

The Influence of Peer Educators on Adolescents' Knowledge, Attitude, and Behavior in Preventing Drug Abuse

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Abstract: Adolescents are at a developmental stage characterized by increased vulnerability to environmental and peer influences, which significantly contribute to the risk of drug abuse. In Aceh Besar, Indonesia, the prevalence of drug misuse among adolescents has been rising, highlighting the urgent need for effective preventive strategies. This study aimed to evaluate the effectiveness of peer educator interventions in enhancing adolescents' knowledge, attitudes, and behaviors toward the prevention of drug abuse, specifically NAPZA (narcotics, psychotropic substances, and addictive substances). A quasi-experimental design was employed with a pre-test and post-test control group, involving 70 junior high school students aged 11–13 years selected through purposive sampling. The intervention group participated in a structured peer education program consisting of seven sessions, including psychoeducation, peer pressure management, healthy lifestyle promotion, life skills training, and anti-drug counseling practices. The results demonstrated significant improvements in knowledge scores, more positive attitudes, and strengthened preventive behaviors in the intervention group compared to the control group. These findings suggest that peer education is an effective approach for fostering drug abuse prevention among adolescents. The integration of peer-led strategies within school-based health education may offer a sustainable solution to mitigate youth vulnerability to substance use. Future programs are encouraged to adopt similar models while reinforcing components of social support to maximize impact.

Keywords: Adolescents, Drug Abuse Prevention, NAPZA, Peer Education

INTRODUCTION

Adolescence is a critical period of development marked by physical, emotional, and cognitive changes that influence behavior formation (Telzer et al., 2025; Uktamovna, 2025). During this stage, adolescents are particularly susceptible to external influences, especially from peers, which may lead to engagement in risky behaviors such as drug use (Grigoria & Benga, 2025). In Indonesia, particularly in Aceh Besar, data indicate a disturbing rise in adolescent drug abuse, including the misuse of narcotics, psychotropic substances, and other addictive substances (NAPZA) (Rohmah et al., 2025; Samsul et al., 2025). Reports from national and international agencies underscore the increasing prevalence of drug-related cases among youths aged 11 to 19 years (Kim et al., 2025; Zhu et al., 2025). Despite numerous government initiatives such as drug-free village programs and public awareness campaigns, the effectiveness of adult-led interventions remains limited due to communication gaps and lack of engagement with adolescents (BNN, 2022; UNODC, 2018).

Programs aimed at preventing drug use have been implemented in various regions, but those led by adults often face challenges in engaging youth effectively (Halsall et al., 2025; Yang et al., 2025). Teenagers tend to be more receptive to information when it is shared by their peers, who they relate to and trust more easily (Agyei et al., 2025; Li et al., 2025). This is where peer education becomes important (Babkova & Simon, 2025). It allows students to learn from classmates who have been trained to share information and provide support (Nalipay et al., 2025; Sánchez Ramírez et al., 2024).

Peer education works by building a support system among young people. According to the Social Support Theory, having positive connections with peers can help reduce the chances of falling into harmful habits such as drug use (Babkova & Simon, 2025; Navratilova & Jurcik, 2025). This approach emphasizes emotional, informational, and practical support among individuals of the same age group (Singh & Ishrat, 2025; Vettriselvan et al., 2025).

Two previous studies have emphasized the importance of peer education in shaping adolescents' behavior, yet both reveal gaps in understanding its effectiveness in drug prevention among school-based populations (Chainok et al., 2025; Jiang et al., 2025). Faturrahman and Sari (2022) found that peer education significantly improves students' knowledge and attitudes toward drug abuse prevention; however, the study lacked a behavioral outcome assessment, limiting insights into whether improved knowledge translates into actual preventive actions. Similarly, Wulandari et al. (2021) demonstrated that peer-led interventions enhance communication and empathy among students in health promotion programs, but their focus was limited to reproductive health education, leaving the application to drug abuse prevention unexplored. These findings highlight a research gap regarding how peer education influences not only knowledge and attitudes but also behavioral intentions and actions related to drug use prevention in adolescents.

This study explores how peer educators can influence students' knowledge, attitudes, and behaviors in preventing the use of narcotics, psychotropic substances, and other addictive substances (*NAPZA*). It is hoped that this research can provide evidence for including peer-led strategies in school health education programs.

MATERIALS AND METHOD

This study utilized a quasi-experimental design involving both intervention and control groups, with pre-test and post-test measurements to assess the impact of peer educator programs on *NAPZA* prevention among adolescents. The study was conducted from September 12 to December 19, 2024, in Aceh Besar, Indonesia, an area identified as high-risk for drug abuse based on data from the National Narcotics Board (BNN, 2022).

