

The Relationship of Demographic Factors with Smoking Behavior in the Rural Population

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ABSTRACT

OBJECTIVE: The study aims to determine the relationship between demographic factors and smoking behavior in rural residents on the outskirts of Banda Aceh, Indonesia.

METHODOLOGY: This correlational research employed a cross-sectional design. The study population comprised people in one village on the outskirts of Banda Aceh City, totaling 1,108 people. The sample size was estimated, and a total sample of 220 individuals was selected using a nonprobability sampling technique. The study used a questionnaire to assess respondents' demographic data and smoking behavior. The relationship between age and cigarette smoking frequency was analyzed using one-way ANOVA. The relationship between smoking behavior and gender, education and employment status was analyzed using the chi-square test.

RESULTS: The study findings show that the average respondents were 44 years old, with 66,3% female and 33,6% male respondents. There was a significant relationship between age ($p=0.008$), gender ($p=0.000$), and employment status ($p=0.000$) with smoking behaviour. The correlation between education level and smoking was insignificant ($p=0.32$).

CONCLUSION: Demographic factors are related to smoking behavior in rural communities, especially in the aspects of age, gender and employment status. Community nurses and other health professionals should address these demographic factors in their smoking prevention and cessation programs.

KEYWORDS: Tobacco smoking, behavior, society, demographic factors

INTRODUCTION

Smoking in the modern era has become a lifestyle easily found in society¹. Smoking is considered to be one of the factors causing chronic diseases that attack the function of our body, including the lungs and heart. Smoking is also identified as the leading cause of death in the world. Apart from that, the increasing number of smokers can trigger various problems in the social, economic and health sectors².

The prevalence of smoking can differ by societies, countries and regions. Tobacco consumers are dominated by residents of the Asian and Australian continents with a percentage of 57%, followed by residents of Eastern Europe and parts of the Soviet Union with a percentage of 14%, America with a percentage of 12%, Western Europe with a percentage of 9%, and Middle East and Africa as much as 8%. Southeast Asia is a region with a large percentage of cigarette users, namely around 10% of all smokers in the world and is one of the causes of global death with a percentage of 20%³.

Nationally, around 24.3% of individuals aged over ten years were cigarette consumers in Indonesia⁴. The prevalence of men who consumed cigarettes was 62.9%, while among women, the percentage was 4.8% of the total population of Indonesia aged >15 years⁴. In Aceh Province, smoking prevalence has been significantly high. The rate of cigarette consumers aged over ten years was around 22.4% in Banda Aceh City and 19.3% in Aceh Besar⁵.

Demographic factors have been regarded as one of the crucial factors for smoking behavior⁶. Various demographic factors, such as gender, age, socioeconomic status, geographic location, and cultural and ethnic background, can contribute to smoking behaviour. The proportion of current smoking among low-income adolescents was significantly associated with smoking a cigarette offered by best friends, passive smoking in the house, having best friends who smoked, and having smoked a whole cigarette at the age ≤ 12 ⁷. Men who make up the majority of cigarette consumers have several reasons, including considering that smoking is an inherent symbol of masculinity and also looks more mature. Smoking environmental factors, especially the family environment, are the causes of individuals smoking; roughly 68.7% of smokers come from smoking families⁸. The prevalence of tobacco smoking was reported to be higher among people who had low education and economic status⁹.

The impact of demographic factors can vary across populations. Factors that motivate individuals to

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smoke need to be elaborated further and remain unknown. Understanding the impact of demographic factors on smoking behaviour can help health professionals, including community health nurses, in developing an effective program intervention to reduce smoking prevalence among specific groups within the population. Thus, this study examines the relationship between smoking behavior and demographic factors, especially among rural communities.

METHODOLOGY

Study Design

The study used a descriptive correlation design with a cross-sectional study approach, which was conducted in November 2022

Population and Sample

The study population comprised people in one village on the outskirts of Banda Aceh City, totaling 1,108 people. The sample size was estimated, and a total sample of 220 individuals was selected using a nonprobability sampling technique.

Instrument

Data was collected using a guided interview method with a questionnaire assessing respondents' demographic data and cigarette smoking frequency in a day. Comments from relevant experts were invited to evaluate the validity of the instrument.

Data Analysis

Descriptive analysis was calculated to describe the frequency of respondents based on their background characteristics. The relationship between age and cigarette smoking frequency was analyzed using one-way ANOVA. The relationship between smoking behavior and gender, education and employment status was analyzed using the chi-square test.

Ethical Statement

The research has passed ethical examination by the Ethics Committee of the Faculty of Nursing, University Syiah Kuala, with ethical letter number 113015231122. Information regarding the study was provided to all participants. All respondents to the study provided written consent to participate.

RESULTS

Characteristic of Respondents

Characteristics of the study respondents are described in **Table I**. The average age of the sample was 43.3 years. Of the 220 respondents, the majority were male (66.4%), had a low education level (60.5%), and were not working or unemployed (60.9%).

Relationship between age and smoking behavior

The relationship between age and smoking behaviors is shown in **Table II**. As **Table II** shows, age was significantly correlated with smoking behavior among people in the village community ($p=0.008$).

Relationship between gender and smoking behavior

The relationship between gender and smoking behavior is shown in **Table III**. As **Table III** shows,

gender was significantly correlated with smoking behavior ($p=0.000$). Among smokers, a higher percentage of males compared with females reported frequency of daily smoking.

