sedgwick 2014). There were 26 universities located in Surakarta, according to the 2016 data from the Higher Education Database of the Ministry of Education and Culture of the Republic of Indonesia. We employed a randomization technique using an application called *the Hat for Windows, version 3.1.2.1* (Harmony Hollow Software. LA, USA) to select ten universities for the samples, comprising three state universities and seven private universities. Subsequently, we recruited 19–20 participants from each university, totaling 191 study participants.

We invited participants who expressed their interest in the study to complete written questionnaires for assessing abusive experiences during childhood and mental health problem symptoms. Each participant provided written informed consent in advance. The participants' experiences of child abuse were measured using the Child Abuse and Trauma Scale (CATS). The questionnaire filled out by the participants consisted of 38 questions that assessed stressful experience and trauma throughout childhood and adolescence, including physical abuse, emotional abuse, negative environment at home or neglect, and sexual abuse (Sanders & Becker-Lausen 1995). Each question was rated on a Likert scale, representing the frequency and extent to which the maltreatment was experienced. The score for each item ranged from 0 to 4, where 0 indicated a "never" answer and 4 represented an "always" answer. As an illustration, the questions concerning sexual abuse and neglect would be "Were there traumatic or upsetting sexual experiences when you were a child or teenager that you could not speak to adults about?" and "As a child, did you feel unwanted or emotionally neglected?", respectively. The total score of the CATS questionnaire ranged from 0 to 152.

The mental health problems of the participants were assessed using the Self-Reporting Questionnaire 20 (SRQ-20). The participants responded to the 20 items in the questionnaire by choosing a "yes" or "no" answer to the dichotomous questions. A "no" response received a 0 score, indicating the absence of a mental health disorder symptom. Conversely, a "yes" answer was given a score of 1, suggesting the presence of a symptom. The participants were categorized as having mental health problems if the SRQ-20 score was at least 6. The decision to employ the SRQ-20 for this study relied on the World Health Organization's recommendation for its application when screening mental health problems in developing countries. It was shown that SRQ-20 has good validity and reliability and is adaptable for screening purposes in many countries with diverse cultural settings (Do et al. 2023).

The participants' demographic characteristics were summarized as proportions. We employed a logistic regression test to analyze the association between the degree of child abuse and trauma with mental health problems (Sperandei 2014). The test was chosen because the dependent variable (mental health problems) had binary outcomes. We set the statistical significance level for the test at $p < 0.05$. The data analysis was conducted using IBM SPSS Statistics for Windows, version 23.0 (IBM Corp., Armonk, N.Y., USA).

RESULTS

The analysis of the samples showed that 55.5% of the student participants were female, while as many as 44.5% were male. The age range of the participants was between 21 and 23 years old. The majority of the 191 participants were students enrolled in private universities, as displayed in Table 1.

Table 1. General characteristics of the participants.

Variables	n=191	
	n	%
Age (y.o.)		
21	127	66.5
22	52	27.2
23	12	6.3
Sex		
Male	85	44.5
Female	106	55.5
University type		
Private	146	75.9
State	46	24.1

Legend: y.o.=years old.

Of all the participants, 63 individuals (33%) reported the presence of symptoms related to mental disorders. On the other hand, a total of 128 individuals (67%) did

not experience any symptoms of mental health disorders. Table 2 shows prevalence of mental health problems among the participants according to the SRQ-20 analysis.

Table 2. Prevalence of mental health problems according to the SRQ-20 scores.

Presence of mental health problems	n=191	
	n	%
Yes	63	33
No	128	67

The scores obtained from the CATS questionnaire, as illustrated in Table 3, provided an indication of the extent of the participants' child abuse experiences. The scores denoted different forms of child abuse, including physical abuse, emotional abuse, destructive home environment or neglect, and sexual abuse. The mean of the total CATS scores was 27.51.

Table 3. Scores obtained from the CATS questionnaire representing the level of abusive and traumatic experiences during childhood.

