

ANALYSIS OF DETERMINANTS INFLUENCING STUDENTS' SMOKING BEHAVIOR AT STATE ISLAMIC HIGH SCHOOL 2 MOJOKERTO REGENCY

Mahfida Inayati¹,Sulis Diana², Dhonna Anggreni³,Arief Fardiansyah⁴

^{1,2,3,4}STIKES Majapahit Mojokerto

Email Corresponding Author :

diana.sulis6@gmail.com

ABSTRACT

Smoking behavior in adolescents causes various serious health problems, such as heart disease, lung cancer, respiratory disorders and many other health problems. Smoking in childhood is a predictive factor for smoking in adulthood. **Research objectives:** To determine the factors that influence the smoking behavior of students at MAN II, Mojokerto Regency.

This type of research is observational analytical research. Analytical observational research, with a cross-sectional research design. The population of this study was limited to 11th grade students of MAN II Mojokerto in the 2024-2025 academic year of 163 students with a sample of 116 respondents. Data collection techniques used questionnaires or data from researcher interviews. Statistical tests used the chi square test and logistic regression test.

Results :There is a significant influence between smoking motivation on smoking behavior in students ($0.000 < 0.05$), there is a significant influence between role teachers on smoking behavior ($0.028 < 0.05$), there is a significant influence between peer factors on smoking behavior ($0.000 < 0.05$), there is a significant influence between advertising exposure factors on smoking behavior ($0.039 < 0.05$).

Conclusion and suggestions:There is a significant influence between knowledge about dangers smoking, smoking motivation, the role of teachers, peers and exposure to advertising on students at MAN II, Mojokerto Regency. Schools are expected to provide regular counseling and education about the dangers of smoking for teenagers. In an interesting way such as using animated videos, Q&A, and playing.

Keywords: knowledge, smoking motivation, role of teachers, peers, exposure to advertising, smoking behavior

INTRODUCTION

Smoking behavior in adolescents causes various serious health problems, such as heart disease, lung cancer, respiratory disorders and many other health problems. Smoking in childhood is a predictive factor for smoking in adulthood (Thompson, et al, 2011). Smoking damages the physical fitness of young people, both in terms of performance and endurance, even in young people who are trained to exercise. Adolescents who smoke are three times more likely to

consume alcohol and eight times more likely to consume marijuana than adolescents who do not smoke. Smoking is also associated with fighting behavior and free sex (WHO, 2024).

Smoking behavior among adolescents in Indonesia is still high, even experiencing an increase that must be watched out for. Based on CDC data, in 2021 as many as 80.2% of high school students had used cigarettes and tobacco products and in 2023 as many as 90.3% of high school students had used e-cigarettes (CDC, 2023). Meanwhile, data from the 2021 Global Youth Tobacco Survey, the number of male and female adolescent smokers aged 13-15 was 18.8%, the number of male and female adolescent smokers over 15 years was 33.5%. In female adolescents, the number of smokers increased by 0.4% from 2.5 percent (2014) to 2.9 percent (2019). In male adolescents, the number of smokers increased by 1.6% from 33.9 percent (2014) to 35.5 percent (2019).

Behavioral theory by Green (1992), better known as the precede-proceed Model, states that factors that influence (determinant) individual and group behavior such as smoking, include Education, Health, policy or regulation, and there are three main factors (Green & Kreuter, 1992). The three main factors are predisposing factors such as knowledge and attitudes, enabling factors such as socio-economic access, and reinforcing factors such as the influence of parents, peers, teachers, and the residential environment (Notoatmodjo, 2010).

Several factors that influence smoking behavior in adolescents can be seen from the reviews of experts as according to Kurt Lewin, that smoking behavior is a function of the environment and the individual. This means that smoking behavior is not only caused by internal factors, but also by environmental factors.

