



THE RELATIONSHIP BETWEEN STRESS LEVELS AND SMOKING BEHAVIOR IN UIN NORTH SUMATERA MEDAN TUNTUNGAN STUDENTS

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Abstract

Smoking is one of the most serious public health problems in Indonesia, which affects people of all ages, especially among university students. Various psychological factors are often associated with college students smoking habits, one of which is stress. Stress can come from various sources, such as academic pressure, financial problems, or worries about the future. This study aims to analyze the relationship between stress levels and smoking behavior in UIN North Sumatra Medan Tuntungan students. This type of research uses a quantitative approach with a case control design, with sampling techniques using accidental sampling involving 80 respondents consisting of 40 student smokers and 40 student non-smokers. Data were collected using a standardized questionnaire that had been tested for validity and reliability to measure stress levels and smoking behavior. Bivariate data analysis was conducted using chi square test. The results showed that 23 respondents (57%) from the case group were 21 to 24 years old, and 25 respondents (62.5%) from the control group were 17-20 years old. It was found that most respondents were at a moderate level of stress in the case group and control group. Where as many as 30 respondents (75%) in the case group, and 32 respondents (80%) in the control group. The conclusion of this study is that statistically there is no significant relationship between stress levels and smoking behavior in UIN North Sumatra Medan Tuntungan students, with the results of the chi square test showing a p value of 1.0 ($p > 0.05$).

Keywords: University Students, Smoking Behavior, Stress Level

Introduction

The global prevalence of smoking remains a significant public health problem, despite efforts to reduce tobacco use. Approximately 1.18 billion people smoke worldwide, responsible for 7 million deaths each year, with smoking prevalence in 2020 estimated at 32.6 percent for men and 6.5% for women. The decline in smoking rates has been uneven, with high-income countries seeing a decline of more than 40%, while low- and middle-income countries (LMICs) saw persistently high rates, particularly in Asia.(1) The prevalence of smoking among young people globally remains a significant public health issue, with various studies highlighting alarming statistics. Around 155 million people aged 15 to 24 were smokers in 2019, with a prevalence of 20.1% among males and 4.95% among females.(2)

Data from Riskesdas shows that the majority of smoking in Indonesia is done by male adolescents and later ages at 33.8%.(3) The smoking prevalence rate at the age of 20-24 reached 27.2%, which is the age range of university students.(4) According to data from the Central Bureau of Statistics (2024), the prevalence of smoking in the province of North Sumatra at the age of more than fifteen years was 27.24% in 2021, rose to 25.32% in 2022, and rose to 26.28% in 2023. This high percentage is driven

by a number of factors that greatly influence a person's smoking behavior, which eventually becomes an activity that is carried out because of the many factors that influence it.

Smoking is a difficult problem to stop and has consequences and dangers for a smoker. Although the effects of cigarettes have been made known to the public, smoking is still a difficult habit to break. A cigarette contains more than 7000 harmful chemicals and at least 250 dangerous compounds, including hydrogen cyanide, carbon monoxide, and ammonia. In addition, cigarettes contain nicotine, which can cause addiction in smokers.(5)

Smoking is an example of an ineffective but useful management strategy. The younger age of smokers and the increasing number of smokers is because smokers believe that the tobacco in cigarettes has a calming effect when smokers experience stress and feel anxious.(6) The behavior of smoking or smoking cigarettes intended to burn tobacco (nicotin tabacum and nicotin rustica), or clove cigarettes or cigars containing tobacco smoke containing nicotine and tar with or without other ingredients.(7)

Intrinsic factors, such as gender, personality, occupation, and beliefs, are among the many factors that can cause a person to become a smoker. Extrinsic factors include family and neighborhood influences, peers, climate, cigarette advertising, ease of obtaining cigarettes, lack of regulation, and health workers' attitudes. It is imperative to improve the health of future human resources after knowing how bad smoking is for health. The issue of smoking now cannot be postponed any longer. It is hoped that many parties will pay attention to health issues and smoking behavior.(8)

Smoking is often considered as a way to cope with stress and anxiety. Several studies have shown that there is a positive correlation between stress levels and college students' smoking behavior; the higher the stress level, the greater the tendency of college students to smoke.(9) This suggests that smoking is not just a habit, but also a response to psychological distress. another student community, which states that smoking can reduce negative feelings such as anxiety and restlessness due to stress.(10) This reinforces the assumption that smoking behavior is often used as a maladaptive coping strategy in the face of stress. Research conducted at various universities, including HKBP Nommensen University Medan, shows that there is a positive correlation between stress and the intensity of student smoking behavior, although the correlation is moderate ($r = 0.218$). (11) This indicates that stress plays a role as one of the factors influencing smoking, although it is not the only factor.

