

## Original Research

# The Association Between Loneliness and Depression in Adolescents with Self-harm at a Vocational High School in Kabupaten Malang

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### Abstracts

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**Introduction:** Adolescents with self-harm behavior are in the spotlight because they are increasing nowadays. Various studies have shown a relationship between self-harm and affective disorders, one of which is depression. Adolescents are also subjects who are prone to feeling lonely. This study was conducted to determine the association between loneliness and depression in adolescents with self-harm behavior at Vocational High School in Kabupaten Malang. **Methods:** This study used an observational analytic cross-sectional study design with a consecutive sampling technique. The population and sample were students in the 10th and 11th grades (14-18 years old) at a Vocational High School in Kabupaten Malang. Self-harm behaviors are questioned using the Self-Harm Inventory (SHI). Loneliness levels are measured using the UCLA Loneliness Scale Version-3 (UCLA-3). Meanwhile, depression rates are evaluated using the Patient Health Questionnaire -9 (PHQ-9). Statistics will be tested using Chi-square analysis. **Results:** Approximately 25% of subjects tended to do self-harm, and 101 of them had mild symptoms of depression. The results of the chi-square independence test showed that  $\chi^2(4)=253.663$   $p=0.000$ . A moderate degree of loneliness was experienced by 32.31% of students or as many as 95 students. The chi-square independence test showed that  $\chi^2(3)=216.359$   $p=0.000$ . **Discussion:** Few research, nevertheless, have painted a picture of adolescent loneliness, suggesting that both loneliness and depression may be risk factors for young people to harm themselves. This study showed a strong correlation between loneliness and self-harm. **Conclusion:** There was a significant correlation between self-harm, depression and loneliness.

**Keywords:** Loneliness, Self-Harm, Depression, Adolescent, Mental Health

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## INTRODUCTION

Loneliness is an emotional and cognitive condition in which the individual has little social connection and is not satisfied with it because it does not meet his or her expectations [1]. Prior studies have found loneliness to be perceived as isolation that has negative physical and emotional effects. Another piece of research suggests that loneliness may be associated with poor mental health, specifically psychological well-being, including self-esteem [2]. This situation of loneliness can be experienced by anyone regardless of group, age, or gender, as shown by Eriany, 1997. Usually, loneliness is considered a feeling in individuals of late age. The Journal Psychology Today showed that of the 40,000 individuals, who had the intensity of often feeling lonely were individuals in the adolescent age group compared to the age group over 55 years, which is 79% [3]. As is known, adolescence is the age of selection and formation of peer support (peer group) where social interaction with peers is fundamental in both processes. This suggested that adolescents are also susceptible to poor-quality relationships that trigger resolute connections and feelings of loneliness [4].

The loneliness experienced by teenagers when continuously felt can trigger negative feelings such as despair, depression, anxiety, dissatisfaction, pessimism about the future, feelings of self-guilt, and shame [4, 5]. The 2018 Basic Health Research (Riskesdas) report indicated that people of various ages could suffer from depressive illnesses. The frequency of depressive disorders in adolescents reaches 62%, and over 12 million persons over the age of 15 suffer from depression [6]. In a study by Nenov-Matt in 2020, patients with Persistent Depressive Disorder (PDD) had high levels of loneliness [7]. The University of Illinois in 1997 also showed that the feelings of loneliness experienced by adolescents can lead to negative reactions to reduce the feeling of solitude. Some examples of negative responses,

such as drinking alcoholic beverages, bidding, using drugs, smoking, and doing self-harm can end in a suicide attempt. Simultant data mentioned in DSM-5 shows depressive disorder is common in youth from the age of 9 and substance use disorders become more prevalent during middle school [8]. In another study, patients who reported thoughts of death or self-harm nearly every day on the PHQ-9 screener were 10 times more likely to attempt suicide in the following year [9]. Minimum data and images of loneliness in Indonesian teenagers are a challenge in attempting to approach teenagers. Data from a high school in West Java, Takwati (2017) found that 8.3% of her students were indicated to have self-harm [10]. Purwandura (2017) also found that three out of five teenagers who broke up have ever committed self-harm [11]. Given the facts and phenomena of self-harm, it is necessary to find out the relationship between loneliness and depression in adolescents and its relationship with self-harm in the educational institution environment.

## METHODS

This study was a cross-sectional study with a descriptive-analytical approach in June 2023. The study was conducted at a Vocational High School in Kabupaten Malang, East Java, Indonesia. The target population was Vocational High School students of classes X and XI who meet the criteria of youth age of 15-18 years. The size of the sample was determined using purposive sampling. The sampling technique used for this study was a preliminary study that would describe self-harm behavior, loneliness, and depression in students in a targeted school. The inclusion criteria in this study were adolescents with a minimum age of 13 years and a maximum of 18 years and students of classes X and XI at a Vocational High School in Kabupaten Malang. The exclusion criteria were students who refused to be a sample/respondent in this study.