The above research shows that advertising influences teenagers to start smoking. Considering the impact of smoking behavior on teenagers which is very detrimental both in terms of health, psychosocial, economic and environmental aspects that can reduce the quality of Indonesian human resources and its nature that causes dependence, it is very necessary to know the factors that influence teenagers' behavior to smoke so that we can hopefully formulate prevention and solutions to overcome it. As one of the efforts for this, the researcher chose to research this topic.

RESEARCH METHODS

This type of research is observational analytical research. Analytical observational research, with a cross-sectional research design. The population of this study was limited to 11th grade students of MAN II Mojokerto in the 2024-2025 academic year totaling 163 students with a sample of 116 respondents. Data collection techniques used questionnaires or data from interviews with researchers. Statistical tests used the chi square test and logistic regression test. The independent variables of this study are knowledge about the dangers of smoking, motivation, the role of health workers, peers, and exposure to advertising. The dependent variable in this study is smoking behavior. This research was conducted at MAN II Mojokerto and the time of the study was conducted from July to August 2024.

RESEARCH RESULT

1. General Data

- a. Respondent characteristics based on age, parental education, number of siblings, family smokers and caregivers

**Table 1. Frequency Distribution of Respondents at MAN
IIMojokerto Regency**

No	Age	Frequency (f)	Percentage (%)
1	15 years	33	28.4
2	16 years	42	36.3
3	17 years	41	35.3
Total		116	100
No.	Parent Education	Frequency (f)	Percentage (%)
1	Junior High School/Equivalent	19	16.4
2	High School/Equivalent	60	51.7
3	College	37	31.9
Total		116	100
No	Number of Siblings	Frequency (f)	Percentage (%)
1	1	5	4.3
2	2	62	53.4
3	≥ 3	49	42.2
Total		116	100
No	Smoker Family	Frequency (f)	Percentage (%)
1	Yes	60	51.7
2	No	56	48.3
Total		116	100
No	Caregiver	Frequency (f)	Percentage (%)
1	Parent	113	97.4
2	Grandma	3	2.6
Total		116	100

Based on table 1 above, it can be seen that almost half of the respondents are 16 years old, as many as 42 respondents (36.3%). Most of the respondents' parents have a high school/equivalent education, namely 60 respondents (51.7%). Furthermore, most of the respondents have 2 siblings, namely 62 respondents (53.4%). And most of the respondents come from active smoker families, namely 60 respondents (51.7%). And almost all respondents are raised by their own parents, namely 113 respondents (97.4%).

2. Special Data

- b. Respondent Characteristics Based on Knowledge, Smoking Motivation, Role of Teachers, Peers and Advertising and Smoking Behavior

Table 2. Frequency Distribution of Respondents at MAN II, Kabupaten Mojokerto

No	Knowledge	Frequency (f)	Percentage (%)
1	Good	83	71.6
2	Not enough	33	28.4
Total		116	100
No	Motivation to smoke	Frequency (f)	Percentage (%)
1	Tall	106	91.4
2	Low	10	8.6
Total		116	100
No	The Role of Teachers	Frequency (f)	Percentage (%)
1	Support	62	53.4
2	Lack of Support	54	46.6
Total		116	100
No	Friends of the same age	Frequency (f)	Percentage (%)
1	Non-Smoker	87	75.0
2	Smoker	29	25.0
Total		116	100
No	Ad Exposure	Frequency (f)	Percentage (%)
1	Not Affected	60	51.7
2	Affected	56	48.3
Total		116	100
No	Smoking Behavior	Frequency (f)	Percentage (%)
1	Do not smoke	93	80.2
2	Smoke	23	19.8
Total		116	100

Based on table 2 above, it can be seen that most respondents have good knowledge, namely 83 respondents (71.6%). Almost all respondents have high smoking motivation, namely 106 respondents (91.4%). And most respondents have a supportive teacher role, namely 62 respondents (53.4%). Most respondents have peers who are not smokers, namely 87 respondents (75.0%). And most respondents are not influenced by advertisements, namely 60 respondents (51.7%). And also almost all respondents do not smoke, namely 93 respondents (80.2%).

