

ORIGINAL ARTICLE

The Effective peer educators and counselors in adolescent efforts to quit smoking

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ABSTRACT

Introduction: The problem faced by adolescents in smoking cessation efforts is the lack of knowledge and low attitude of adolescents in accessing information, ways and management of quit smoking, in this case the role of peer educators and counselors as the closest environment to adolescents is needed because it greatly affects the knowledge and attitudes of adolescents in efforts to quit smoking. **Objectives:** The purpose of this study was to determine the effect of peer educators and counselors on the knowledge and attitudes of adolescents in an efforts to quit smoking. **Methods:** The research design used quantitative with pre-experimental research design with one group pre-post-test design technique given intervention. The research was conducted in one of the boarding schools in Jambi. Through total sampling technique, 89 respondents with inclusion criteria were adolescent boys who smoked and were aged 15-18 years. Bivariate analysis used the non-parametric Wilcoxon Signed Rank Test with a significance limit of 5% (0.05) and multivariate analysis using ordinal regression which aims to assess the influence of confounding factors (age, economic, psychological, peers, and family) and the most influential on adolescents' knowledge and attitudes in efforts to quit smoking. **Results:** The results showed that there were differences in knowledge and attitudes of adolescents in efforts to quit smoking before and after the intervention with a p-value: 0.000 ($p < 0.05$). The confounding factors: age, economy, and family have the most influence on adolescents' knowledge and confounding factors: age, economy, and peers have the most influence on adolescents' attitudes in efforts to quit smoking. **Conclusions:** The effective peer educators and counsellors in adolescent efforts to quit smoking. Peer educators and counsellors as role models and health cadres who care about adolescents help adolescents divert attention from the desire to smoking again and increase adolescent curiosity about how and how to manage efforts to quit smoking through continuous counselling and the Upaya Berhenti Merokok (UBM) program and utilize information media to increase adolescent knowledge.

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1. Introduction

Adolescents are the next generation of the nation who have an important role, especially in realizing the demographic bonus as well as realizing the Sustainable Development Goals (SDGs) (Hadiz et al., 2019). Demographic bonus is a condition where the number of people of productive age (aged 15-64 years) is greater than the population of unproductive age (aged under 15 years and over 64 years). In the 2030-2040 period, the productive age population is predicted to reach 69.3% of the total population projected at 190.83 million people, especially the productive age population of the youth group (15-19 years) reaching 21.62 million people (Kusnandar, 2022).

The large number of productive-age population, especially adolescents, has great potential to actively participate in realizing sustainable development goals, especially in the third target, namely a healthy and prosperous life. However, in reality, adolescents experience a double burden of disease in the form of a high prevalence of non-infectious and infectious health problems. Adolescent health risks are also closely related to cigarette and alcohol consumption, as well as

the risk of degenerative diseases. This is also the fear of parents and teachers today, especially in adolescence (Hadiz et al., 2019).

The role of peers in adolescence as the closest environment to the child will greatly influence the positive behavior and negative behavior displayed by the child. This period is also puberty, a time when there are rapid changes in physical maturity which include bodily and hormonal changes, especially during early adolescence, where these hormones influence adolescents to explore. This condition makes adolescents often encouraged to try new things, which are challenging, even for prohibited actions, such as adolescent risk behavior or what is known as juvenile delinquency (Handayani et al., 2020).

Juvenile delinquency is an act that violates or violates religious, legal, and social norms (Taisir et al., 2021). Indonesian juvenile delinquency includes three important things, including 1) social problems shown in the form of criminal acts, immorality, promiscuity, smoking, consuming drugs, suicide, and others; 2) cultural problems, such as loss of self-identity by being influenced by outside culture; and 3) morality problems, including adolescent behavior that lacks respect for parents and others. One of the problems that concerns parents and teachers today is smoking (Handayani et al., 2020).