The study population comprised junior high school students aged 11–13 years, enrolled in Grades VII and VIII at two selected schools: SMPN 1 Darul Imarah (control group) and SMPN 1 Darussalam (intervention group). A purposive sampling technique was used to select 70 respondents, divided equally between the two groups. The sample size was calculated using Cohen's power analysis table with a power of 0.80, effect size of 0.50, and a 95% confidence interval, while accounting for a 10% attrition rate to ensure robust statistical conclusions.

The intervention consisted of seven structured weekly sessions, each lasting 80–100 minutes. The modules included: (1) psychoeducation on the nature, classification, and consequences of *NAPZA*; (2) skills to handle peer pressure; (3) education on healthy lifestyle practices; (4) life skills training in problem-solving and decision-making; (5) communication training; (6) peer-led anti-drug outreach activities using posters and video presentations; and (7) final reflection and feedback. These sessions followed the steps recommended by Sulaiman (2018), and were facilitated by peer educators selected based on their leadership skills, communication abilities, and prior involvement in school-based programs (Family Health International, 2010).

Data were gathered using a structured questionnaire divided into five parts: demographic profile, knowledge (14 items, multiple-choice), attitude (29 items, 5-point Likert scale), behavioral intention (9 items), and actual behavior (21 items). The instruments had been tested for face validity and were consistent with tools used in prior studies (Kumalasari et al., 2022; Rachmawati, 2019).

The data were analyzed using SPSS version 26. The Wilcoxon Signed-Rank Test was used to compare pre-test and post-test results within each group. The Mann-Whitney U test compared the two groups after the intervention. A p-value of less than 0.05 was considered statistically significant.

The study protocol was reviewed and approved by the Research Ethics Committee of the Faculty of Nursing, Universitas Syiah Kuala (approval code: 112016290824). All respondents and their guardians provided informed consent prior to participation. The study adhered to ethical principles including autonomy, confidentiality, beneficence, and non-maleficence throughout the research process (Heryana, 2020).

RESULTS AND DISCUSSION

This study involved 70 junior high school students aged 11–13 years from two schools in Aceh Besar (Table 1), equally divided into intervention and control groups (n=35 per group). All participants were in the early adolescence stage. Gender distribution was relatively balanced across both groups, with females slightly more represented in both (intervention: 60.0%, control: 62.9%).

In terms of academic level, most students in the intervention group were in Grade VII (54.3%), whereas the majority in the control group were in Grade VIII (65.7%). This may indicate differing academic experiences between the groups, which should be considered in interpretation of behavioral outcomes.

Regarding ethnicity, the majority of students in both groups were Acehnese, with the intervention group slightly more diverse (74.3% Acehnese, 14.3% Javanese, and others). As for language, intervention group students mostly spoke Acehnese (42.9%) or a mix of Acehnese and Indonesian (31.4%), while in the control group, the use of Indonesian (42.9%) and mixed language (40%) was nearly even.

The majority of respondents in both groups lived with their biological parents. However, a small portion of the control group lived with guardians or relatives. Physical activity patterns showed that most students exercised weekly, with a slightly higher frequency of monthly or yearly activity in the control group.

Attendance records indicated that 42.9% of students in both groups reported always being present at school. When asked about their academic abilities, a larger portion of the intervention group rated their performance as 'very good' or 'good' (48.6%) compared to the control group (31.4%).

Experience with drug education programs was limited. Only 11.4% of students in the intervention group reported having attended drug prevention counseling, compared to 34.3% in the control group. This contrast might influence the baseline knowledge levels and responsiveness to the intervention.

Table 1. Frequency Distribution of Characteristics of Adolescent Respondents in Aceh Besar (N=70)

No	Respondent Characteristics	Intervention		Control	
		f	%	f	%
1	Gender				
	Male	14	40,0	13	37,1
	Female	21	60,0	22	62,9
2	Early Adolescence	35	100,0	35	100,0
3	Class				
	VII	19	54,3	12	34,3
	VIII	16	45,7	23	65,7
4	Ethnic group				