- c. The Influence of Knowledge Factors About the Dangers of Smoking on Smoking Behavior among Students at MAN II Mojokerto Regency.

Table 3. Influence of Knowledge Factors About DangerSmokeOn Smoking Behavior of Students at MAN II Mojokerto Regency

Knowledge	Smoking Behavior				Total		P Value
	No		Smoke				
	f	%	f	%	f	%	
Good	68	58.6	15	12.9	83	71.6	0.045
Not enough	25	21.6	8	6.9	33	28.4	
Total	93	80.2	23	19.8	116	100	

Based on table 3, the results show that students who own There were 15 respondents (12.9%) who had good knowledge and smoked, and 8 respondents (6.9%) had poor knowledge but smoked.

Based on the results of the chi-square test, the probability result (p-value) was $0.045 < 0.05$, which means that at 5% alpha there is a significant influence between knowledge about the dangers of smoking and smoking behavior among students at MAN II, Mojokerto Regency.

- d. The Influence of Smoking Motivation Factors on Smoking Behavior in Students at MAN II, Mojokerto Regency.

Table 4. The Influence of Smoking Motivation Factors on Smoking Behavior in Students at MAN II, Mojokerto Regency

Motivation to smoke	Smoking Behavior				Total		P Value
	No		Smoke		f	%	
	f	%	f	%			
Tall	91	78.5	15	12.9	106	91.4	0.000
Low	2	1.7	8	6.9	10	8.6	
Total	93	80.2	23	19.8	116	100	

Based on table 4, the results show that students who have high smoking motivation and smoke are 15 respondents (12.9%), and those who have low motivation but smoke are 8 respondents (6.9%).

Based on the results of the chi-square test, the probability result (p-value) was $0.000 < 0.05$, which means that at 5% alpha there is a significant influence between smoking motivation and smoking behavior in students at MAN II, Mojokerto Regency.

- e. The Influence of Teacher Role Factors on Smoking Behavior in Students at MAN II Mojokerto Regency.

Table 5. Influence of Teacher Role Factors on Smoking Behavior in Students at MAN II Mojokerto Regency

The Role of Teachers	Smoking Behavior				Total		P Value
	No		Smoke				
	f	%	f	%	f	%	
Support	52	44.8	10	8.6	62	53.4	0.028
Lack of Support	41	35.4	13	11.2	54	46.6	
Total	93	80.2	23	19.8	116	100	

Based on table 5, the results show that students with supportive teacher roles who smoke are 10 respondents (8.6%), and teachers who are less supportive but students still smoke are 13 respondents (11.2%).

Based on the results of the chi-square test, the probability result (p-value) was $0.028 < 0.05$, which means that at 5% alpha there is a significant influence between the role of teachers on smoking behavior in students at MAN II, Mojokerto Regency.

- f. The Influence of Peer Factors on Smoking Behavior in Students at MAN II, Mojokerto Regency.

Table 6. Influence of Peer Factors on Smoking Behavior in Students at MAN II Mojokerto Regency

Friends of the same age	Smoking Behavior				Total		P Value
	No		Smoke		f	%	0.000
	f	%	f	%			
Non-Smoker	79	68.1	8	6.9	87	75.0	
Smoker	14	12.1	15	12.9	29	25.0	
Total	93	80.2	23	19.8	116	100	

Based on table 6, the results show that students who have peers who are not smokers and smoke are 8 respondents (6.9%), and students who have peers who are smokers and students who also smoke are 15 respondents (12.9%).

Based on the results of the chi-square test, the probability result (p-value) was $0.000 < 0.05$, which means that at 5% alpha there is a significant influence between peer factors on smoking behavior in students at MAN II, Mojokerto Regency.

- g. The Influence of Advertising Exposure Factors on Smoking Behavior among Students at MAN II, Mojokerto Regency.

