

Smoking Behavior and the Related Factors Among the Students Diploma of Biomedical Engineering Binalita Sudama Medan

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Abstract— Objective: *The purpose of this study is to determine the factors are associated that smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan. Method: The results showed that respondents who smoked were 29 respondents (48.3%). Results and Discussion: The results of bivariate analysis found that variables related to smoking behavior in respondents were knowledge ($p = 0,000$), attitude ($p = 0,002$), actions ($p = 0,001$), difficulties during study ($p = 0,040$), wanting to look cool ($p = 0,009$), want to be accepted in society ($p = 0,020$), want to try smoking ($p = 0,020$), facilities and infrastructure ($p = 0,010$), parents who smoke ($p = 0,010$), friends who smoke ($p = 0,004$) and the effect of cigarette advertisement ($p = 0,009$). The unrelated variable was a housemate who smoked ($p = 0,47$). There is a significant relationship between predisposing factors (knowledge, attitudes, actions, and psychological reasons), supporting factors (facilities and infrastructure) and reinforcing factors (smoker parents, smoker friends, and the influence of cigarette advertising) with smoking behavior on students. The results of multivariate analysis showed that the most dominant factors related to smoking behavior among respondents were predisposing factors, namely knowledge (value $B = 0,375$ and $p = 0,000$), and reinforcing factors namely parents smoking (value $B = 0,302$ and $p = 0,010$). Conclusion: It is expected that the government and institution able to take role in the policy on smoking bans for students in academic settings and in public area*

Keywords: *smoking behavior, students*

I. INTRODUCTION

Smoking is a necessity that can not be avoided for people who experience a tendency towards smoking. *Smoking habit* is considered to be able to provide pleasure for smokers, but on the other hand it can have a bad impact on smokers themselves and those around them. This has actually been known by the public, that smoking is harmful to health, so the problem of smoking is essentially a national problem

Smoking in daily life has become a routine or something worth doing. According to WHO (2015) in 2015 in Indonesia an estimated 36% or around 60 million people of Indonesia smoke regularly, this is different from the amount of cigarette consumption in other countries which can be expected to decrease, but in Indonesia it has even been estimated by WHO that in 2025 will increase until 90% of Indonesia's population becomes active smokers

Based on data from the World Health Organization, said 1 in 10 deaths in adults is caused by smoking behavior, where cigarettes will kill nearly five million people each year. If this continues, it can be ascertained that 10 million people will die from smoking annually in 2020, with 70% of cases occurring in developing countries such as Indonesia. (Rochayati, 2015)

According to WHO data, Indonesia is the third country with the largest number of smokers in the world after China and India. The increase in cigarette consumption has an impact on the higher burden of diseases caused by smoking and the increase in mortality due to smoking. In 2030 it is estimated that the death rate of smokers in the world will reach 10 million people and 70% of them come from developing countries. (Ministry of Health Republic of Indonesia Promkes Center, 2013).

Smoking is a trend for students today, the reason smoking students in the campus environment so that they look free and mature when they adjust to their peers who smoke. Rest or relaxation and pleasure, peer pressure, personal appearance, curiosity, stress, worry, and challenging traits are things that can contribute to the onset of smoking.

The tendency of increasing the number of smokers in college students is increasingly becoming a particular concern because it brings a real long-term consequence of the negative impact of smoking itself on health that has been known since long ago. (Ministry of Health, 2011)

Despite the high exposure to cigarette smoke, we are also confronted with the more alarming fact is that many students think that smoking will not have an effect on their bodies until they reach adulthood. In fact, almost 90% of students who smoke regularly are reported to have begun to feel the effects short-term negative effects of these cigarettes (Doe and Desanto, 2009).

The reason for the researchers who chose on the D3 Medical Electro Engineering Study Program campus was because the Institution is a health institution where tobacco users are quite high especially students in the D3 Medical Electro Engineering Study Program where the average student is male, they have smoking habits that are considered trivial

like what is done by students who have the habit of smoking even though not in the campus environment. Based on the author's observations, there is no campus policy at STIKes Binalita Sudama in the application of areas without smoking. Even though the campus at STIKes Binalita Sudama is a health campus that has special competence in dealing with health problems and has the ability, skills, high knowledge, and broad insight related to health issues so that it is expected to be an agent of change, especially in overcoming the problem of smoking. Therefore, in this study, the authors are interested in researching about the factors that influence the smoking behavior of the students diploma of Biomedical Engineering Binalita Sudama Medan