Variables	Min	Max	Mean	SD
Total score	2.00	85.00	27.51	13.05
Neglect	0.00	39.00	11.04	6.45
Physical abuse	0.00	17.00	8.70	3.46
Sexual abuse	0.00	13.00	0.64	1.63
Emotional abuse	0.00	21.00	5.39	4.03

Legend: SD=standard deviation.

Among the five parameters used in the CATS questionnaire, sexual abuse and neglect were found to be significantly associated with the occurrence of mental health problems. The odds ratio (OR) for neglect was 1.26, while for sexual abuse it was 1.39. These results indicated that for every 1 unit increase in neglect and sexual abuse, the likelihood of experiencing symptoms of mental disorders increased by 1.26 times (126%) and 1.39 times (139%), respectively. On the contrary, the total CATS score, emotional abuse, and physical abuse were not significantly associated with the occurrence of mental health problem symptoms. The odds ratios for the total CATS score, physical abuse, and emotional abuse were 0.87, 1.19, and 1.20, respectively. The detailed results of the logistic regression analysis are presented in Table 4.

Table 4. Association between child abuse and mental health problems during early adulthood.

Variables	B	SE	Wald	df	Sig.	Exp(B)	95% CI for EXP(B)	
							Lower	Upper
Total CATS score	-0.13	0.85	2.63	1	0.10	0.87	0.73	1.02
Neglect	0.23	0.10	4.72	1	0.03*	1.26	1.02	1.55
Physical abuse	0.18	0.10	3.31	1	0.06	1.19	0.98	1.45
Sexual abuse	0.33	0.15	4.62	1	0.03*	1.39	1.03	1.88
Emotional abuse	0.18	0.10	3.47	1	0.06	1.20	0.99	1.47
Constant	-2.36	0.53	19.31	1	0.00	0.09		

Legends: B=beta coefficient; SE=standard error; df= degrees of freedom; Exp(B)=odds ratio; CI=confidence interval. The (*) symbol indicates any statistically significant value.

DISCUSSION

The prevalence of mental health problems among university students

From the use of SRQ-20 as the screening tool, we found that the prevalence rate of mental health problems among undergraduate students in Surakarta, Indonesia, was 33%. This finding was in line with several previous studies, such as those conducted by [Auerbach et al. \(2016\)](#) and [Bruffaerts et al. \(2018\)](#). The studies revealed that one out of three college students have had a mental health problem within the past year. This phenomenon seems to happen worldwide, with prevalences in different countries indicating similar trends, particularly among university students. The findings of a recent systematic review conducted by [Dessauvagie et al. \(2022\)](#) on mental health among college students in Southeast Asia nations, including Malaysia, Laos, Cambodia, Myanmar, Thailand, and Vietnam, were concerning. Students in the surveyed countries reported different prevalence rates for various mental health problems, such as 29.4% for depression, around 42.4% for anxiety, 16.4% for stress, nearly 14% for eating disorder, and up to 8% for current suicidality. In American university students, the prevalences were 22% for depression, 19–48% for eating disorders, 8% for post-traumatic stress disorder (PTSD), 2–12.27% for compulsive disorders, and 9.4–36% for sleep disorders ([Kang et al. 2021](#)). A similar pattern has been reported by [Bruffaerts et al. \(2018\)](#), [Zeng et al. \(2019\)](#), [Philip et al. \(2021\)](#), [Pacheco et al. \(2017\)](#), and [Pitua et al. \(2024\)](#), who conducted prior studies across different countries, including European countries, China, India, Brazil, and African countries. These studies revealed that medical students seem to be more vulnerable to mental health problems in comparison to their peers. Presumably, this is due to the high workload and stressful environment.