The concerns of parents and teachers in dealing with smoking behavior in adolescents today are increasing, this is evident from the data of the World Health Organization in 2023, tobacco kills up to half of its users who do not quit smoking. Tobacco kills more than 8 million people per year worldwide. More than 7 million of these deaths are the result of direct tobacco use, while about 1.3 million are the result of non-smokers being exposed to secondhand smoke (WHO, 2023). Tobacco use makes it a major risk factor for disease burden and mortality. Tobacco use is responsible for more than 76% of the disease burden of lung cancer, 73% of the disease burden of COPD and laryngeal cancer, and more than 50% of the disease burden of esophageal cancer. The prevalence of tobacco use among adolescents is high, especially among 15-year-olds, and about 90% of tobacco use starts at age less than or equal to 18 years. Those who start smoking in early adolescence are more likely to smoke daily later in life (NCCI Cancer Australia, 2024). In 2023 in the United States, an estimated 10.0% of middle school youth (grades 6-8) and 2.80 million high school youth (grades 9-12) reported current (i.e., past 30 days) tobacco product use. Among middle and high school students, e-cigarette products were the most used tobacco product in 2023 (7.7%; 2.13 million), followed by cigarettes (1.6%), cigars (1.6%), nicotine pouches (1.5%), smokeless tobacco (1.2%), nicotine products (1.2%), smokeless tobacco products (1.2%), and cigarettes (1.2%). (1.2%), other oral nicotine products (1.2%), hookah (1.1%), heated tobacco products (1.0%), and pipe tobacco (0.5%). Among students who have ever used e-cigarettes, 46.7% reported current use (Birdsey et al., 2023).

According to the results of the *Survei Kesehatan Indonesia (SKI)* in 2023, the prevalence of smoking in the population aged 10-18 years in the past 1 month was 4.6% daily smokers and 2.8% occasional smokers. Based on gender, the prevalence of smoking in the population aged 10-18 years in the past 1 month in daily smokers (male by 8.9% and female by 0.1%) and occasional smokers (male by 5.4% and female by 0.1%). Also, the incidence of smoking in the 15-19 years age group was 11.1% daily smokers and 5.6% occasional smokers. This means the incidence of smoking in males is higher than in females (BKPK Kemenkes RI, 2023).

Jambi Province is a province located on the east coast of the central part of the island of Sumatra, known by the slogan Sepucuk Jambi Sembilan Lurah, which is the province with the 11th highest prevalence of smokers out of 34 provinces in Indonesia in the population aged ≥ 15 years by age group, which amounted to 28.67% in 2023. This figure increased by 0.05% from 2022 which was only 28.62% and ranked 12th out of 34 provinces in Indonesia (Badan Pusat Statistik, 2024). Data on the age of first smoking every day at the age of 15-19 years in Jambi Province in 2023 amounted to 49.6% (BKPK Kemenkes RI, 2023).

According to data from the student affairs and dormitory section, it is known that adolescents who violate smoking regulations at Titian Teras HAS Jambi State Senior High School have increased from the previous year. In the 2021/2022 school year, 18 male adolescents were found and in the 2022/2023 school year, 44 male adolescents were found to have violated smoking regulations. Teenagers who violate the smoking regulations have been sanctioned in the

form of suspension outside the dormitory environment by the school. On May 27, 2023, researchers conducted a screening of smoking behavior in adolescents with the results of 43 male adolescents in class X and 46 male adolescents in class XI who had smoking behavior at Titian Teras HAS Jambi State Senior High School.

Adolescence is a period that is very vulnerable to various problems, both personal, learning, social and career problems. Adolescent problems are not only the responsibility of the family but also the responsibility of the school as a formal educational institution. One of the units for handling student problems at school is the counseling guidance service unit which has a strategic role and function in the pattern of character building and successful behavior while studying at school. However, there are still few students (adolescents) utilize guidance and counseling services at school to help solve their problems and develop their potential. Guidance and counseling are still often perceived by students (adolescents) as a judicial institution for negative behavior so that students tend to avoid matters related to guidance and counseling. This shows that empirically guidance and counseling services have not been running well due to the perceptions and attitudes of students who do not give a positive appreciation of the role and function of guidance and counseling in schools (Salmiati et al., 2018).

This phenomenon, in general, occurs in schools. Students are generally more comfortable talking to peers than coming to the guidance and counseling room to consult the problems they face. This shows that when adolescents are faced with a problem in the process of achieving their developmental tasks, these adolescents need friends who are able to accompany their developmental tasks well and can solve the problems they experience together through peers (Salmiati et al., 2018).

Peers are some of the most important social relationships in an adolescent's life. In fact, they often contribute more to their development than the family. Strong peer relationships help adolescents achieve two of the most important tasks, namely building independence and developing personal identity. The presence of peers is like finding a friend when you feel alone in the middle of the wilderness (BKKBN, 2020). Therefore, adolescents need the role of peers as a place to share information and confide/consult related to their growth and development as adolescents. What happens if the adolescents who are used as a place to share information and vent do not have the ability and correct information. Therefore, the presence of peer educators and counselors is needed to meet the needs of these adolescents so that the guarantee of information to be received by peers is in accordance with their abilities and information (BKKBN, 2019).