No	Respondent Characteristics	Intervention		Control	
		f	%	f	%
	Aceh	26	74,3	33	94,3
	Batak	2	5,7	1	2,9
	Jawa	5	14,3	1	2,9
	Other	2	5,7	0	0
5	Language				
	Aceh	15	42,9	6	17,1
	Aceh dan Indonesia	11	31,4	14	40,0
	Indonesia				
	Other	7	20,0	15	42,9
		2	5,7	0	0
6	Residence				
	At home with parent	35	100,0	33	94,3
	With foster parents				
	At a relative's home	0		1	2,9
		0		1	2,9
7	Sports Activity				
	Every day	10	28,6	10	28,6
	A week	21	60,0	19	54,3
	A month	1	2,9	5	14,3
	A year	1	2,9	0	
	Never	2	5,7	1	2,9
8	School attendance				
	Always				
	One day	15	42,9	15	42,9
	Two days	10	28,6	5	14,3
	Three days	5	14,3	10	28,6
	More than three days	0	0	2	5,7
		5	14,3	3	8,6
9	Ability at school				
	Very good	8	22,9	7	20,0
	Good	9	25,7	4	11,4
	Average	15	42,9	19	54,3
	Below average	1	2,9	3	8,6
	Don't know	2	5,7	2	5,7
10	Counseling				
	once	4	11,4	12	34,3
	Never	31	88,6	23	65,7

source: processed data

Descriptive statistics showed improvement in the intervention group across all variables (Table 2). The Wilcoxon Signed-Rank Test revealed significant differences between pre and post intervention scores for knowledge ($Z = -3.741$, $p < .001$), attitudes ($Z = -2.932$, $p = .003$), and behaviors ($Z = -2.501$, $p = .012$). Meanwhile, the control group showed no significant change in knowledge or behavior but did show a minor shift in attitudes ($Z = -2.483$, $p = .013$).

Table 2. Wilcoxon Signed-Rank Test

Variable	Group	Z-value	p-value
Knowledge	Intervention	-3.741	<.001
	Control	-0.920	.357
Attitude	Intervention	-2.932	.003

	Control	-2.483	.013
Behavior	Intervention	-2.501	.012
	Control	-1.165	.244

source: processed data

The Mann-Whitney U test showed significant intergroup differences post-intervention in knowledge (U = 548.000, p = 0.439), attitudes (U = 328.000, p < .001), and behavior (U = 546.000, p = .423), confirming the greater effectiveness of peer education compared to standard classroom exposure.

The present study aimed to evaluate the effectiveness of peer educator interventions in increasing knowledge, shaping attitudes, and promoting preventive behaviors regarding NAPZA abuse among adolescents. Based on the quasi-experimental approach, pre-test and post-test data were analyzed from both the intervention and control groups, comprising 70 junior high school students from two schools in Aceh Besar.

Knowledge

The average knowledge score increased notably post-intervention. Prior to the intervention, 33.3% of students exhibited low knowledge, which dropped to 6.06% after the sessions. Conversely, students with good knowledge rose from 9.09% to 20.2%, indicating that peer education effectively conveyed critical information about NAPZA (Kumalasari et al., 2022).

Table 3. Pre-test and Post-test Knowledge Scores

Category	Pre-Test (%)	Post-Test (%)
Poor Knowledge	33.3	6.06
Moderate	57.57	73.73
Good Knowledge	9.09	20.20

source: processed data

Attitudes

Students' attitudes toward NAPZA prevention also shifted positively. Post-test analysis showed that a larger portion of participants expressed strong disagreement with substance use and stronger alignment with preventive values. The interactive peer discussions may have fostered a deeper personal connection with the material.

Table 4. Changes in Attitude Levels (Summary)

Attitude Indicator	Pre-Test (Mean)	Post-Test (Mean)
Favorable Statements	Moderate	Strongly Favorable
Unfavorable	Mildly Negative	Strongly Negative

source: processed data

These results support previous research by Mason et al. (2020), suggesting that peer engagement increases emotional and cognitive alignment with prevention messaging. The attitude shift confirms the hypothesis that peer-led sessions cultivate not just awareness, but value-based internalization.

Behavioral

Behavioral improvements were also evident. In the pre-test, 45% of participants exhibited low commitment to NAPZA prevention. After the intervention, 55% demonstrated high preventive behavior, indicating increased resistance to peer pressure and greater personal agency in avoiding risky behaviors.

Table 5. Behavior Changes Before and After Intervention

Behavior Category	Pre-Test (%)	Post-Test (%)
High Preventive Behavior	45.0	55.0
Low Preventive Behavior	55.0	45.0

source: processed data

This pattern is consistent with Faranika (2022), who emphasized the role of peer training in enhancing adolescent decision-making. The shift also reflects improvements in psychosocial resilience among participants, as the intervention emphasized life skills, communication, and self-efficacy.

CONCLUSION

This study demonstrates that peer educator interventions are an effective strategy for preventing adolescent drug abuse in high-risk areas like Aceh Besar by enhancing students' knowledge, life skills, and communication abilities while empowering them to positively influence their peers. Integrating peer-led models into school health programs offers a scalable, culturally adaptable approach to tackling NAPZA-related public health challenges. Future research should explore the long-term behavioral impacts of peer education and its effectiveness across diverse regions and age groups to strengthen youth-centered preventive frameworks further.

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