Table 7. The Influence of Advertising Exposure Factors on Smoking Behavior among Students at MAN II, Mojokerto Regency

Ad Exposure	Smoking Behavior				Total		P Value
	No		Smoke				
	f	%	f	%	f	%	
Not Affected	52	44.8	8	6.9	60	51.7	0.039
Affected	41	35.4	15	12.9	56	48.3	
Total	93	80.2	23	19.8	116	100	

Based on table 7, the results show that students who are not influenced by exposure to advertising and smoking are 8 respondents (6.9%), and students who are influenced by exposure to advertising and students who also smoke are 15 respondents (12.9%).

Based on the results of the chi-square test, the probability result (p-value) was $0.039 < 0.05$, which means that at 5% alpha there is a significant influence between advertising exposure factors on smoking behavior in students at MAN II, Mojokerto Regency.

- h. The Influence of Knowledge Factors About the Dangers of Smoking, Smoking Motivation, the Role of Teachers, Peers and Exposure to Advertisements on Smoking Behavior in Students at MAN II, Mojokerto Regency.

Table 8. The Influence of Knowledge Factors About the Dangers of Smoking, Motivation to Smoke, the Role of Teachers, Peers and Exposure to Advertising on Smoking Behavior in Students at MAN II, Mojokerto Regency

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Knowledge	0.627	0.620	1,023	1	0.031	1,872
Motivation to smoke	2,820	0.919	9.424	1	0.002	16,771
The Role of Teachers	-0.409	0.634	0.416	1	0.042	0.664
Friends of the same age	2,569	0.744	11,935	1	0.001	13,054
Ad Exposure	-0.593	0.720	0.677	1	0.041	0.553

Based on table 8 above, of the 5 independent variables tested, all variables are significant (influential), Multivariate analysis in the logistic regression test proves that all variables have a strong influence on

smoking behavior in students at MAN II Mojokerto Regency. The results of the independent variable test can be explained as follows:

1) The Influence of Knowledge Factors About the Dangers of Smoking on Smoking Behavior

It is known that the Sig value for the influence of the knowledge factor about the dangers of smoking is $0.031 < 0.05$ so it can be concluded that H1 is accepted, which means that there is an influence of the knowledge factor about the dangers of smoking on smoking behavior in students at MAN II Mojokerto Regency.

2) The Influence of Smoking Motivation Factors on Smoking Behavior

It is known that the Sig value for the influence of smoking motivation factors is $0.002 < 0.05$ so it can be concluded that H2 is accepted, which means that there is an influence of smoking motivation factors on smoking behavior in students at MAN II, Mojokerto Regency.

3) The Influence of Teacher Role Factors on Smoking Behavior

It is known that the Sig value for the influence of the teacher's role factor is $0.042 < 0.05$ so it can be concluded that H3 is accepted, which means that there is an influence of the teacher's role factor on smoking behavior in students at MAN II, Mojokerto Regency.

4) The Influence of Peer Factors on Smoking Behavior

It is known that the Sig value for the influence of peer factors is $0.001 < 0.05$ so it can be concluded that H4 is accepted, which means that there is an influence of peer factors on smoking behavior in students at MAN II, Mojokerto Regency.

5) The Influence of Advertising Exposure Factors on Smoking Behavior

It is known that the Sig value for the influence of advertising exposure factors is $0.041 < 0.05$ so it can be concluded that H5 is accepted, which means that there is an influence of advertising

exposure factors on smoking behavior among students at MAN II Mojokerto Regency.

DISCUSSION

1. The Influence of Knowledge Factors About the Dangers of Smoking on Smoking Behavior in Students at MAN II Mojokerto Regency

The results showed that students who had good knowledge and smoked were 15 respondents (12.9%), and those who had less knowledge but smoked were 8 respondents (6.9%). Based on the results of the chi-square test, the probability result (p-value) was $0.045 < 0.05$, which means that at alpha 5% there is a significant influence between knowledge about the dangers of smoking on smoking behavior in students at MAN II Mojokerto Regency.