The size of the sample targeted was 1.260

students consisting of students of classes X and XI. Before the research was carried out, the researchers explained the research plan to Guidance and Counseling teachers and students as the subjects, followed by a letter of consent containing their parents' signature/ consent. Students were allowed to obtain parental consent when they were willing to be sampled in this study. From the 1.260 samples targeted, 1.178 said they agreed to participate as samples. In this study, seven students were excluded from the data because they did not meet the inclusion criteria of the sample's age.

The research used a questionnaire tool presented through Google Forms. The questionnaire included several questions following the data the researchers wanted: 1) Demographic data that included the name, age, class, and majority; 2) The self-harm inventory (SHI) that has been validated. The SHI includes 22 questions that represent self-harm behavior [12]; 3) The Patient Health Questionnaire (PHQ-9) has been validated in Indonesian to determine depression scores, presenting 9 questions; 4) UCLA-3 revised which has been translated into Indonesian and validated as a loneliness measurement instrument consisting of 20 questions.

The Google form links were shared with respondents through Guidance and Counseling Teachers. The data was processed using Microsoft Excel and performed statistical testing using the Chi-Square Test with  $p < 0,05$ . This study was held in June-July 2023. Ethical clearance for the study was obtained from the Research Ethics Committee of Menur Mental Hospital, East Java (ref no: 070/3832/102.8/2023).

## RESULTS

The study used 1.171 subjects consisting of adolescents aged 14-18 years. Based on the characteristics of the subjects, as many as 1.008 respondents were women, while 163 others were male respondents. The average age of the study subjects was 17 years old. Based on the results of assessments using

SHI scoring instruments, as many as 294 of the 1.171 subjects encounter a tendency to self-harm. This data put 25% of teenagers in Vocational High Schools in Kabupaten Malang with a SHI score  $> 5$ . The result showed 90,48% of the 294 students were female, while 9,52% were male. Data from respondents showed that the most susceptible age to self-harm was predominantly between the ages of 16 (42.86%) and 17 (42.18%). The PHQ-9 instrument divided depression into 5 categories: minimal depression; mild depression; moderate depression; moderately severe depression; and severe depression. Among 294 students who tended to self-harm, 101 of them have mild symptoms of depression as listed in the PHQ-9 instrument. The second highest percentage were students with moderate depression, which was 69 subjects or 23.47%, of the total students who tended to self-harm. This data followed by 20,07% of students indicating severe depression (PHQ-9 score  $> 20$ ). The results of the chi-square independence test showed that  $\chi^2(4) = 253.663$   $p = 0.000$ . Statistics constituted that there was a significant correlation between self-harm and depression ( $p < 0,005$ ). Simultant data were also shown from comparative variables, namely students who did not have a tendency to self-harm, which was 877 subjects. Of the 877 subjects, 321 of them, or 36.6%, showed minimal depression. While 39.34% said they had mild symptoms of depression. A total of 16.65%, or 146 of the 877 students, implicitly had moderate depression; 5.93% had moderately severe depression; and 1.48%, or 13 students, had severe depression. Moreover, the level of loneliness was measured using a revised UCLA-3 instrument that categorizes loneliness into low degree of loneliness (score 20–34), moderate degree of loneliness (score 35–49), moderately high degree of loneliness (score 50–64), and high degree of loneliness (score 65–80). The link between self-harm and loneliness was also described in 177 out of 294 students who had a tendency to self-harm and

experienced a moderately high degree of loneliness. It confirmed that 60.2% of students with self-harm behaviors experienced feelings of loneliness. The correlation was strong, with as many as 16 students (5.44%), experiencing a high degree of loneliness. A moderate degree of loneliness was experienced by 32.31% of students or as many as 95 students. The rest experienced a low degree of loneliness. On the comparative variable, 550 of 877 students who did not tend to self-harm behavior felt loneliness at

a low level. Meanwhile, 184 out of 877 students (20.98%) felt moderately high loneliness and 15.96% felt a low degree of loneliness. Only three out of 877 students who did not tend to self-harm felt lonely with a high degree. The results of the chi-square independence test showed that  $\chi^2(3)=216.359$   $p=0.000$ . Statistics showed that the correlation between self-harm and loneliness was significant.

