

Perceived Risk of Cigarette Smoking Among College Students

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ABSTRACT

Background: Many studies have indicated that the young adults (18-24 years) were not fully aware of health consequences of cigarette smoking. The objective of the study is to determine the prevalence of cigarette smoking among college students and to assess how they perceive the risks of cigarette smoking.

Methods: A cross-sectional study was carried out in Kathmandu valley during mid February and March 2011. This study comprises 340 students from seven private public health colleges of Kathmandu valley. The anonymous question contains information on demographic characteristics, smoking habits, and smoking related risk perception. Data was analyzed by both descriptive and inferential statistics including logistic regression with the help of Microsoft Excel 2007 and SPSS 11.5 version.

Results: Overall prevalence rate of ever smokers was 33% and about 16% were current smokers. Non-smokers were about 3 times more likely than smokers to report that smoking one to five cigarettes per day was harmful (aOR =2.60; 95% CI: 1.34-5.05). Similarly, Non Smokers were 2 times more likely to belief the statement that people get addicted to tobacco as to cocaine or heroin (aOR =2.27; 95%CI: 1.33-4.57). Nearly one fifth of smokers and non-smokers believed that smoking on a weekend or a couple of days a week was harmful, and there was no significant difference between two groups ($P>0.05$).

Conclusions: The study reveals the smoker students were less aware of risks of cigarette smoking and its health consequences. Thus there is a need to promote effective anti-smoking messages focusing effects of each cigarette they smoke.

Keywords: college students, smoking, risk perceptions.

INTRODUCTION

The college age students are in transition between the adolescence and early adulthood and developed unhealthy behaviors like cigarette smoking.¹ During this critical period, there is a tendency to express maturity and thus started to smoke cigarettes as an adult behavior. Many studies indicated that young adult between 18-24 years were not fully aware of health consequences of cigarette smoking and reported they have different level of risk awareness.² A study in US showed that the young

people between 14 to 22 years old overestimate risk of lung cancer, underestimate the year life loses, unable to explain addictive nature of smoking and also they do not recognize about risk of smoking in relation to other health risks.³

Majority of the smoking risk perceptions researches were being conducted in USA and few of them were in European countries. Conducting a research on smoking

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risk perception is vital to make sensitive and effective anti-tobacco messages.⁴ Therefore there is necessary to recognize how smokers and nonsmokers perceive risk of cigarette smoking.

Thus, the purpose of this study is to determine the prevalence of cigarette smoking among public health students and to assess how they perceive the risks of cigarette smoking in Kathmandu valley.

METHODS

A cross-sectional study was conducted from February to March 2011 at seven private public health colleges selected purposively in Kathmandu Valley. The anonymous questionnaire was distributed to the students at the class room by the research assistant who explained the objectives of the survey and content of the questionnaire. Ethical clearance was acquired from ethical committee of Kathmandu Medical College. Permission was obtained from the college authorities before taking interview with students. The informed consent taken was from the students explaining the objectives of the study and also assured confidentiality of their responses. The student participations were voluntary and requested to provide correct information. Only the students between the age of 18 and 24 years old were included in the study as they are sandwiched between adults and adolescents who plays key role in tobacco control efforts.⁵

The sample size was determined by using the following formula.

$$n = \frac{Z^2 pq}{d^2}$$

Where Z =1.96, prevalence of smokers among college students (p) =0.7, allowable error (d) =0.05 and non response rate =0.05

Based on these parameters, the required sample size was 340 and the study uses purposive sampling techniques. The collected data was entered in Epidata 3.02 and analysis was performed by using Microsoft Excel2007 and SPSS 11.5 version software. Descriptive statistics included percentage for categorical data and mean (\pm Standard Deviation) for continuous data were computed. The chi-square test was applied to measure association between perceived risk and smokers. The unadjusted odds ratio (OR) and their 95% confidence interval were calculated by bi-variate analysis. Further, adjusted odds ratios (aOR) were also obtained from logistic regression analysis to examine the perceptions of risk according to smoking habits. Significance was set for at $\alpha = 0.05$ for all tests.

The questionnaire was designed to collect data on the following information: (a) Demographic characteristics: it contains information on age, sex, previous qualification and their academic year. (b) Smoking behavior: It describes ever smoked; frequency and quantity of smoking in at 30 days; addition of smoking (inhale smoke and number of cigarette smoked); and consumption of non tobacco products. Further, the students are categorized into three groups: (I)Ever Smokers: The students who had ever smoked (Even a single puff) cigarettes.⁸ (II)Never Smoker: Someone who never smoked cigarettes (not even a puff) in his/her life time.⁶(II) Current Smoker: The smoker who smoked cigarette one or more in the past 30 days prior to the survey.⁶ Later, they are classified as smokers and non-smokers based on current smoking behavior. (c) Perceived of risks of smoking: The four questions related to short term exposure to cigarette smoking which was used to measure perception of risk. This protocol was used by the Murphy-Hoefer et.al.²All questions were measured on a four-point Likert scale from 1 (definitely yes) to 4(definitely no). For the purposes of analysis, the term “definitely yes” was endorsed as the outcome variable for each item.² Perceived risk measures of this study demonstrate acceptable degree of reliability coefficient ($\alpha=0.5$).