Individual knowledge is expected to be a predisposition to individual behavior. Individuals who have good knowledge are expected to have good behavior as well (Rachmat, Thaha & Syafar, 2013). The majority of teenagers stated that they understand that smoking can be harmful to health and can reduce weight (Amalia, 2014). Although the majority of respondents have good knowledge of cigarettes, it does not rule out the possibility that teenagers can smoke. This is caused by other factors (Wulandari, 2017).

Good knowledge of the dangers of smoking should be able to prevent teenagers from smoking. However, it turns out that teenagers can still become smokers even though they have good knowledge of the dangers of smoking. This can be influenced by other factors, including the influence of friends, the behavior of adults who smoke, and easy access to cigarettes. Although many people have known the dangers of smoking, it seems that this does not reduce smoking behavior. In fact, smoking has become something that can be tolerated by society (Suhta, 2018).

Researchers argue that knowledge as one of the determinants of behavior plays an important role in influencing behavior. Individuals with good knowledge of the dangers of smoking are expected to be able to better understand the dangers caused by smoking behavior so that they can reduce smoking behavior. Sufficient knowledge will create a desire to do good (not smoking).

2. The Influence of Smoking Motivation Factors on Smoking Behavior in Students at MAN II Mojokerto Regency

The results of the study stated that students who have high smoking motivation and smoke are 15 respondents (12.9%), and those who have low motivation but smoke are 8 respondents (6.9%). Based on the results of the chi-square test, the probability result (p-value) is $0.000 < 0.05$, which means that at alpha 5% there is a significant influence between smoking motivation and smoking behavior in students at MAN II Mojokerto Regency.

Some of the motivations behind smoking are to gain recognition, to eliminate disappointment, and to consider that their actions do not violate social environmental norms, namely the community environment, family environment, and school environment. Smoking activities carried out by teenagers are usually carried out in front of other people, especially in front of their group because they are very interested in their peer group or in other words are bound to their group. (Nugroho, RS, 2017).

Smoking behavior is a pleasant behavior and can eliminate discomfort and shift into an obsessive activity. This is due to the addictive and antidepressant nature of nicotine, if stopped suddenly it will cause stress. However, if this smoking habit continues, adolescents are at risk of developing cardiovascular disease, cancer, lung disease, effects on the digestive tract, stimulation of the aging process, brown teeth, bad breath and black lips, the effects of chemicals contained in cigarettes. (Rusmilawati, 2020).

Researchers argue that smoking behavior in adolescents begins with a tendency or motivation that is more directed towards the action of smoking. Looking at the motivational aspects that adolescents have towards cigarettes, it is necessary to instill the right concept of thinking and feeling so that adolescents can be anticipatory and preventive towards cigarettes.

3. The Influence of Teacher Role Factors on Smoking Behavior in Students at MAN II Mojokerto Regency

Students with supportive teacher roles and smoking are as many as 10 Respondent (8.6%), and the role of teachers who are less supportive but

students still smoke as many as 13 respondents (11.2%). Based on the results of the chi-square test, the probability results (p-value) were $0.028 < 0.05$, which means that at alpha 5% there is a significant influence between the role of teachers on smoking behavior in students at MAN II Mojokerto Regency.

Guidance and counseling teachers, among others, act as mentors and supervisors, guiding in this case can be said as an activity to guide students and supervision aims to maintain or prevent. Efforts made by guidance and counseling teachers in preventing smoking behavior by providing guidance and counseling services, namely individual counseling services, and information services about the dangers of smoking, provide advice and assistance to students who smoke, and supervise during breaks or before the bell rings. BK teachers work together with homeroom teachers and principals to address smoking behavior. They make home visits if necessary and the principal decides what action should be taken against students who commit smoking violations (Gulo et al., 2023).

Researchers argue that teachers are the parental figures of students at school, teachers are the front line role models for all students they educate, so teachers are one of the main efforts in enforcing student discipline in terms of juvenile delinquency, one example of which is smoking behavior, so efforts that can be made by teachers in dealing with delinquent behavior are by giving advice to students during class hours, controlling student behavior, checking student conditions, communicating with their parents and approaching the students directly.

