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ORIGINAL ARTICLE

Smoking behavior of University of Forestry students in Yezin, Pyinmana Township, Myanmar

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Abstract

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Smoking behavior of University of Forestry students in Yezin,
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A cross-sectional study was conducted to determine the smoking behavior of University of Forestry students in Yezin, Pyinmana township, Myanmar and to identify the association between smoking behavior and the following factors: socio-demographic factors, accessibility of cigarettes, media influence, peer group influence, neighbors' and family influence. A questionnaire was administered to 230 university students of Forestry University. Descriptive statistics and the Chi-square test were used for analysis.

The results revealed that the prevalence of smoking among the students was 35.6%. The average age to start smoking was 17years. The factors significantly associated with smoking behavior were gender (p-value < 0.001), level of study (p-value $= 0.002$), monthly allowance (p-value < 0.001), and ease in obtaining cigarettes (p-value < 0.001). Group influence towards smoking behavior included classmates (p-value < 0.001), roommates (p-value < 0.001), close friends (p-value < 0.001) and neighbors (p-value <0.001).

The results suggest that the health education programs, especially peer education programs through anti-smoking programs in universities, should be conducted to make students aware of the hazards of smoking on health. Tobacco and a smoke-free environmental policy should be taken into account.

Keywords: smoking behavior, university students

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Introduction

A WHO report indicated that many health risks are associated with tobacco use, such as cancer, heart attacks, stroke and other cardiovascular diseases and infertility[1]. These tobacco-related diseases are leading causes of death in the world[2]. Over 500,000 die in the South East Asia Region due to these diseases, and the death rate of smokers is three to four times higher than that of non-smokers[3]. Although there is evidence of smoking harm, the number of smoker worldwide has not decreased. It is predicted that the number will rise from 1.3 billion smokers in 2003 to 1.7 billion in 2025[4].

In Myanmar culture, smoking has been socially accepted since ancient times[5]. According to WHO reports, the prevalence of smokers in 2001 was 31.1 percent of the population above 15 years, and the prevalence of male smokers (42.9%) was two times higher than that of female smokers (21.9%)[3]. In 2008, the prevalence of male smokers had not decreased. The prevalence of male smokers increased to 46.5 percent, and the prevalence of female smokers decreased to 13.6 percent[6]. However, this rate is the highest in the South East Asia Region[7]. The high proportion of smokers was found not only in adults, but also in youth. WHO revealed that 25 percent of high school students had tried tobacco, and 33 percent of high school students currently smoked[8]. Htay[9] shows that 12.8 percent of medical students currently smoked, and male smokers did so at a higher rate than did female smokers. Previous studies[9-13] also confirm that many factors—sex, monthly allowance, peer group—are related to smoking behavior. Friends were found to be the major contributing factor for university student behavior[9]. Although there have been some studies conducted on tobacco use and smoking behavior in Myanmar, there are few studies on smoking behavior in specific target populations and in specific areas. As Pyinmana is one of eight townships in the Naypyitaw Capital Region, the new capital of Myanmar, there is no baseline data. This study therefore focused on the smoking behavior of university students in Pyinmana city, and identified the association between various factors and the smoking behavior of university students.

Methods

A cross sectional study was conducted at the Forestry University, Yazine, Pyinmana City, Myanmar after obtaining approval from the Mahidol University Institutional Review Board (COA. No. MU-IRB 2009 / 317.0812). The study sample was 230 first- to third-year students in the university. A questionnaire consisting of 56 questions included questions about the age and sex of students, monthly allowance, knowledge and attitude, accessibility of cigarettes, peer group influence, neighbor and family influence, media influence, and the smoking behavior of students. The questionnaire was pre-tested for reliability with 30 university students from the University of Agriculture. The Kuder-Richardson formula 20 for the knowledge part was 0.7, and Cronbach's Alpha for the attitude part was 0.7.

Smoking behavior was categorized into three categories: have never smoked, used to smoke and currently smoke. Knowledge was classified into three categories: high, moderate and low based on Bloom's criteria[14]. Attitude was categorized into good and poor by mean score.

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Descriptive statistics were used to describe the distribution of all study variables. A Chi-square test was used to assess the association between smoking behavior and independent variables: socio-demographic factors, accessibility of cigarettes, the influence of advertising, peer group influence, neighbor influence and family influence.

Results

Table 1 shows that slightly over two-thirds of the students (67.0%) were aged 19 to 20 years old and most of them were males (65.2%). Nearly 70 percent of students lived in a rented house or apartment apart from their parents. Most of them (64.8%) had an allowance of 65,000- 125,000 kyat per month.