Peer educators can be defined as peers offering credible and reliable information about sensitive life issues and the opportunity to discuss them in informal peer groups. While peer counselors can be defined as people from similar groups who are not professionals who help clarify life problems and identify solutions by listening, clarifying, responding back, summarizing, questioning and being positive, supporting and reassuring and then helping to plan, organize and solve problems (Topping, 2022).

From the results of research conducted by Dewi et al. (2022), it was found that there was a significant effect in the provision of peer counselor interventions on smoking prevention behavior in adolescents with the p-value obtained in the provision of peer counselor interventions on adolescent smoking prevention was 0.000, the role of parents was 0.000, adolescent peers were 0.004 and the influence of advertising on adolescents was 0.000.

The purpose of this study was to determine the effect of peer educators and counselors on the knowledge and attitudes of adolescents in an effort to quit smoking at Titian Teras HAS Jambi State Senior High School.

2. Methods

The research design used quantitative with pre-experimental research design with one group pre-posttest design technique given intervention. This research was conducted at Titian Teras HAS Jambi State Senior High School. The research time was August 17-31, 2023. Through total sampling, 89 respondents with inclusion criteria were adolescent boys who smoked and

were aged 15-18 years. Bivariate analysis using the non-parametric Wilcoxon Signed Rank Test with a meaning limit of 5% (0.05) and multivariate analysis using ordinal regression which aims to assess the influence of confounding factors (age, economic, psychological, peers, and family) and the most influential on the knowledge and attitudes of adolescents in efforts to quit smoking.

Before the Intervention (Pre-Test)

Researchers together with field supervisors and counseling teachers identified prospective peer educators and counselors, then carried out the selection process stage by filling out the adolescent counseling modality test questionnaire and conducting a personality test provided by the researcher. Then, researchers together with field supervisors and counseling teachers conducted an assessment and determined adolescents who passed to become prospective peer educators and counselors. Furthermore, adolescents who passed were given training to become a peer educators and counselors for two days. After the training, peer educators and counselors measured the knowledge and attitudes of adolescents before the intervention (pre-test) for three days by dividing into one peer group consisting of 5-6 adolescents facilitated by one peer educator and counselor. After conducting the pre-test, peer educators and counselors provided the intervention of *Seminar Generasi Peduli Remaja* with the theme "Healthy Generation Z, Smoke Free Generation" using the *Modul Perubahan* with the topics of smoking kills you, efforts to quit smoking, and educational videos using laptop and infocus media for one day.

After the Intervention (Post-Test)

After the intervention, peer educators and counselors administered a post-test questionnaire to re-measure the level of knowledge of adolescents in efforts to quit smoking. Furthermore, peer educators and counselors provided counseling to groups of adolescents three times a week. After providing counseling, peer educators and counselors administered a post-test questionnaire to measure the level of adolescents' attitudes towards efforts to quit smoking.

3. Results and Discussion

3.1 Characteristics of Respondent

Table 1 Distribution of Respondent Characteristics Based on Age at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Mean	Standard Deviation	Min-Max
Age (years)	16,11	0,714	15-17

The results of the analysis in table 1 show that of the 89 adolescents who smoked, it was found that the majority of adolescents in this study were in the middle adolescent category (15-18 years) with an average age of 16.11 years. According to the researcher, children with middle adolescence are in search of self-identity and feel like they want to look cool in front of their peers. At this age, adolescents are easily influenced by their peers if they do not have sufficient experience in assessing a good friendship environment. For this reason, adolescents should be careful in choosing a social environment so as not to fall into a negative social environment.

The results of this study are in line with research conducted by Pratiwi (2022) showing that age is one of the factors that influence adolescent smoking behavior. Adolescent age may not have a direct impact on adolescent smoking behavior but other factors. Some of these factors such as region of residence, mother's education, adolescent work behavior, and the presence of household members who smoke. Today's adolescent smokers are tomorrow's potential customers, and it is our duty to break the chain.