II. MATERIAL AND METHOD

A. Procedure

This research was a quantitative research with analytic survey method. Analytic survey is a survey or research that tries to explore how and why health phenomena occur. Then analyze the correlation dynamics between phenomena or between effect factors. This study used a cross sectional survey design, which is a study to study the dynamics of the correlation between risk factors and effects by means of approach, observation or data collection at one time (point time approach) (Notoatmodjo, 2010)

This research has been carried out in the diploma of Biomedical Engineering Binalita Sudama Medan , PBSI

Building Road No. 1 Medan Estate Percut Sei District, Deli Serdang Regency. The population in this study were all male students in the Diploma of Biomedical Engineering Binalita Sudama Medan, amounting to 149 people

The sampling technique in this study used purposive sampling, which is a sample calculation technique based on a particular consideration made by the researchers themselves according to the inclusion and exclusion criteria, the sample in this study were the students diploma of Biomedical Engineering Binalita Sudama Medan, amounting to 60 people

B. Data Analysis

This study used three ways to analyze data, namely Univariate, Bivariate and Multivariate analysis days.

III. RESULTS

The results of research on the relationship between reinforcing factors (knowledge, attitudes, actions, psychological reasons which include feeling difficult in lessons, want to look cool, want to be accepted in relationships and want to try smoking), reinforcing factors (social environment of parents, relatives, friends who smoke and the influence of advertisements) and supporting factors (facilities and infrastructure) with smoking behavior in students diploma of Biomedical Engineering Binalita Sudama Medan can be seen in the following tables:

TABLE 1: RELATIONSHIP OF STRENGTHENING FACTORS AND SMOKING BEHAVIOR IN STUDENTS

Strengthening Factor	Smoking behavior				Amount		P Value
	No		Yes		n	%	
	n	%	n	%			
Knowledge level							
Not good	0	0	9	100	9	15	0,000
Moderate	8	36,4	14	63,6	22	36,7	
Well	23	79,3	6	20,7	29	48,3	
Attitude							
Not Good	3	17,6	14	82,4	17	28,3	0,002
Well	28	65,1	15	34,9	43	71,7	
Action							
Not Good	5	21,7	18	78,3	23	38,3	0,001
Well	26	70,3	11	29,7	37	61,7	
Reasons to feel difficulties in learning							
Yes	9	34,6	17	65,4	26	43,3	0,040
No	22	64,7	12	35,3	34	56,7	
Want to Try Smoking							
Yes	11	35,5	20	64,5	31	51,7	0,020
No	20	69,0	9	31,0	29	48,3	
The reason you want to look cool							
Yes	11	34,4	21	65,6	32	53,3	0,009
No	20	71,4	8	28,6	28	46,7	
Reasons to be accepted in the association							
Yes	10	34,5	19	65,5	29	48,3	0,020
No	21	67,7	10	32,3	31	51,7	
Amount	31	51,7	29	48,3	60	100	

Based on table 1, the results of the study for knowledge variables showed that of the 29 respondents who smoked found 14 respondents (63.6%) who had sufficient knowledge, 9 respondents (100%) who had poor knowledge and 6 respondents (20.7%) who had good knowledge, while of the 31 respondents who did not smoke who had the most good knowledge were 23 respondents (79.3%) and there were only 8 respondents (36.4%). Statistical test results in table 3 x 2 using the Pearson Chi Square test at a 95% confidence level, $p = 0,000$. This means that the pvalue is smaller than alpha (5%), so it can be concluded that there is a meaningful relationship between knowledge and smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0,000 < 0.05$).

The results of the study for attitude variables show that of the 29 respondents who smoked found 14 respondents (82.4%) who had bad attitudes and those who had good attitudes there were 15 respondents (34.9%), while of the 31 most non-smoking respondents had good attitude as many as 28 respondents (65.1%) and less good there are 3 respondents (17.6%). Statistical test results in table 2 x 2 where there is no $E < 5$ value by using the Continuity Correction test at a 95% confidence level, p value = 0,000. This means that the pvalue is smaller than alpha (5%), so it can be concluded that there is a significant relationship between attitude and smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.002 < 0.05$).