Table 1 Frequency and percentage of respondents by socio-demographic characteristics

Socio-Demographic Characteristics	n	Percent
Age group (year)		
19 – 20	154	67.0
21 – 22	76	33.0
Mean= 20.13 SD= 0.73 Max= 22 Min=19		
Gender		
Male	150	65.2
Female	80	34.8
Level of education		
1st year	102	44.3
2nd year	87	37.8
3rd year	41	17.8
Living style		
Own house with parents	12	5.2
Living with relative	6	2.6
University dormitory	49	21.3
Rental house/apartment	163	70.9
Allowance per month (kyat/month)		
<65000	70	30.4
65000-125000	149	64.8
>125000	11	4.8
Mean= 76456.52 SD= 2626.90 Max= 150000 Min=5000		

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Table 2 Frequency and percentage of students by smoking behavior

Smoking Behavior	n	Percent
Have never smoked	111	48.3
Used to smoke (quit smoking)	37	16.1
Currently smoke	82	35.6

Table 3 Frequency and percentage of students by smoking pattern

Smoking Pattern	n	Percent
Age at first smoking cigarette		
10-15	6	7.3
16-21	76	92.7
Mean=17 SD=1.20 Max=21 Min =10		
Frequency of smoking		
Every day	64	78.0
4 to 6 days a week	6	7.3
1 to 3 days a week	12	14.6
Number of cigarettes smoked per day		
1-10	76	92.7
11-20	5	6.1
21-25	1	1.2
Mean=6 SD=4.30 Max=25 Min =1		
Money spent on cigarettes per day (kyat)		
100-500	67	81.7
501-1000	12	14.6
1001-1500	3	3.7
Mean=437.5 SD=298.40 Max=1500 Min =100		

The smoking behavior and the pattern of smoking are shown in Table 2 and Table 3, respectively. Nearly 50 percent of students never smoked, and 35.6 percent of students currently smoke. The results show that 78% of students who smoked did so every day. The average age for starting to smoke was 17 years old.

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Table 4 Frequency and percentage of students by knowledge levels and attitude levels towards smoking behavior

Variables	n	Percent
Knowledge		
Good (> 8)	32	13.9
Moderele (6-8)	148	64.4
Poor (<6)	50	21.7
Attitude		
Good (≥ 29.2)	106	46.1
Poor (< 29.2)	124	53.9

Table 4 shows the level of knowledge and the level of attitude towards smoking behavior. It shows that only 13.9 percent of students had good knowledge. Most of them (64.4%) had a moderate level of knowledge. This table also shows that 53.9 percent of students had a poor attitude towards smoking, while 46.1 percent of them had a good attitude towards smoking.

A majority of the students (97.0 %) replied that it was very easy to buy cigarettes. They could buy cigarettes from street vendors (43.0 %), local shops around the university (42.6 %), and local shops near home (14.3%) respectively. The students responded that they could get cigarettes from their friends at the university (32.6%) and other friends (23.0%). A great majority of the students (95.2%) replied that buying a pack of cigarette was cheap (Table 5).

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Table 5 Frequency and percentage of students by ease of access to cigarettes

Accessibility	n	Percent
Ease of buying cigarettes		
Yes	223	97.0
No	7	3.0
Place to buy cigarettes		
Local shop near home	33	14.3
Street vendors	99	43.0
Local shops around university	98	42.6
Easy to get from others without buying		
From my parents	5	2.2
From my friends at university	75	32.6
From my friends near home	7	3.0
From other friends	53	23.0
Never want to get them	90	39.1
Cost of Cigarettes		
Cheap	219	95.2
Not Cheap	11	4.8

As can be seen in Table 6, about one-third of the students mentioned that classmates (39.0%), roommates (28.4%) and close friends (32.6%) influenced their smoking. Few of the students thought that their classmates (27.0%), roommates (22.6%), or close friends (24.8%) influenced the frequency of smoking. Fathers/ mothers and relatives had less influence on smoking and frequency of smoking than did neighbors. The results in Table 7 reveal that dramas on TV (64.8 %) had more influence than other media, newspapers/magazines and the Internet.