Table 2 Distribution of Respondents Characteristics Based on Economic, Psychological, Peers, and Family at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Frequency	
	Σ	%
Economy		
< Rp30.000,-/day	27	30,3
≥ Rp30.000,-/day	62	69,7
Psychological		
Provides enjoyment	26	29,2
Controls stress	63	79,8
Peers		
No smoking	16	18,0
Smoking	73	82,0
Family		
No smoking	8	9,0
Smoking	81	91,0
Total	89	100

The results of the analysis in table 2 show that of the 89 adolescents who smoke, the majority of the characteristics of adolescents based on the economy are pocket money \geq Rp30,000, - per day as many as 62 (69.7%) adolescents. According to the researchers, adolescents who smoke are related to varying family economic status. This condition can be influenced by the pocket money received by adolescents from parents. The higher the pocket money, the greater the opportunity for adolescents to buy cigarettes. However, adolescents who have an allowance of <Rp30,000 per day do not mean that they do not have the opportunity to buy cigarettes, they can set aside their pocket money to buy cigarettes, either buy cigarettes in bars, buy in contributions with peers, or are given by peers.

The results of the analysis in table 2 show that of the 89 adolescents who smoke, the majority of the characteristics of adolescents based on psychology are more than some smoking can control stress as many as 63 (79.8%) adolescents. According to the researcher, this condition is based on adolescents' perception of smoking that smoking can reduce stress. Other perceptions of adolescents are busy teaching and learning activities, the prohibition of bringing cellphones and laptops to the dormitory environment, and as a form of rebellion against parents for adolescents who actually do not want to go to school there, causing these adolescents to make cigarettes as a transition. It can be concluded that the higher the level of stress experienced by adolescents, the higher the chance of smoking behavior in adolescents, especially for adolescents who are unable to divert it to positive activities such as extracurricular activities provided by the school.

The results of the analysis in table 2 show that of the 89 adolescents who smoke, the majority of adolescent characteristics based on peers are dominated by smoking as many as 73 (82.0%) adolescents. According to the researcher, this is influenced by the age of adolescents who want to be accepted in their peer group and look cool in the eyes of other peers, especially the opposite sex. Thus, the influence of peers, especially those who live in the same room in the dormitory, has a high level of influence on adolescent smoking behavior compared to living in the same room with peers who do not smoke. However, adolescents who live in the same room with non-smoking peers can have smoking behavior because they are in the same class with friends who smoke and sleep or play in the rooms of smoking peers so that they are influenced by smoking peers.

The results of the analysis in table 2 show that of the 89 adolescents who smoke, the majority of the characteristics of adolescents based on family are almost entirely smoking as many as 81 (91.0%) adolescents. According to researchers, families who smoke indirectly set a bad example to adolescents. Families who smoke should be more aware and pay attention that adolescents follow or imitate their family members who smoke at home. For this reason, the family as the first smallest social unit for adolescents in order to provide good examples and images as well as knowledge about the dangers of smoking so that adolescents are equipped with knowledge of the dangers of smoking early on.

Table 3 Distribution of Respondents Characteristics Based on Knowledge and Attitude of Adolescents Before and After Intervention at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Σ	Frequency	%
Knowledge			
Before			
Good Knowledge	10		11,2
Moderate Knowledge	38		42,7
Poor Knowledge	41		46,1
After			
Good Knowledge	52		53,5
Moderate Knowledge	25		27,5
Poor Knowledge	12		19,0
Attitude			
Before			
Good Attitude	20		22,5
Moderate Attitude	31		34,8
Poor Attitude	38		42,7
After			
Good Attitude	50		56,2
Moderate Attitude	28		31,5
Poor Attitude	11		12,4
Total	89		100

The results of the analysis in table 3 show that of the 89 adolescents who smoke, it can be seen that the characteristics of adolescents based on adolescents' knowledge in efforts to quit smoking show that before being given the intervention, almost half were less knowledgeable as many as 41 (46.1%) adolescents, while after being given the intervention more than half were well informed as many as 52 (53.5%) adolescents. According to researchers, adolescents' knowledge in efforts to quit smoking is influenced by adolescents' desire to access information about the dangers of smoking, both from the internet, social media, and counseling. The higher the desire of adolescents to access information and curiosity about the dangers of smoking, the greater the opportunity for adolescents to increase their knowledge.

The results of the analysis in table 3 show that of the 89 adolescents who smoke, it can be seen that the characteristics of adolescents based on adolescent attitudes in efforts to quit smoking show that before being given the intervention, almost half of them were less as many as 38 (42.7%) adolescents, while after being given the intervention more than half were good as many as 50 (56.2%) adolescents. According to the researchers, the attitude of adolescents in an effort to quit smoking is influenced by adolescents' knowledge about the dangers of smoking. The better the knowledge of adolescents about the dangers of smoking, the more it will affect the attitude of adolescents in deciding to quit smoking. However, good adolescent knowledge is still not strong enough to influence adolescent attitudes in the desire to quit smoking if it is not accompanied by a strong commitment to quit smoking. This is influenced by the desire to return to smoking from the nicotine withdrawal effect and environmental factors, such as peers, family, and teachers who smoke, as well as school rules regarding No Smoking Area.