The results of the study for action variables show that of the 29 respondents who smoke found 18 respondents (82.4%) who had unfavorable actions and those who had good actions there were 11 respondents (29.7%), while of the 31 most nonsmoking respondents had good action that is 26 respondents (70.3%) and not good there are 5 respondents (21.7%) .. The results of statistical tests in the 2x2 table where there is no $E < 5$ by using the Continuity Correction test at a confidence level of 95 %, the value of $p = 0.001$. This means that the pvalue is smaller than alpha (5%), so it can be concluded that there is a significant relationship between the actions with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.02 < 0.05$) .

The results of the study for the variable felt difficulty in learning showed that of the 29 respondents who smoked found 17 respondents (65.4%) with the reason felt difficulties in learning and there were 12 respondents (35.3%) with the reason they did not feel difficulties in learning. While of the 31 respondents who did not smoke the most who had reasons for not feeling difficult in learning, there were 22 respondents (64.7%) and the reasons for learning difficulties were 9 respondents (43.6%). Statistical test results in table 2 x 2 where there is no E value < 5 by using the Continuity Correction test at a 95% confidence level, p value = 0.040. This means that the pvalue is smaller than alpha (5%), so it

can be concluded that there is a significant relationship between psychological factors, namely the reasons for feeling difficulties in learning with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.040 < 0.05$).

The results of the study for the variable wanting to try smoking showed that of the 29 respondents who smoked found 20 respondents (64.5%) had reasons for wanting to try smoking and there were 9 respondents (31.0%) on the grounds of not wanting to try smoking. While of the 31 most non-smoking respondents who had reasons for not wanting to try smoking, there were 20 respondents (69.0%) and 11 respondents (43.6%) wanting to try smoking. Statistical test results in table 2 x 2 where if there is no E value < 5 then use the Continuity Correction test at a 95% confidence level, p value = 0.020. This means that the pvalue is smaller than alpha (5%), so that it can be concluded that there is a significant relationship between psychological factors, namely the reasons for wanting to try smoking with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.020 < 0.05$).

The results of the study for the variable wanted to look cool showed that of the 29 respondents who smoked found 21 respondents (65.6%) had a reason to want to look cool and there were 8 respondents (28.6%) with the reason they did not want to look cool. While of the 31 respondents who did not smoke the most who had reasons for not wanting to look cool they were 20 respondents (71.4%) and the reasons for wanting to look cool were 11 respondents (34.4%) .. The statistical test results in table 2 x 2 where if there is no value of $E < 5$ then use the Continuity Correction test at a 95% confidence level, the value of $p = 0.009$. This means that the pvalue is smaller than alpha (5%), so it can be concluded that there is a significant relationship between psychological factors, namely the reasons for wanting to look cool with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.009 < 0.05$).

The results of the study for the variable wanted to be accepted in the association showed that of the 29 respondents who smoked found 19 respondents (65.5%) had a reason to be accepted in the association and there were 10 respondents (32.3%) with the reason of not wanting to be accepted in the association. While of the 31 respondents who did not smoke the most who had reasons they did not want to be accepted in the community, there were 21 respondents (67.7%) and 10 respondents (34.5%) wanted to be accepted in the association. The statistical test results in table 2 x 2 where if there is no value of $E < 5$, then using the Continuity Correction test at a 95% confidence level, the value of $p = 0.020$. This means that the pvalue is smaller than alpha (5%), so it can be concluded that there is a meaningful relationship between psychological factors, namely the reasons for wanting to be accepted in

association with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan (p = 0.020 <0.05)

TABLE 2 THE RELATIONSHIP BETWEEN FACILITIES AND INFRASTRUCTURE FACTORS WITH SMOKING BEHAVIOR IN STUDENTS

Facilities and Infrastructure	Smoking Behavior				Amount		P Value
	No		Yes		n	%	
	n	%	n	%			
Not available	10	33,3	20	66,7	30	50	0,010
Available	21	70	9	30	30	50	
Amount	31	51,7	29	48,3	60	100	

Based on table 2, the results showed that of the 29 respondents who smoked found 19 respondents (65.5%) had reasons to want to be accepted in relationships and there were 10 respondents (32.3%) with reasons not wanting to be accepted into relationships. While of the 31 respondents who did not smoke, the most available facilities and infrastructure for smoking were 21 respondents (70%) and the reasons for wanting to be accepted in the association were 10 respondents (34.5%). Statistical test results in table 2 x 2 where if there is

no E value <5 then use the Continuity Correction test at a 95% confidence level, p value = 0.010. This means that the pvalue is smaller than alpha (5%), so it can be concluded that there is a meaningful relationship between psychological factors, namely the reasons for wanting to be accepted in association with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan (p = 0.010 <0.05).