Studies conducted in various universities found that students who experience academic stress tend to smoke compared to students who do not experience academic stress.(12) For example, at Muhammadiyah Gresik University, it was found that 33.8% of academic stress contributed significantly to smoking behavior.(9) However, not all studies found a significant relationship between stress and smoking behavior. Some studies reported non-significant results, although there was a positive trend of.(13) This indicates that other factors such as social environment, personal characteristics, and previous smoking habits also influence student smoking behavior.

In the environment of UIN North Sumatera Tuntungan students, academic stress is one of the potential factors that trigger smoking behavior. Students face pressures from academic demands, organizations, and social life that can increase their stress levels.(14) Therefore, it is important to understand the relationship between smoking behavior and stress in UIN North Sumatera Medan Tuntungan student.

Methods

This study was conducted using quantitative methods through an observational analytic survey. A case control study was used to investigate the relationship between smoking behavior and stress levels. To do this, researchers compared one group of students who smoke (case) with one group of students who do not smoke (control). To determine the sample, the method used was non-probability sampling, namely the selection of samples by accidental sampling, where the selection was made

based on ease of access and availability of participants when the study took place.(15) The number of samples for each case and control group is set at 40 students, so the total number of samples reaches 80 students of UIN North Sumatra Medan Tuntungan.

The measuring instrument used in this study was a questionnaire that was distributed online using google form and then analyzed using SPSS and Microsoft Word. Standardized questionnaires that have gone through validity and reliability testing to assess stress levels and smoking behavior. The population in this study was taken from students from the 2020-2024 academic year from four faculties: faculty of public health, faculty of science and technology, faculty of social science, and faculty of business economics. Data were analyzed by univariate method to assess the frequency distribution of respondents' characteristics. Furthermore, bivariate analysis was conducted to see the relationship between stress levels and smoking behavior using the chi square test.

Results

Descriptive Analysis

The study involved 80 students of UIN North Sumatra Medan Tuntungan, consisting of 40 smokers (case group) and 40 non-smokers (control group).

Table 1. Characteristics by Age in Case and Control Groups

Age	Case		Control	
	n	%	n	%
17-20	17	42,5	25	62,5
21-24	23	57,5	15	37,5
Total	40	100	40	100

Based on table 1, it is known that the average age of respondents is 21-24 years old in the case group, namely 23 respondents (57.5%) and in the control group the average age of respondents is 17-20 years old, namely 25 respondents (62.5%). The number of respondents aged 17-20 years in the case group was 17 respondents (42.5%), and the number of respondents aged 21-24 years in the control group was 15 respondents (37.5%).

Table 2. Characteristics based on generation in case and control groups

Generation	Case		Control	
	n	%	n	%
2020	2	5	0	0
2021	4	10	6	15
2022	20	50	22	55
2023	5	12,5	10	25
2024	9	22,5	2	5
Total	40	100	40	100

Based on table 2, in the case group and control group, it was found that the average respondent was a 2022 student. In the case group there were 20 respondents (50%), while in the control group there were 22 (55%).

Table 3. Characteristics by Faculty in Case and Control Groups

Faculty	Case		Control	
	n	%	n	%
Faculty of public health	12	30	21	52,5
Faculty of science and technology	14	35	13	32,5
Faculty of social sciences	7	17,5	4	10
Faculty of economics and business	7	17,5	2	5
Total	40	100	40	100

Based on table 3, it is known that most students from the Faculty of Public Health in the case group are 12 respondents with a percentage of 30% and in the control group 21 respondents with a percentage of 52.5%.

Table 4. Distribution of Respondents Based on Stress Level

Stress Level	Case		Control	
	n	%	n	%
Mild	8	20	7	17,5
Moderate	30	75	32	80
Severe	2	5	1	2,5
Total	40	100	40	100

Based on table 4, it was found that the average respondent was at a moderate level of stress in the case group and control group. In the case group, there were 30 respondents (75%), and in the control group there were 32 respondents (80%).