3.2 The Effect of Peer Educators and Counselors on Adolescent Knowledge in Efforts to Quit Smoking

Table 4 Differences in Knowledge of Adolescents in Efforts to Quit Smoking Before and After Intervention at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Mean	Min-Max	P-Value
Knowledge			

Variable	Mean	Min-Max	P-Value
Before	20,43	4-31	0,000
After	26,79	8-31	
Difference (Δ)	6,36		

The results of the analysis in table 4 show that the average knowledge of adolescents in efforts to quit smoking for 2 weeks after the intervention has increased by 6.36. The results of statistical tests for knowledge obtained p-value: 0.000 ($p < 0.05$), so it can be concluded that there are differences in adolescent knowledge in efforts to quit smoking before and after being given interventions by peer educators and counselors.

Table 5 Differences in Mean Knowledge of Adolescents in Efforts to Quit Smoking Before and After Intervention at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Mean Rank		P-Value
	Before	After	
Knowledge	14,67	24,12	0,000

The results of the analysis in table 5 shows that the mean difference in knowledge before the intervention was 14.67 and after the intervention was 24.12 with a p-value: $0.000 < 0.05$, meaning that there is a significant difference in the average knowledge of adolescents in efforts to quit smoking between before and after the intervention. Based on table 5, it can be concluded that there is a difference in the average knowledge of adolescents after being given the intervention in an effort to quit smoking at Titian Teras HAS Jambi State Senior High School.

The results of this study are in line with research conducted by [Nurleny \(2018\)](#) which states that there is a significant increase in the difference in knowledge about smoking before and after receiving peer group education interventions in adolescents with a p-value: $0.000 < 0.05$. Another study conducted by [Dewi et al. \(2022\)](#) also stated that there was an effect of providing peer counselors on adolescent smoking prevention behavior. Cognition knowledge is a very important domain in shaping a person's actions ([Pakpahan et al., 2021](#)). Knowledge is an interpretation or information about a subject that you receive through experience or study, whether known by one person or by people in general ([Cambridge Dictionary, 2023](#)).

Knowledge is also something that comes from the five senses and experiences that have been processed by the mind and arise spontaneously, intuitively, and subjectively. In addition, knowledge is also true because according to reality, knowledge is also the basis of human thinking in doing things related to finding answers to existing questions, such as those related to adolescent health in an effort to quit smoking. In general, knowledge can be obtained from various sources of information, one of which is through peer educators and counselors in this study using the change module.

Peer educators and counselors are one way for adolescents to provide understanding to their friends to be able to understand themselves and their environment, help prevent various problems that can hinder their development, assist in overcoming problems experienced by their friends and provide assistance in maintaining and developing various potential and positive conditions possessed by adolescents ([Dewi et al., 2022](#)). This activity aims to provide benefits and influence to peers in helping to change the knowledge and attitudes of adolescents in order to achieve awareness of the importance of health effects in quality life ([Yuliani, 2018](#)).

Health Promotion Model (HPM) by Pender suggests the importance of cognitive processes or knowledge in behavior change ([Alligood et al., 2017](#)). Knowledge in this study is adolescents' understanding of the intervention of the dangers and efforts to quit smoking contained in the *Modul Perubahan*. This intervention is carried out by peer educators as peer education is considered a strategic approach to health promotion in adolescents, where adolescents are supported to promote health-enhancing changes among their peers.

Support from the peer environment will affect a person's thinking patterns. Information, knowledge and experience from peers will make a person see a problem from two different perspectives. If the information and experience from peers is positive and favorable enough, it can be used as a reference material before taking an action. Peer educators try to change a person's

knowledge, attitudes and actions. This educational activity is also called Communication, Information and Education (IEC) activity which plays an important role in socialization efforts and providing basic knowledge. Through peer educators, it can make more open and play an active role in activities carried out with a friendly approach that is not patronizing or judgmental (Yuliani, 2018).