TABLE 3 RELATIONSHIP OF STRENGTHENING FACTORS WITH SMOKING BEHAVIOR IN STUDENTS

Strengthening Factors	Smoking Behavior				Amount		P Value
	No		Yes		n	%	
	n	%	n	%			
Parents who smoke							
There is no	7	29,2	17	70,8	24	40	0,01
There is	24	66,7	12	33,3	36	60	
Housemate who smoked							
There is no	10	62,5	6	37,5	16	26,7	0,47
There is	21	47,7	23	52,3	14	23,3	
Friends who smoke							
There is no	10	32,3	21	67,7	31	51,7	0,004
There is	21	72,4	8	27,6	29	48,3	
the effect of cigarette advertisement							
There is no	11	34,4	21	65,6	32	53,3	0,009
There is	20	71,4	8	28,6	28	46,7	
Amount	31	51,7	29	48,3	60	100	

The results of the study for the variables of parents who smoke show that of the 29 respondents who smoke found 12 (33.3%) of their parents were smoking and 17 (70.8%) of their parents did not smoke. While of the 31 respondents who did not smoke found 24 (66.7%) of their parents smoked and 7 (29.2%) of their parents did not smoke. Statistical test results in table 2 x 2 where if there is no E value <5 then use the Continuity Correction test at a 95% confidence level, p value = 0.010. This means that the pvalue is smaller than alpha (5%), so it can be concluded that there is a significant relationship between the factors of people who smoke and

smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan (p = 0.010 <0.05).

The results of the study for the variables of siblings who smoke indicate that of the 29 respondents who smoked found 23 respondents (52.3%) their siblings were smoking and 6 respondents (37.5%) siblings did not smoke. While of the 31 respondents who did not smoke, 21 (47.7%) siblings were smoking and 10 (62.5%) siblings did not smoke. Statistical test results in table 2 x 2 where if there is no value of E <5 then use the Continuity Correction test at a 95% confidence

level, p value = 0.47. This means that the p value is greater than alpha (5%), so it can be concluded that there is no meaningful relationship between smoking relatives and smoking behavior among students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.47 < 0.05$).

The results of the study for variables of friends who smoke show that of 29 respondents who smoke found 8 (27.6%) of their friends smoked and 21 (67.7%) of their friends did not smoke. While of the 31 respondents who did not smoke found 21 (72.4%) of their friends were smoking and 10 (32.3%) of their friends did not smoke. Statistical test results in table 2 x 2 where if there is no value of $E < 5$ then use the Continuity Correction test at a 95% confidence level, p value = 0.004. This means that the p value is smaller than alpha (5%), so it can be concluded that there is a significant relationship between smoking friends and smoking behavior among students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.004 < 0.05$).

The results of the study for cigarette advertising variables show that of 29 respondents who smoke found 8 (28.6%) very interesting cigarette advertisements and 21 (65.6%) non-attractive cigarette advertisements. While of the 31 respondents who did not smoke found 20 (71.4%) very interesting cigarette advertisements and 11 (34.4%) non-attractive cigarette advertisements. Statistical test results in table 2 x 2 where if there is no value of $E < 5$ then use the Continuity Correction test at a 95% confidence level, p value = 0.004. This means that the p value is smaller than alpha

(5%), so it can be concluded that there is a significant relationship between cigarette advertising which is very interesting with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.009 < 0, 05$).

Multivariate analysis was carried out to determine the variables that were most related to each of the factors with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan. In this test all related variables (significant) in the bivariate test will be put together in a multivariate test. The test used in this multivariate analysis is the multiple linear regression test.

Based on the chi square test on bivariate analysis for predisposing factors, seven variables were found, namely knowledge, attitudes, and actions of adolescents about smoking, felt difficulties in learning, wanted to look cool, wanted to be accepted in relationships and wanted to try smoking which had a significant relationship with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan.