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Table 6 Frequency and Percentage of students by peer group and family and neighbors influence on smoking behavior and frequency of smoking

Influential groups	Influences on smoking		Influence towards frequency of smoking	
	n	%	n	%
Peer Groups				
Classmates	92	39.0	62	27.0
Roommates	72	28.4	52	22.6
Close friends	78	32.6	57	24.8
Family and Neighbors				
Father/mother	19	8.3	17	7.4
Relatives	21	9.1	14	6.1
Neighbors	62	27.0	61	26.5

Table 7 Frequency and Percentage of students by type of media influence on smoking

Type of media	n	Percent
Dramas on TV	149	64.8
Newspaper/Magazines	58	25.2
Internet	23	10.0

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Table 8 P-value of factors significantly associated with smoking behavior

Variables	Smoking behavior				X^2	p-value
	Current Smokers		Non - Smokers			
	n	%	n	%		
Gender						
Male	77	51.3	73	48.7	46.22	<0.001**
Female	5	6.3	75	93.7		
Level of study						
1st Year	38	37.3	64	62.7	12.61	0.002*
2nd Year	21	24.1	66	75.9		
3rd Year	23	56.1	18	43.9		
Allowance per month (kyat)						
< 65,000	11	15.7	59	84.3	17.44	<0.001**
65,000 – 125,000	66	44.3	83	55.7		
> 125,000	5	45.5	6	54.5		
Easy to get from others						
Yes	79	56.4	61	43.6	68.78	<0.001**
No	3	3.3	87	96.7		
Classmate influence						
Yes	49	53.3	43	46.7	20.72	<0.001**
No	33	23.9	105	76.1		
Roommate influence						
Yes	37	51.4	35	48.6	11.31	0.001*
No	45	28.5	113	71.5		
Close friends influence						
Yes	43	55.1	35	44.9	19.52	<0.001**
No	39	25.7	113	74.3		
Neighbors influence						
Yes	38	61.3	24	38.6	24.32	<0.001**
No	44	26.2	124	73.8		

* Significant at p-value < 0.01

** Significant at p-value < 0.001

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Factors significantly associated with smoking behavior

The results in Table 8 show that that gender, level of study, and monthly allowance were found statistically associated with smoking behavior (p-value < 0.01). A significant association was also found between ease in obtaining cigarettes from others and smoking behavior (p-value < 0.001). There were significant associations between peer groups and smoking behavior; classmate influence, roommate influence, and close friend influence were found to be significantly related (p-value < 0.001, p-value = 0.001, p-value < 0.001, respectively). Neighbors were also found to have a significant association with smoking behavior (p-value < 0.001).

Discussion

The results show that about one-third of students currently smoke and a majority of them (78.0%) answered that they smoke every day. The average of cigarettes that students smoked was six per day. These results are quite high when compared with the results of Trinh[13] who reported that only 15.2 percent of students in Vietnam were found to be smokers, and they smoked fewer than three cigarettes per day. However, the prevalence of smokers was not different from the data of the Regional tobacco surveillance system conducted in 2001[3]. This may be because smoking has been socially accepted in Myanmar[5], and most of the students lived in a university dormitory, and rented houses or apartments apart from their parents, so they had the chance to smoke every day. The results also show that males smoked at a higher rate than females. This finding is similar to previous studies in Myanmar[3,6-9]. However, the results indicate that the prevalence of female smokers is higher than those in the national data in 2008[6]. A higher proportion of students in later years of study smoked than did students in lower years. The results also show that there is a significant association between year of study and smoking behavior. The same result was found in the work of the Nguyen[11]. This may be explained by the findings in this study which show that the students studying in later years got more money from their parents. They are then more capable of paying for cigarettes. It was also found that the students who got a larger allowance were more likely to be smokers than those who got a lower allowance. Another reason was that the students at higher levels may have more stress from studying than do the lower level students, and then they would like to relieve the stress by smoking. More than half of students (60.8%) answered that they could get cigarettes easily from others, especially from friends (58.6%) There was a significant association between the ease in obtaining cigarettes from others and smoking behavior (p-value < 0.001). The same result was found in studies Kailawadoko[11], and Duong[12]. This implies that friends may be a very important influence group on the smoking of students. This is similar to the result of Htay who found that friends were the major contributing factor for student behavior[9]. It is also supported by the results of this study that classmates, roommates and close friends influence smoking behavior of student (p-value<0.01).

Recommendations

Based on the findings of this study, it is suggested that a health education program, especially a peer education program through anti-smoking programs in

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universities, should be conducted to make students aware of smoking hazards on health. The prevalence of smokers then may decrease. The effective policy interventions: tobacco and a smoke-free environment and an advertising ban should be taken into account. Qualitative research is recommended in the future research to explore information in depth.

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