This study is not intended to look in depth (qualitative) at the variables studied. The sampling technique in this study was total sampling. This means that all samples in this study are intervention groups. Thus, there is no control group (comparison) of knowledge and attitudes of adolescents in efforts to quit smoking. So, further research is recommended so that it can be known which control group has the most dominant effect on the knowledge and attitudes of adolescents in an effort to quit smoking.

Based on the results of this study, peer educators and counselors are very influential on adolescents' knowledge because educators and youth counselors are educators who have an important role in increasing adolescents' knowledge so that if peer educators and counselors are not able to master the material that has been given by researchers, adolescents' actions to increase their knowledge will not be maximized due to the low knowledge of adolescents so that only what they know they do. To increase adolescents' knowledge, it is recommended that Titian Teras HAS Jambi State Senior High School continue efforts to increase adolescents' knowledge and attitudes in efforts to quit smoking by involving all *Pamong Pengajar Pengasuh (P3)* and the community in the environment of Titian Teras HAS Jambi State Senior High School to become role models in the No Smoking Area. Conduct good cooperation and involve peer educators and counselors in school activities and conduct counseling so that adolescents can know the importance of the role of peer educators and counselors in increasing efforts to quit smoking.

3.3 The Effect of Peer Educators and Counselors on Adolescents' Attitudes in Efforts to Quit Smoking

Table 6 Differences in Attitudes of Adolescents in Efforts to Quit Smoking Before and After Intervention at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Mean	Min-Max	P-Value
Attitude			
Before	58,98	19-85	0,000
After	70,30	19-88	
Difference (Δ)	11,32		

The results of the analysis in table 6 show that the average attitude of adolescents in efforts to quit smoking for 2 weeks after the intervention has increased by 11.32. Compared to the adolescent knowledge variable, the adolescent attitude variable has increased more. Statistical test results for attitude obtained p-value: 0.000 ($p < 0.05$), so it can be concluded that there are differences in adolescents' attitudes in efforts to quit smoking before and after being given interventions by peer educators and counselors.

Table 7 Differences in Mean Attitude of Adolescents in Efforts to Quit Smoking Before and After Intervention at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Mean Rank		P-Value
	Before	After	
Attitude	16,00	26,46	0,000

The results of the analysis in table 7 show that the mean difference in attitude before the intervention was 16.00 and after the intervention was 26.46 with a p-value: 0.000 < 0.05 , meaning that there is a significant difference in the average attitude of adolescents in an effort to quit smoking between before and after the intervention. Based on table 7, it can be concluded that there is a difference in the average attitude of adolescents after being given the intervention in an effort to quit smoking at Titian Teras HAS Jambi State Senior High School.

Research conducted by [Nurleny \(2018\)](#), stated that there were differences in attitudes about smoking before and after getting peer group education interventions in adolescents with a p-value: 0.000 ($p < 0.05$). Another study conducted by [Ayunin et al. \(2021\)](#) stated that the results of stage two evaluation or learning evaluation showed a very good and positive change in attitudes related to beliefs about smoking behavior.

Attitude is a thought or opinion or feeling towards a particular object or person or event ([Swarjana, 2022](#)). Information support that comes from people who are considered influential by someone will make someone feel more comfortable. From an emotional point of view, someone who gets support from peers will feel valued, loved and a sense of belonging because in peer groups, each member will have a close personal relationship so that they will be more open to their peers about all the problems they face ([Yuliani, 2018](#)).

Another study conducted by [Mustofa et al. \(2020\)](#) stated that empowering students as peer educators in the context of efforts to prevent smoking behavior of elementary school students. This activity succeeded in increasing students' understanding and awareness of the dangers of smoking for health which will support the improvement of the competitiveness of the younger generation through improving human resources such as improving adolescent health levels.

The Health Promotion Model theory states that positive and negative attitudes appear before, during, and after treatment derived from the nature of the stimulus. Attitudes related to activities affect perceived self-efficacy, so that the more positive a person feels, the greater the motivation in him. Increased self-efficacy can result in a positive attitude ([Alligood et al., 2017](#)). In this study, the stimulus is provided by peer counselors who aim to influence adolescents' self-confidence in bringing up a positive attitude in efforts to quit smoking and adolescent health.

An attitude is not automatically manifested in an action (overt behavior). To realize an attitude into a real action requires supporting factors or a condition that allows, among others, facilities. Besides the facility factor, support from other parties is also needed, for example from family, peers, and others ([Pakpahan et al., 2021](#)). After support from peers can benefit the cognitive and affective aspects, it will also affect the behavior or psychomotor of the individual. Information support from peers will help a person make decisions and take action in solving a problem he is facing. With the support of the peer environment, individuals will be more responsible for their actions as a form of social responsibility ([Yuliani, 2018](#)).