For reinforcing factors, three variables were found, namely the influence of the social environment of parents who smoke, friends who smoke and the influence of cigarette advertisements that have a significant relationship with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan

TABLE 4 RESEARCH VARIABLES MOST RELATED TO SMOKING BEHAVIOR IN STUDENTS

No	Variables	B Value	P Value
1	Predisposing factors		
	a. Knowledge	0,375	0,000
	b. Attitude	0,179	0,002
	c. Action	0,206	0,001
	d. Feeling difficult in learning	0,049	0,040
	e. Want to try smoking		
	f. Want to look cool	0,157	0,009
	g. Want to be accepted in the association	0,205	0,020
		0,245	0,020
2	Reinforcing factors		
	a. parents who smoke	0,302	0,010
	b. friends who smoke	0,256	0,040
	c. <i>the effect of cigarette advertisement</i>	0,252	0,009

From the results of multiple linear regression tests, on predisposing factors, knowledge is the most dominant relate to smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan, where the highest of B value is 0.37. For the reinforcing factor, parents

who smoke are the most dominant relates to smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan where the highest of B value is 0.302

IV. DISCUSSION

The results showed that more respondents had good knowledge, namely 29 (48.3%). Of the 29 respondents who behaved smoking found 14 respondents (63.6%) who have enough knowledge, 9 respondents (100%) who are not well knowledgeable and 6 respondents (20.7%) who have good knowledge. Statistical test results using the Pearson Chi Square test at a 95% confidence level, the value of $p = 0,000$ can be concluded that there is a significant relationship between knowledge and smoking behavior in students ($p = 0,000 < 0.05$).

Knowledge is very influential because knowledge determines the attitudes and actions of adolescents to the smoking behavior of those around them (Alamsyah, 2009). According to Lawrence Green also stated that one of the factors that determine a person's behavior is predisposing factors, including knowledge. Knowledge is the result of human sensing or the result of knowing someone about objects through their senses (Notoatmodjo, 2007).

The results showed that more respondents had good attitudes, namely 43 respondents (71.7%). The number of those who had good attitudes was more than respondents who had bad attitudes. This can be influenced by the incessant health promotion, especially health promotion about the dangers and prohibitions of cigarettes on campuses, thus making the level of student attitudes towards cigarettes quite good. Of the 29 respondents who smoked found 14 respondents (82.4%) who had a bad attitude and who had a good attitude there were 15 respondents (34.9%). Statistical test results using the Continuity Correction test at a 95% confidence level, p value = 0,000. it can be concluded that there is a significant relationship between attitude and smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.002 < 0.05$).

This study is in line with research Sulistyawati (2012) which states that there is a relationship between attitude and smoking behavior. The results of this study are also in accordance with Green's statement that one of the factors that determines a person's behavior is predisposing factors, in addition to knowledge one is also attitude. Attitude is a reaction or response of someone who is still closed to a stimulus or object (Notoatmodjo, 2007).

Of the 29 respondents who smoked found 18 respondents (82.4%) who had bad actions and who had good actions there were 11 respondents (29.7%). The results of statistical tests using the Continuity Correction test at a 95% confidence level, the value of $p = 0.001$ can be concluded that there is a significant relationship between the action with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.02 < 0.05$).

The high number of respondents who have good actions can be influenced by the level of knowledge of respondents. A good level of knowledge about the dangers of smoking, is likely to have good actions also in terms of smoking prevention, this is in accordance with the theory put forward by Notoatmodjo (2007). Where states that knowledge is a domain that is very important for the formation of a person's actions (over behavior) if an action is based on knowledge then the action will be long lasting, otherwise if the behavior is not based on knowledge and awareness then the behavior will not last long.

Student curiosity about cigarettes made him want to try to smoke, this period arises because of the state of students who are in a transition phase, where in every transition there is a change, the individual's status becomes unclear because there are doubts about the role that must be performed. Individual adolescence is no longer a child and also not an adult. On the other hand, this unclear adolescent status provides benefits because the status gives space and time to a teenager to try different lifestyles and determine the patterns of behavior, values and traits that are most appropriate for him (Nasution, 2007).

The relationship between curiosity with smoking behavior in accordance with those raised by Hurlock (1999) in Nasution (2007), namely the characteristics of adolescence as the threshold of adulthood. Adolescents begin to focus on behaviors that are linked to adult status, such as smoking, drinking, using illegal drugs and engaging in sexproduction.