Table I: Characteristics of Respondents

Demographic factors	f	%
Age, in years		
Mean	43,27	
Gender		
Male	74	66,4
Female	146	33,6
Last education		
Low	133	60,5%
Medium	67	30,5%
High	20	9,1%
Employment		
Work	86	39,1%
Not Work	134	60,9%

Table II: Age and Smoking Behavior

		Sum of Squares	Df	Mean Square	F	Sig.
Smoking behavior	Between Groups	37,60	49	0,77	1,69	0,008
	Within Groups	77,31	170	0,45		
	Total	114,91	219			

Table III: Gender and Smoking Behavior

Gender	Frequency Smoking / Day				Total	p
	0	1	2	3		
Male (f,%)	30 (13,6)	26 (11,8)	12 (5,5)	6 (2,7)	74(33,6)	
Female (f,%)	136 (61,8)	8 (3,6)	2 (0,9)	0 (0)	146(66,4)	0.000
Total	166 (75,5)	34 (15,5)	14 (6,4)	6 (2,7)	220(100,0)	

Relationship between education and smoking behavior

The relationship between education and smoking behavior is shown in **Table IV**. As **Table IV** shows, the level of education was not significantly correlated with smoking behavior ($p=0.32$). Among smokers, the percentage of people with a low level of education who reported frequency of daily smoking was not significantly higher compared with people with another level of education.

Relationship between employment and smoking behavior

The relationship between employment status and smoking behavior is described in **Table V**. As **Table V** shows, employment status was significantly correlated ($p=0.000$). Among smokers, a higher percentage of working people compared with not working reported

frequency of daily smoking.

Table IV: Education and Smoking Behavior

Last Education	Frequency Smoking / Day				Total	p
	0	1	2	3		
Low (f,%)	95(43,2)	23(10,5)	10(4,5)	5(2,3)	133(60,5)	0,323
Medium (f,%)	53(24,1)	10(4,5)	4(1,8)	0(0)	67(30,5)	
High (f,%)	18(8,2)	1(0,5)	0(0)	1(0,5)	20(9,1)	
Total	166(75,5)	34(15,5)	14(6,4)	6(2,7)	220(100,0)	

Table V: Employment and Smoking Behavior

Employment	Frequency Smoking / Day				Total	p
	0	1	2	3		
Work (f,%)	44(20,0)	25(11,4)	11(5,0)	6(2,7)	86(39,1)	0,000
Not Work (f,%)	122(55,5)	9(4,1)	3(1,4)	0(0)	134(60,9)	
Total	166(75,5)	34(15,5)	14(6,4)	6(2,7)	220(100)	

DISCUSSION

This study aimed to identify the association between some social demographic factors and smoking behaviour amongst rural individuals. Analysis of the data from this study suggests a significant correlation between some demographic variables and the smoking behavior of people in the selected rural area. The findings of this study suggest that there was a relationship between age and smoking behavior among people in rural areas. The result of this study is in line with the findings of previous research, which also reports a significant relationship between age and smoking behavior¹⁰. Age is one of the crucial factors for smoking. The prevalence of smoking will increase with increasing age, which generally occurs at the age of 25-44 years¹¹. Also, the effects of smoking are influenced by age¹², an individual who starts smoking at an adolescent age will be less likely to quit smoking when they are adults¹³.

Regarding the association between gender and smoking behavior, the finding of this study shows that the proportion of smoking among men was significantly higher than in women. This study finding is in line with previous research, which reported a significant relationship between gender and smoking behavior^{10,14}. It has been previously reported that gender is an essential determinant factor for smoking in Indonesia¹⁵. Smoking is considered a symbol of masculinity, power and maturity for adolescent boys¹⁰. On the other hand, smoking is viewed as inappropriate and taboo for women¹⁵. Nationally, the proportion of smokers among individuals over ten years is significantly higher among men compared to females in Indonesia¹⁶.

This study also assessed the relationship between education and smoking behavior and found no relationship between education level and smoking behavior among people in rural areas in Aceh, Indonesia. One previous study has also found a similar finding, reporting no significant correlation between individual education level and their smoking

status¹⁷. Similarly, other studies reported no correlation between education level and smoking behavior¹⁸. Education has been considered as a possible predictor for smoking initiation⁷. There is no guarantee, however, that someone with higher education will not smoke tobacco and consume other drugs.

In regards to the relationship between employment and smoking behavior, the current study suggests an association exists between employment status and smoking behavior among people in a rural area. This finding is in line with a report from previous research, which states a significant relationship between employment status and smoking behavior¹⁹. A high level of social interaction among working respondents can increase the risk for smoking behavior¹⁹. Smoking behavior is influenced by social habits, where smoking is considered one of the things that should be done while resting. Also, extrinsic factors, including the workplace, can influence a person's smoking behavior²⁰.

CONCLUSION

This study concluded that there was a significant relationship between smoking behavior and age ($p=0.008$), gender ($p=0.000$), and employment status ($p=0.000$). Further research with a larger sample size and broader area coverage should be carried out regarding factors that influence smoking among people in rural areas.

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AUTHOR CONTRIBUTION

Mardevian D: Contributed to study conceptualization, study design, first draft of the manuscript preparation.

Tahlil T: Contributed to study conceptualization, data interpretation, and final draft of the manuscript and revision.

Marthoenis: Contributed to data collection and analysis.

All authors approved the final version of the manuscript.

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