Efforts to prevent and control smoking in adolescents can be done by improving adolescents' knowledge and attitudes towards the dangers of smoking. The family provides its role and support for adolescents not to smoke. As well as the existence of school rules and regulations that are strengthened by school regulations and policies that support the No Smoking Area ([Oktania et al., 2023](#)).

Based on the results of this study; to strengthen adolescents' commitment to quit smoking, adolescents should take the time to consult with peer counselors about the dangers of smoking and the problems faced by adolescents in their efforts to quit smoking. Peer counselors help adolescents distract from the desire to smoke again and increase adolescents' curiosity about the ways and management of efforts to quit smoking through continuous counseling and the *Upaya Berhenti Merokok (UBM)* program and utilize information media to increase adolescents' knowledge.

3.4 The Effect of Confounding Variables on Adolescents' Knowledge in Efforts to Quit Smoking

Table 8 Formation of Ordinal Logistic Regression Model Analysis of Confounding Factors on Adolescents' Knowledge in Efforts to Quit Smoking at Titian Teras HAS Jambi State Senior High School, August 2023, (n=89)

Variable	Estimate	S.E.	Wald	Sig.	95% C.I. for EXP(B)	
					Lower	Upper
Adolescent Age	0,828	0,106	61,605	0,000	0,621	1,035

Variable	Estimate	S.E.	Wald	Sig.	95% C.I. for EXP(B)	
					Lower	Upper
Economy	0,989	0,091	118,605	0,000	0,811	1,167
Family	0,776	0,145	28,591	0,000	0,492	1,060

The results of the analysis in table 8 show that the formation of the model on the age factor of adolescents obtained p-value: 0.000 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of the age factor on adolescent knowledge in an efforts to quit smoking at Titian Teras HAS Jambi State Senior High School. According to researchers, adolescence is an age where curiosity about something is great, one of which is smoking. This curiosity encourages adolescents to try new things that have never been done before. This without being equipped with knowledge of the dangers of smoking can lead adolescents to smoking behavior. This is in line with research conducted by [Muslim et al. \(2023\)](#) that one of the confounding factors affecting knowledge is age.

The results of the analysis in table 8 show that the formation of the model on economic factors obtained p-value: 0.000 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of economic factors on adolescent knowledge in efforts to quit smoking at Titian Teras HAS Jambi State Senior High School. According to the researchers, the economic status of the family plays an important role in adolescent knowledge. Families with middle to upper economic status will be motivated to provide proper education and supporting facilities so that adolescents will have a wider opportunity to gain knowledge about the dangers of smoking. Vice versa with low economic status families.

The results of the analysis in table 8 show that the formation of the model on family factors obtained p-value: 0.000 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of family factors on adolescent knowledge in efforts to quit smoking at Titian Teras HAS Jambi State Senior High School. According to the researchers, family has an important role in adolescent knowledge. Families with higher education and knowing the dangers of smoking for health will tend to avoid smoking and try to provide education to their children. However, it is not uncommon for highly educated families to ignore the dangers of smoking for health so that they have a smoking habit at home, this will have a bad influence on adolescents.

3.5 The Effect of Confounding Variables on Adolescents' Attitude in Efforts to Quit Smoking

Table 9 Formation of Ordinal Logistic Regression Model Analysis of Confounding Factors on Adolescents' Attitude in Efforts to Quit Smoking at Titian Teras HAS Jambi State Senior High School, August 2023 (n=89)

Variable	Estimate	S.E.	Wald	Sig.	95% C.I. for EXP(B)	
					Lower	Upper
Adolescent Age	1,092	0,102	115,143	0,000	0,893	1,291
Economy	0,540	0,088	37,540	0,000	0,367	0,714
Psychological	0,173	0,088	3,889	0,049	0,001	0,345
Peers	0,560	0,111	25,280	0,000	-0,778	-0,342
Family	0,356	0,145	6,021	0,014	0,072	0,641

The results of the analysis in table 9 show that the formation of the model on the adolescent age factor obtained a p-value: 0.000 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of adolescent age factors on adolescent attitudes in efforts to quit smoking at Titian Teras HAS Jambi State Senior High School. According to researchers, adolescence is an age range affected by the surrounding environment. Curiosity is one of the factors teenagers try new things. Adolescents' carelessness in making decisions in attitude can lead adolescents to bad behavior, one of which is smoking. This is in line with research conducted by [Juliansyah & Rizal \(2018\)](#) which states that one of the factors of adolescent smoking is age. Young age is an age that is very

vulnerable to being influenced and very easily influenced by other people, especially people who are known to be close to them, both directly and indirectly.