Of the 29 respondents who smoked found 21 respondents (65.6%) had the reason they wanted to look cool and there were 8 respondents (28.6%) with the reason they did not want to look cool. The results of statistical tests can be concluded that there is a significant relationship between psychological factors, namely the reasons for wanting to look cool with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.009 < 0.05$).

The desire factor looks cool happens because they want to become adults, students think smoking as a sign of freedom and smoking behavior is not wrong in terms of morals. There are students who think that what influences them to smoke is smoking can make them cool and unique (Alamsyah, 2009).

Of the 29 respondents who smoke, it is found that 19 respondents (65.5%) have reasons for wanting to be accepted in relationships and there are 10 respondents (32.3%) with reasons for not wanting to be accepted into relationships. The results of statistical tests can be concluded that there is a significant relationship between psychological factors, namely the reasons for wanting to be accepted in association with smoking behavior in students of the Medical Engineering D3 Study Program at STIKes Binalita Sudama Medan ($p = 0.020 < 0.05$).

Smoking is a trend or culture today, so that teenagers are accepted by friends, mothers and fathers who do not care if teens smoke, smoking can be meaningful to familiarize the atmosphere so that a sense of brotherhood arises, also can give a modern and authoritative impression, so for individuals who often associating with others, smoking behavior is difficult to avoid from smoking which is felt, among others, more acceptable in the environment of friends and feel more comfortable (Alamsyah, 2009)

Of the 29 respondents who smoke, it is found that 19 respondents (65.5%) have reasons for wanting to be accepted in relationships and there are 10 respondents (32.3%) with reasons for not wanting to be accepted into relationships. The results of the statistical test can be concluded that there is a significant relationship between psychological factors, namely the reasons for wanting to be accepted in association with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.010 < 0.05$).

The availability of facilities and infrastructure that support teenage smoking behavior is caused by lifestyle characteristics in urban environments that tend to be consumptive, so that shops or stalls can easily be found in each neighborhood. In addition, the lack of knowledge and caring attitudes of sellers about the dangers of smoking for their children also makes cigarettes easily bought by minors. The form of the availability of facilities and infrastructure can also be seen from the respondent's large allowance.

The results of this study are not in accordance with the theory that the facilities and infrastructure in the form of pocket money and the availability of places to buy cigarettes affect smoking behavior. This facility essentially supports or allows teenagers to freely obtain smokers and become smokers, so these factors are called supporting factors or enabling factors (Alamsyah, 2009). This opinion is also supported by Hussin and Mariani (2014) who say one of the factors of teenage smoking is because cigarettes are easily obtained. This discrepancy can be caused by the presence of other factors that are more influential on adolescent smoking behavior, such as environmental factors, and driving factors and are external, so the effect on behavior is not too much, because behavior is a joint result between various internal and external factors (Notoatmodjo, 2007).

The results showed that of the 29 respondents who smoked found 12 (33.3%) of their parents were smoking and 17 (70.8%) of their parents did not smoke. While of the 31 respondents who did not smoke found 24 (66.7%) of their parents smoked and 7 (29.2%) of their parents did not smoke. The results of statistical tests can be concluded that there is a significant relationship between the factors of people who smoke and smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.010 < 0.05$).

The results of this study are consistent with the theory put forward by Baer & Corado, adolescent smokers are children who come from unhappy households, where parents pay less attention to their children compared to adolescents who come from happy home environments. Adolescents who come from conservative families will be more difficult to get involved with cigarettes or drugs compared to families that are permissive, and the strongest effect is if parents themselves become examples of heavy smoking, then their children will be very likely to imitate it. Bar & Corado also revealed that parents are role models for their children, for example their parents are heavy smokers, so their children will be very likely to imitate it (Alamsyah, 2009).

The results showed that of the 29 respondents who smoked found 23 (52.3%) siblings were smoking and 6 (37.5%) siblings did not smoke. While of the 31 respondents who did not smoke, 21 (47.7%) siblings were smoking and 10 (62.5%) siblings did not smoke. The results of statistical tests can be concluded that there is no significant relationship between smoking factors of relatives and smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.47 < 0.05$).

The absence of a meaningful relationship is not supported by research from Alamsyah (2009) which says there is a meaningful relationship with a housemate with smoking behavior in which respondents who smoke at home have a smoking habit of 1.43 times compared to those of a non-smoker sibling. This relationship is also adolescents who live in an environment that is predominantly smokers, will usually be affected to smoke (Alamsyah, 2009).