Table 1. Subjects characteristic

	Sample (n=1171)	%	Self-Harm (SHI >5)		Without Self-Harm (SHI ≤5)		P
			(n= 294)		(n=877)		
			n	%	n	%	
Gender							
Male	163	13,92	28	9,52	135	15,39	0.012
Female	1008	86,08	266	90,48	742	84,61	
Age (years old)							0,723
14	1	0,09	0	0,00	1	0,11	
15	62	5,29	19	6,46	43	4,90	
16	526	44,92	126	42,86	400	45,61	
17	487	41,59	124	42,18	363	41,39	
18	90	7,69	25	8,50	65	7,41	

Table 2. Self-harm and its correlation with loneliness and depression

	Self-Harm (SHI >5)		Without Self-Harm (SHI ≤5)		Total (N=1171)	P
	(n=294)		(n=877)			
	n	%	n	%		
Depression						0.000
Minimal depression	10	3,40	321	36,60	331	
Mild depression	101	34,35	345	39,34	446	
Moderate depression	69	23,47	146	16,65	215	
Moderately severe depression	55	18,71	52	5,93	107	
Severe depression	59	20,07	13	1,48	72	
Loneliness						0.000
Low degree loneliness	6	2,04	140	15,96	146	
Moderate degree loneliness	95	32,31	550	62,71	645	
Moderately high degree loneliness	177	60,20	184	20,98	361	
High degree loneliness	16	5,44	3	0,34	19	

### DISCUSSION

The prevalence of 25% of teenagers with a self-harm potential was found in the current study, using SHI as an instrument [12]. which was similar to the prevalence of 13-25% reported in the initial article [3]. This current

study showed that self-harm was more likely to happen in women, approximately reaching 90% of the total sample. Research conducted by Buelens in 2020 addressing the following was similar to the findings of the current study [13]: the incidence of 7.6% for potential nonsuicidal self-injury (NSSI); the

predominance in women, which was also noted in various investigations [14, 15]. The studies shared a tendency toward impulsivity, a preponderance of females, and the two primary causes of self-injury: “relieving feelings of emptiness or indifference” and “stopping bad feelings or sensations.”

Large screening studies held in the U.S. showed that samples of adolescents and young adults since 2010 have shown reductions in happiness and fulfillment of life. It showed rising levels of loneliness and anxiety, depressive symptoms, and depressive episodes in the past year [16]. It had a correlation in hospital admissions for self-harm behaviors (nonsuicidal self-injury), suicidal ideation, self-harm, and suicide attempts via poisoning [17]. Previous research has reinforced the findings of this study that imply a correlation of depression with self-harm behavior. Approximately 20% of subjects who tended to self-harm had a severe depression condition. The condition of severe depression was measured using the instrument PHQ-9 version in Indonesian [18]. Other studies also showed that self-harm behavior and loneliness tend to be associated with affective disorders such as major depressive disorder, bipolar disorders, and personality disorders such as borderline [19 - 21]. A neuroimaging (MRI) study in adolescents with bipolar disorder and major depression disorder showed that they had lower ventral prefrontal cortex (VPFC) which is key to emotion inhibition, decision-making, and self-control [22].

A few studies have examined the relationship between loneliness and NSSI in the literature [23]. In a study conducted in China, NSSI was found to be strongly associated with a higher level of loneliness [14]. Indonesia itself reported a similar study that included a strong correlation between self-harm and loneliness in two adolescents [3]. Because the loneliness score was considerably higher in the two groups with self-injurious conduct, a similar profile was found in the current research. Of the 294 subjects

who tended to self-harm, 60,2% of them experienced a moderately high degree of loneliness, according to the UCLA-3 revised instrument [24]. Meanwhile, 5,44% were in severe loneliness. This also indicated teenagers who experienced more severe loneliness were more likely to have self-harmed, simultaneity to a study held in the UK during the Covid pandemic, those reporting an increase in loneliness during lockdown showed a greater risk of self-harm during the same period [25].

The fact that change in loneliness was associated with the risk of self-harm is distinct. It suggested a need to understand more how changes in loneliness in response to changes in individuals' circumstances may be followed by changes in individuals' distress and self-harm [25, 26]. Furthermore, loneliness is a potentially modifiable factor so studying how to support those experiencing loneliness and whether structural and environmental changes can help reduce loneliness [7], could be an important component of future interventions and warrants research attention and consideration by all providers to this age group.

The limitations of this study are the data collected using self-administered questionnaires which depends on the recall and authenticity of the responders. Moreover, the results represented the realities of adolescents in a tiny town in Malang, East Java, Indonesia.

## CONCLUSION

This study investigated the profile and prevalence of self-injury in teenagers and its association with depression and loneliness. Regarding the prevalence, it was determined that 25% of adolescents tend to self-harm. For the characteristics, it was more common in females and ages 16-17 years old. A strong association between loneliness and depression has been established in adolescents with self-harm. These findings emphasize the need for a better strategy among adolescents with mental health conditions.

## CONFLICT OF INTEREST

The authors have no conflict of interest

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