4. The Influence of Peer Factors on Smoking Behavior in Students at MAN II Mojokerto Regency

Students who have peers who are non-smokers and smokers are 8 respondents (6.9%), and students who have peers who are smokers and students who also smoke are 15 respondents (12.9%). Based on the results of the chi-square test, the probability results (p-value) were $0.000 < 0.05$, which means that at alpha 5% there is a significant influence between peer factors on smoking behavior in students at MAN II Mojokerto Regency.

Teenagers usually spend more time outside the home with their peers. If it is understood that the attitudes, conversations, interests, appearance and behavior of peers have a greater influence than family, for example, if teenagers wear the same clothing style as popular group members, then their chances of being accepted by the group are greater. Likewise, if group members try to drink alcohol, smoke, or use drugs, then teenagers tend to follow without caring about the consequences. In peer groups, teenagers will try to find their identity. (Pratiwi, 2022).

Usually teenagers often participate in group activities and that makes them more acceptable to their group, this is because there is already a closeness between individuals. (Efendi, LS, 2021). In accordance with the theory that states that friendship provides a warm, close, and trusting relationship with other individuals. If in his life an individual has a peer group, he will be better prepared to face the life to come. (Wahyuni, W., 2018).

This can cause positive and negative influences obtained from peers, one of which is this smoking behavior. Smoking behavior carried out by students begins when the student sees other people smoking in their group, thus triggering the student's curiosity to join in smoking. (Astuti, DR, 2018).

Researchers opine smoking is shown to follow group habits, identify with other smokers and to determine one's self-image. This is if not prepared with a strong self-concept from the family then the possibility of the teenager is very susceptible to being influenced by the surrounding environment.

5. The Influence of Advertising Exposure Factors on Smoking Behavior in Students at MAN II Mojokerto Regency

That students who are not affected by advertising exposure and smoking are 8 respondents (6.9%), and students who are affected by advertising exposure and students also smoke are 15 respondents (12.9%). Based on the results of the chi-square test, the probability results (p-value) are $0.039 < 0.05$, which means that at alpha 5% there is a significant influence between advertising exposure factors on smoking behavior in students at MAN II Mojokerto Regency.

The intensity of cigarette advertising, promotion, and sponsorship can have an impact on the increasing prevalence of smoking among adolescents. The intended cigarette advertising, promotion, and sponsorship are advertisements or promotions carried out by cigarette companies in the form of outdoor advertising in the form of billboards or posters. Various studies have shown that cigarette advertising, promotion, and sponsorship make adolescents want to start smoking, encourage adolescent smokers to continue smoking, and encourage adolescents who have quit smoking to start smoking again. (Fadhila et al., 2021)

The density of cigarette advertisements around educational and residential areas also plays a major role in shaping students' smoking behavior. According to the results (Handayani et al., 2021), students whose school locations are densely populated with cigarette advertisements are 2 times more likely to become smokers than those who attend schools in areas with relatively low advertising density. This is in line with research conducted in Padang City, the increase in cigarette advertisements has an effect on the increase in the prevalence of adolescent smokers (Syafrawati et al., 2016).

Researchers argue that each person's perception can be different when seeing advertising promotions. Creatively packaged advertisements can create a belief in teenagers that smoking is a common thing to do.

CONCLUSION

There is a significant influence between knowledge about the dangers of smoking, motivation to smoke, the role of teachers, peers and exposure to advertising on students at MAN II, Mojokerto Regency.

SUGGESTION

The school is expected to provide counseling and education on a regular basis about the dangers of smoking in teenagers. In an interesting way such as using animated videos, Q&A, and playing. With this research, it is hoped that it

can provide information related to how dangerous it is to consume cigarettes for teenagers, and what the health impacts are due to smoking in the long term.

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