RESULTS

A total 340 respondents, overall response rate was 100% from seven public health colleges (only those present at class room during a survey day). Nearly 29% of respondents were from 1st year, 38% second year and 33% were third and final year. Nearly 6 of 10 were female students. The mean age of the students was 20.7 years (SD \pm 1.45). About 77% students were from higher secondary level (10+2 years- Biology group) and the remaining was from certificate level in health science.

Among total respondents, 33.3% had ever smoked cigarettes of which 68.5% were male. Nearly 16% were currently smokers and 60 % of them had already smoked more than 100 cigarettes. About 50% smokers always inhaled cigarettes and 12% never inhaled. The median number of sticks they smoked per day was 3 (Range: 1, 9). One in ten smokers also used smokeless tobacco products.

The prevalence of smoking is higher among male and found to be statistically significant ($p<0.05$). The prevalence rate was found to be increased in older ages but not significantly difference in their prevalence with respect to age ($P>0.05$). Though, the smoking prevalence was lower in students from biology group but the difference was not statistically significant ($P>0.05$) (Table 1).

Table 1. Prevalence of Cigarette Smoking according to Demographic Characteristics.

Variable	Number*	Prevalence (%)	p-value†
Sex			
Male	128	35.20	0.000
Female	212	4.20	
Age			
≤19	73	13.70	0.09
20-21	159	12.60	
≥22	108	22.20	
Academic Year ‡			
1st	96	19.80	0.387
2nd	131	13.70	
3rd	84	13.10	
4th	26	23.10	
Previous Qualification			
10+2 (Biology Group)	261	14.20	0.087
Certificate Level(Health Science)	76	22.40	

* Missing value were excluded from analysis, †Chi-square test applied ‡ only one college has fourth year public health students

Table 2. Percentage of students believed to statements about smoking related risks.

Statements	Non Smokers (%) (N=285)	Smokers (%) (N =54)	Unadjusted Odds Ratio (95% CI)	Beta Coefficient (B)	Adjusted Odds Ratio (95% CI)
a. Do you think people risk harming themselves if they smoke 1-5 cigarettes every day?	81.75	62.96	2.63 (1.40;4.94)	0.957	2.60 (1.34; 5.05)
b. Do you think people risk harming themselves if they only smoke on a weekend or a couple of days a week?	16.49	18.50	0.87 (0.409;1.84)	-0.193	0.84 (0.372;1.82)
c. Do you think a person who smokes only on a weekend gathering or at a party is a regular smoker?	7.01	9.25	0.74 (0.27;2.06)	-0.812	0.44 (0.15;1.32)
d. Can people get addicted to using tobacco just like they can get addicted to using cocaine or heroin?	68.77	46.29	2.55 (1.41;4.61)	0.906	2.50 (1.33;4.57)

Non-smokers were more likely than smokers to report that smoking one to five cigarettes per day was harmful. Similarly, Non Smokers were more likely to believe the statement that people get addicted to tobacco as to cocaine or heroin. Both statements were found to be statistically significant ($P < 0.05$). Less than 10% of the participants agreed that one who smokes on a weekend gathering or at a party is a regular smoker and no difference is noted by both groups ($P > 0.05$). Nearly one fifth of smokers and non-smokers believed that smoking

on a weekend or a couple of days a week was harmful although there was no significant difference between two groups ($P > 0.05$)(Table 2).

The results of binary logistic regression shows that out of four items of risks, two items (b and c) are related negatively to current smoking status and not statistically significant ($P > 0.05$). Awareness about smoking 1-5 cigarettes a day was harmful and get addicted to nicotine are positively related and strongly associated with smoking habits($P < 0.05$)(Table 2).