Relationship between Stress Level and Smoking Behavior

Table 5. Relationship between Stress Level and Smoking Behavior

Stress Levels	Smoking Behavior				Total		OR (95% CI)	P-Value
	Ssmoking		No Smoking					
	n	%	n	%	n	%		
Mild	8	20	7	17,5	15	18,8	1,179 (1,38-3,63)	1,0
Severe	32	80	33	82,5	65	81,3		
Total	40	100	40	100	80	100		

Based on table 5, it is found that there are as many as 8 (20%) students who are at a mild stress level with smoking behavior, while among students who are at a severe stress level, there are 32 (80%) with smoking behavior. The results of the chi square test obtained a p value of 1.0, it can be concluded that statistically there is no significant relationship between stress levels and smoking behavior in students of UIN North Sumatra Medan Tuntungan. From the results of the analysis also obtained an OR value of 1.179, meaning that students who are at a severe stress level have a 1.179 times greater chance of smoking than students who are at a mild stress level.

Discussion

The results showed that 23 students (57.5%) in the case group were mostly aged 21-24 years. This is in line with a 2019 study at Malikussaleh University which found that the 20 to 24 age group was the largest age group, with 137 respondents (71.4%), and is considered the age of students with maturity in making decisions about their pleasure.(16) The results of research conducted on students of the faculty of medicine and the faculty of mining at the University of Papua showed that 70.8% of FK respondents and 80.6% of FTTP respondents were aged between 20-24 years, in addition to the 2013 West Papua Riskesdas found that 19.1% of students aged between 20-24 years were smokers. Cigarette manufacturers focus on young adults and teenagers due to the fact that smoking early increases the likelihood of becoming a smoker into old age.(17)

The results of the study in table 4 show that UIN North Sumatra Medan Tuntungan students have a moderate level of stress in the case group, namely 30 respondents or 75% of the respondents. The results of research conducted by Pamukhti, showed that interpersonal and academic problems, as well as problems with campus friends, social friends, and family are the most common causes of stress experienced by students. They can reduce stress by talking to friends or parents, crying, listening to music, interacting with the internet or social media, calming themselves, and various ways including smoking.(9)

Cigarettes are needed to maintain balance. In addition, the stress experienced by students is caused by busy class schedules and piling up assignments given by lecturers. Then students get upset and emotional because they think the assignments only make them depressed. Finally, what students do to relieve their stress is refreshing, being alone, and even some of them relieve their stress by smoking.(18) Students often choose the wrong way to deal with stress. They believe that smoking is the most effective way to cope with the stress they face, and is the way that many students choose. Students do not realize that smoking can cause many problems, moreover, their smoking intensity will increase when they are in a stressful situation. (19)

Statistical results using the chi square test between the two variables show the p value is 1.0 or $p > 0.05$, which means H_0 is accepted and H_1 is rejected, so it is statistically found that there is no significant relationship between stress levels and smoking behavior in students of UIN North Sumatra Medan Tuntungan. These results are in line with Mangesa's research, which is based on an analysis conducted by researchers on 407 students aged 18-25 years, researchers found that there is no relationship between stress levels and smoking behavior in students in Makassar city. This can be seen from the p-value of 0.560 ($p > 0.05$) indicating that the relationship between students in Makassar is not significant or does not exist.(6) In addition, Defie's research also found that there were no significant results ($p > 0.05$) between stress levels and smoking behavior.(13) Smoking behavior is not the only activity that subjects engage in when feeling stressed, so stress does not seem to have a significant relationship with smoking.

In addition, a study by Widiyanto based on statistical results found that there was no relationship between smoking behavior and stress levels, or no significant results were obtained ($p > 0.05$). Internal factors such as biological factors and external factors, namely social environmental factors, such as being influenced by peers, are factors in smoking behavior.(8) This is in line with Suryawati's research, finding that some participants explained that the participants' smoking behavior arose due to the influence of peers when gathering together or socializing. In addition, a sense of friend loyalty or embarrassment when socializing is also one of the causes of the participants' smoking behavior.(20)

Conclusion

The level of stress experienced by UIN North Sumatera Medan Tuntungan students is at a moderate level of stress in the case group and control group. In the case group there were 30 respondents (75%), and in the control group there were 32 respondents (80%). The p value of 1.0 is greater than 0.05 so that H0 is accepted and H1 is rejected, which means that statistically there is no significant relationship between stress levels and smoking behavior in students of UIN North Sumatera Medan Tuntungan. The results of the analysis also obtained an OR value of 1.179, meaning that students who are at a severe stress level have a 1.179 times greater chance of smoking than students who are at a mild stress level.

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