The results of the analysis in table 9 show that the formation of the model on economic factors obtained p-value: 0.000 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of economic factors on the attitude of adolescents in an effort to quit smoking at Titian Teras HAS Jambi State Senior High School. According to the researchers, the economic condition of the family will affect the amount of pocket money that adolescents receive from their parents. The pocket money received by adolescents can be misused if adolescents are not able to manage their pocket money wisely. Teenagers with excess pocket money have a great opportunity to buy cigarettes. Meanwhile, adolescents with mediocre pocket money can still buy cigarettes by buying bars, joint ventures with peers, or may be given by peers. This is in line with research conducted by Gwon RN et al. (2018) on adolescent students in South Korea explained that factors influencing adolescent smoking include the economic status of students consisting of 66.8% middle economy, 19.2% upper economy, and 14.0% lower economy. The average weekly pocket money of students is 14769 South Korean Won equivalent to US \$13.42 or around Rp.174,460 so that they have the ability to buy cigarettes.

The results of the analysis in table 9 show that the formation of the model on psychological factors obtained p-value: 0.049 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of psychological factors on adolescent attitudes in an effort to quit smoking at Titian Teras HAS Jambi State Senior High School. According to researchers, the psychological factor of adolescents that smoking can control stress is influenced by the nicotine content that makes adolescents addicted so it is difficult to stop the smoking behavior. This is in line with research conducted by Wulan (2012) which states that the factor that plays the most role in adolescents becoming smokers is the desire of adolescents to know the taste of cigarettes, image formation factors that feel they have an adult image and show maturity by smoking, and seeing friends smoking.

The results of the analysis in table 9 show that the formation of the model on peer factors obtained p-value: 0.000 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of peer factors on adolescent attitudes in an effort to quit smoking at Titian Teras HAS Jambi State Senior High School. According to the researchers, peer factors who smoke and live in the same room in the dormitory and family members who smoke are the biggest challenges for adolescents who want to quit smoking. According to Lestari et al. (2020), smoking is considered a habit in association in order to blend in with each other, in other words, someone accepting an invitation to smoke is a form of respect for a friend's invitation to maintain solidarity. This is in line with research conducted by Solihin et al. (2023), shows that the role of friends is known that more students state that they have friends playing a role as many as 64 people (75.3%) and respondents whose peers do not play a role with smoking behavior as many as 3 people (3.5%).

The results of the analysis in table 9 show that the formation of the model on family factors obtained p-value: 0.014 ($p < 0.05$), then H_0 is rejected, meaning that there is an influence of family factors on adolescent attitudes in an effort to quit smoking at Titian Teras HAS Jambi State Senior High School. According to the researcher, the family is the closest environment to adolescents who have responsibility for the formation of norms and instilling values in the process of shaping adolescent attitudes. Adolescent attitudes are formed from how the role of parents in educating and providing examples to adolescents in everyday life. Families who have a smoking habit will have a bad influence on adolescents. For this reason, the role of the family is needed, such as providing attention and guidance from parents so that it can prevent adolescent attitudes in making decisions to have a smoking habit. This is in line with research conducted by Yuliana D et al. (2019) shows that a lack of family role will have an impact on adolescent smoking habits, while a good family role will also have a good impact on adolescent smoking habits.

4. Conclusion

The findings revealed that there is a difference in knowledge and attitude of adolescents in efforts to quit smoking before and after intervention by peer educators and counselors at Titian Teras HAS Jambi State Senior High School. In addition, there are also confounding factors: age,

economy, and family that most influence the knowledge of adolescents and confounding factors: age, economy, and peers that most influence the attitude of adolescents in an efforts to quit smoking at Titian Teras HAS Jambi State Senior High School.

Ethics Approval and Consent to Participate

Before conducting the research, the first step taken by the researcher was to apply for ethical clearance to the Research Ethics Commission of the Faculty of Nursing, University of Muhammadiyah Jakarta. After being declared to have passed the ethical test with a Certificate of Passing Ethical Review with the number: 0889/F.9-UMJ/VI/2023, then the researcher submitted a research permit application letter to the research institution, namely the Head of Titian Teras HAS Jambi State Senior High School.

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