The SRQ-20 assesses common mental disorders, including mood, anxiety, and somatic symptoms. The questionnaire is designed to identify indications

of minor or non-psychotic mental disorders. Although not intended for diagnostic purposes, this instrument is commonly used as a screening tool in the community. Previous research suggests that cultural context may affect the cutoff score for the SRQ-20 ([Pacheco et al. 2017](#)). [Do et al. \(2023\)](#) recommended a cutoff score of 5/6, which provides a combination of good sensitivity (82.35%) and specificity (84.46%). However, a different cutoff score, either lower or higher, may be deemed optimal for other examinations. A lower cutoff score of 4/5 was reported in a study that examined the performance of SRQ-20 among women in Malawi ([Stewart et al. 2013](#)). On the contrary, [Giang et al. \(2006\)](#) suggested that a higher cutoff score of 6/7 is recommended for screening the general population. In our study, we categorized participants as having mental health problems if the SRQ-20 score reached a minimum score of 6. This cutoff is considered appropriate for the Indonesian context ([Ministry of Health of the Republic of Indonesia 2013](#)).

Association between child abuse and mental health problems

We revealed that there were significant associations between child abuse, in the form of neglect and sexual abuse, and the occurrence of mental health problems during young adulthood. Our findings are in line with other studies that have demonstrated a link between childhood maltreatment and mental illnesses ([Su et al. 2022](#), [Scott et al. 2023](#)). It has been well established that maltreatment during childhood increases the risk of mental health problems. For instance, consistent findings from systematic reviews and meta-analyses suggest the relationships between child maltreatment and various psychiatric diseases, including substance use disorder, anxiety disorder, depression, and psychosis ([Halpern et al. 2018](#), [Baldwin et al. 2023](#)).

The statistical analysis in this study revealed a trend toward an association between physical and emotional abuse and mental health problems. However, each variable demonstrated a non-significant association ($p=0.06$). Emotional abuse is an important predictor of mental health problems. In particular, when an individual has experienced emotional abuse, the likelihood of developing depression is higher in comparison to other forms of abuse ([Rost et al. 2024](#)). In addition, [Madigan et al. \(2019\)](#) documented that parents who were emotionally abused during childhood are more likely to engage in abusive behavior against their own children. The abusive behavior may include aggressiveness, either mentally or physically, a lack of emotional attachment, and unsupportive parenting skills. Similarly, physical abuse during childhood causes several psychological problems.

Physically abused children were shown to have impaired perception of reality as well as impaired cognitive skills. They may also suffer from anxiety, behave aggressively, and have difficulty controlling impulses (Özbay et al. 2024).

Strength and limitations

This study has several limitations. Firstly, we employed a cross-sectional design, implicating that we could only look at the association between childhood abuse and trauma with the occurrence of mental health problems during adulthood. We could not conclude any causal inferences between the two variables. We acknowledge the need to understand the causal nature of this association to guide the development of a prevention strategy. Secondly, we did not assess other factors that might contribute to the development of mental health problems, such as biological factors (e.g., hormones and genetics) and sociodemographic factors (e.g., socioeconomic status). Thus, it is recommended that future studies include these factors to provide a more thorough understanding of the risk factors associated with mental health issues.

CONCLUSION

The prevalence of self-reported mental health problems among young adults, particularly university students, is relatively high. Notably, mental health problems are associated with previous experiences of sexual abuse and neglect during childhood. Our findings suggest that child abuse may have an adverse impact on an individual's mental health in the long term.

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Conflict of interest

None.

Ethical consideration

The Health Research Ethics Committee of the Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Indonesia, reviewed the design and materials of this study before issuing the ethical approval for this study. The ethical approval was recorded under registration No. 313/UN27.6/KEPK/2018 dated 24/10/2018. The data were collected in November 2018.

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None.

Author contribution

NPA carried out the data collection and analysis. MM drafted the manuscript, performed the critical revision for important intellectual content as well as conceptualized and designed the study. RHS and DS designed the study, performed the data interpretation, and provided approval to the final version of the article.

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