DISCUSSION

The public health graduates can play an active role to discourage tobacco use in the Nepalese community. In this context, antismoking behavior, knowledge of health effects of tobacco use and their attitudes towards tobacco are very important to reduce smoking prevalence and discourage young people from starting. Therefore, it is imperative to assess the prevalence of smoking use and their beliefs about harmful effects. Thus, this is one of the first studies to understand perception of smoking related risk among public health students.⁷

There is no data available regarding prevalence of smoking for public health students so comparison was done with medical students. Current figures were similar with prevalence data of smokers among medical students in Pokhara, Nepal.⁹ Global Health Professional Survey 2006 has also reported similar findings.⁷ However, current prevalence rate was lower than the smoking prevalence study of college students in Kathmandu valley.⁶

The present study also reported that male students are more likely to be smokers than female students and their difference was statistically significant. Another study conducted at Kathmandu valley showed similar results.⁶

The rate of prevalence increased from young (≤ 19 years) to oldest (≥ 22 years) by 63% which is similar with the study on the smoking behavior of Chinese college students.⁸ The study conducted in Nepal showed the prevalence rate of smoking was higher among the students who were above 20 years.⁶

This study pointed that academic year wise smoker prevalence range from around 20 to 23%. Similar results were found in other studies.^{1,10} The year wise prevalence rate for male students was statistically significant ($P < 0.05$) but not for female which supports the study in China.⁸

The present study explains that 60% smokers had already smoked more than 100 cigarettes and only 15% of them said they will not smoke next year. It indicates that they might have addicted to Nicotine. The surgeon general report described that the person who had smoked more than 100 cigarettes is more likely to become addicted to Nicotine than those who had not smoked 100 cigarettes.¹¹

The current study indicates several findings regarding risk perceptions among the students. Some of these results were similar with previous studies that the smokers underestimate the health consequences of smoking comparative to non smokers.^{2,12}

Majority of students believed that smoking 1 to 5 cigarettes a day is harmful and tobacco is an addicting substance. Here, the non-smokers are more likely to agree than the smokers that the smoking is harmful ($\beta = \text{Positive value}$ and $P < 0.05$). These findings were also similar with two studies conducted in USA.^{2,12}

In remaining items (b and c in table number: 2), both smokers and non smokers did not differ in their risk perception about the health risk associated with short term exposure to smoking ($\beta = \text{Negative value}$ and $P > 0.05$). This study also shows that minority of respondents perceived infrequent smokers as a regular smokers where less than 30% participants endorsed this view by the students of USA.¹² Regarding the question of occasional smokers (i.e. on a weekend or a couple of days a week), less than 10% participants agreed upon it while, in USA 52% in nonsmokers and 45% in experimenters endorsed their view.¹² It indicates that the current students were less aware of health risks of smoking compared to developed countries. A cross-sectional study conducted in China concluded the similar view.¹³ At this point, the cultural differences may play an important role in perceiving risk of smoking which is clearly illustrated by the researchers from Denmark and USA.⁴

Next, it is also necessary to understand how these young people receive, process, and act on anti-smoking campaigns conducted in the country might have role for the above difference. The present health education approaches focus only on long term health effects of smoking which underpin them that smoking is not harmful to them as its effect are seen as being far in future.⁷ Therefore, it is crucial to understand the risk perceptions of smokers before implication of health education programs and public health policy.¹⁴ The effective anti-smoking messages should be used for targeting the different level of smokers explaining them harmful effects of every cigarette they smoke. It should be able to explain reality, clear-cut messages, simplicity and thought provoking nature and its impact.¹⁵

Furthermore, the optimistic bias, which leads people to view themselves as less at risk than others, plays key role in young adult smoking.¹⁶ Eighty five percent smokers in this study were not sure about quitting cigarettes next years. The study conducted in US reported that 48% adult believed that they could safely smoke for a few years and then quit.¹⁶ Another study reported that 21% of the smokers between the age of 12 -18 years agreed that it is safe to smoke for a year or two.¹⁷ Another study conducted in 2009 showed that Deniers, who smoked in last 30 days but denied being a smoker, underestimate the health risk associated with non daily smoking behavior and also believed that their infrequent smoking habits is not due to addiction.¹² These figures indicate that

the young people failed to realize the concept of every cigarette they smoked damages their health. They have tended to perceive health risk of smoking in cumulative manner i.e. when the exposure to a hazard occurs repeatedly over time. Thus, college students underrate the personal health consequences of smoking.¹⁷

There was several limitation of the present study. Firstly, this study was based on self reported information so the accuracy can be affected by different factors like characteristics of respondents, motivation by research assistant during data collection, class room setting, and physical condition of respondents.¹¹ Secondly, the study does not cover all the public health colleges of Kathmandu valley. This is a limitation to generalize the results for public health students. Thirdly, the four risk perception questions were objective types (about people) so it does not give subjective information (Individual) regarding personal risk of smoking.^{17,18} Finally, the study has compared the perception of health risks with smokers and non-smokers only. These findings need to be further analyzed by types of smokers.

At last, there are many determinates like peer smoking behavior, family background, school and college curriculum, smoking history of family members, academic performance, types of smokers, academic year etc and the risk perception which can be studied through follow up study.

CONCLUSIONS

The study reveals the smoker students were less aware of risks of cigarette smoking and its health consequences. Thus there is a need to promote effective anti-smoking messages focusing effects of each cigarette they smoke.

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