The results showed that of 29 respondents who smoked found 8 (27.6%) of their friends were smoking and 21 (67.7%) of their friends did not smoke. While of the 31 respondents who did not smoke found 21 (72.4%) of their friends were smoking and 10 (32.3%) of their friends did not smoke. The results of statistical tests can be concluded that there is a significant relationship between smoking friends and smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.004 < 0.05$).

The more teenagers smoke, the more likely their friends will become smokers as well. This can be seen from the two possibilities that occur, the first teenager is influenced by his friends while the second, his friends are influenced by the teenager so that eventually all become smokers. Among adolescent smokers, 87% have at least one or more smoker friends as well as non-smokers (Alamsyah, 2009).

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results of statistical tests can be concluded that there is a significant relationship between smoking friends and smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.004 < 0.05$).

The more teenagers smoke, the more likely their friends will become smokers as well. This can be seen from the two possibilities that occur, the first teenager is influenced by his friends while the second, his friends are influenced by the teenager so that eventually all become smokers. Among adolescent smokers, 87% have at least one or more smoker friends as well as non-smokers (Alamsyah, 2009).

The results showed that of 29 respondents who smoked found 8 (28.6%) very interesting cigarette advertisements and 21 (65.6%) non-attractive cigarette advertisements. While of the 31 respondents who did not smoke found 20 (71.4%) very interesting cigarette advertisements and 11 (34.4%) non-attractive cigarette advertisements. The results of statistical tests can be concluded that there is a significant relationship between cigarette advertisements that are very interesting with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.009 < 0.05$).

The results of this study are supported by Alamsyah (2009) which says 63% of adolescents say there is an influence on cigarette advertising. Respondents who claimed cigarette advertising affected 1.42 times more than those who claimed cigarette advertising did not influence it. Seeing advertisements in the mass media and electronics that show that smokers are symbolizing virility or glamor make teenagers often to follow behaviors such as advertisements. According to researchers, smoking habits in adolescents are behaviors that are obtained or learned from those who have a major influence on the process of child development into adolescents, both from adolescent personal development (attitudes, actions, and psychological) and the surrounding environment. Negative behavior such as smoking behavior in adolescents is actually not desired by parents, even the community also does not want their families to have negative habits such as smoking.

From the results of multiple linear regression tests, on predisposing factors, knowledge is the most dominant relate to smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan where the highest of B value is 0.37. For the reinforcing factor, parents who smoke are the most dominant relates to smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan where the highest of B value is 0.302

V. CONCLUSION

1. Smoking behavior of students diploma of Biomedical Engineering STIKes Binalita Sudama Medan in 2019 there were 29 respondents who smoked (48.3%) while there were 31 respondents who did not smoke (51.7%).
2. The relationship between predisposing factors (predisposing factors) with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan:
 - a. There is a relationship between the level of adolescent knowledge with smoking behavior in respondents ($p = 0.000$).
 - b. There is a relationship between the level of adolescent attitudes with smoking behavior in respondents ($p = 0.002$).
 - c. There is a relationship between the level of adolescent actions with smoking behavior in respondents ($p = 0.001$).
 - d. There is a relationship between psychological reasons: feeling difficulty in learning with smoking behavior in respondents ($p = 0.040$).
 - e. There is a psychological reason relationship: want to look cool with smoking behavior in respondents ($p = 0.009$).
 - f. There is a relationship of psychological reasons: want to be accepted in the association with smoking behavior in respondents ($p = 0.020$).
3. The relationship between reinforcing factors with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan:
 - a. There is a relationship between parents who smoke with the smoking behavior of students in respondents ($p = 0.010$).
 - b. There was no relationship between smoking relatives and smoking behavior in respondents ($p = 0.47$).
 - c. There is a relationship between friends who smoke and smoking behavior in respondents ($p = 0.004$).
 - d. There is a relationship between advertising and smoking behavior among adolescents in respondents ($p = 0.009$).
4. There is no relationship between supporters / enabling factors: facilities and infrastructure with smoking behavior in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan ($p = 0.010$).
5. For predisposing factors, knowledge is the most dominant factor related to smoking behavior and for reinforcing factors, parents who smoke are the most dominant factor related to smoking behavior in in students diploma of Biomedical Engineering STIKes Binalita Sudama Medan where the highest of B value is 0.302

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