

The Knowledge and Attitude Regarding the Health Effect of Smoking among Secondary Level Students in Nepal

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ABSTRACT— Adolescent smoking is a serious problem all over the world. This study, carried out among all adolescent, secondary level students of Nava Arunima Secondary School, Kathmandu, is a cross sectional and quantitative work. Data were collected during January-February 2015 with the help of semi structured and pre-tested questionnaire. The self-administered interview was taken from the study participants. Finally, descriptive statistics, simple tabulations for univariate analyses and chi square tests for bivariate analyses were done.

More than 59 % of the students had inadequate knowledge about the health effects of smoking. More than 61% of the respondents had a view that peer group influenced the adolescents to begin smoking and almost 30% of them had already experienced smoking. They viewed that smoking could be controlled by either teachers (45%) or the guardians (43.2%). Nearly 93% had understood smoking as an addictive behavior and 96% knew that it mostly caused lung cancer. They opined that making people aware about health effects of smoking on cigarette packets is a good policy (53%) and told smoking should be banned in public area (85%). Almost 59% had inadequate knowledge about the effects of smoking and statistical association was found between level of knowledge and use of mass media ($p=0.006$). However no association was found between level of knowledge with age ($p=0.729$) and gender ($p=0.338$). The Likert scale measured the attitude that they strongly agreed for - smoking being a disgusting behavior (79%), restriction of smoking in public place (85%) and making non smokers as a friend and disagreed with the idea of relaxation due to smoking (73%) and smoking being a personal matter (58%).

Since mass media has greater influence in increasing level of knowledge against smoking, the awareness programs through this medium would be the most effective to reduce smoking initiation among school going adolescents.

Keywords— Adolescents' Smoking, Health effects, Knowledge and Attitude, School children

1. INTRODUCTION

Adolescence is a transitional stage of physical and psychological development that generally occurs during the period from puberty to legal adulthood. According to World Health Organization the Adolescents, a young group of people between the ages of 10 and 19 years, are often thought of as a healthy population. However, many serious diseases in adulthood have their roots in adolescence. For example tobacco uses [1].

The world is home to 1.2 billion individual aged 10-19 years. The vast majority of adolescents -88% live in developing countries. The adolescents are prone to take risks and that is the common character, connected with the psychological need to explore beyond boundaries as part of the development of individual identity. Such readiness to take risks leads many adolescents to experiment with tobacco, alcohol and other addictive drugs without sufficient understanding of the potential damage to health or of other long-term consequences of addiction. The most common addiction is cigarette smoking, a habit that almost all tobacco users try while in their adolescent years. Also, it is estimated that 1 in 5 adolescents aged 13–15 are smokers, and around half of those who begin smoking in adolescence continue to do so for at least 15 years [2]. Tobacco kills nearly 6 million people each year. More than five million of those deaths are result of direct tobacco use while more than 600,000 are result of non-smokers being exposed to second

hand smoke. Unless urgent action is taken, the annual death toll could rise to more than eight million by 2030. In addition, 80% of those deaths will be in low and middle income countries [3].

Cigarette smoking during childhood and adolescence produces significant health problems in young people as the habit might persist till the adulthood or old age. According to Center for Disease Control and Prevention (CDC), Nearly 9 out of 10 smokers i.e. 99% smokers started smoking by the age of 18 [4]. Nepal is a developing country where tobacco consumption and cigarette smoking is very common. In Nepal, one in two men and one in three women is likely to have used tobacco. Tobacco kills up to half of its users [5]. A study conducted by ministry of health and population (MOH) surveyed 14,754 adolescents and youths aged 10-24 years in 300 sample wards showed that 3.41% of adolescents aged 10-14 used cigarette and 16.74% of adolescents aged 15-19 used cigarette and tobacco [6]. According to National Demographic Health Survey (NDHS), prevalence of smoking adolescent is high, that is 52% among male and 13% among female [7], study related to their knowledge and attitude regarding smoking is very crucial for examining the effectiveness of existing tobacco control program as well as implementation of new ones to improve knowledge and understanding against smoking. Smoking is prevalent in all ages but adolescents have been particularly vulnerable and smoking among them means exposure will be longer with subsequent higher adverse consequences. Therefore, this study is aimed to identify knowledge and attitude regarding health effect of smoking among secondary level students.

2. METHODS AND MATERIALS

This was a cross-sectional, non experimental and quantitative study. The information was collected from secondary level students of a school located at Arubari, Kathmandu. All the students who were studying in class 8, 9 and 10 were included in the survey that was conducted during January and February of 2015. There were total of 95 students who participated in the study. They voluntarily agreed to participate in the study after a verbal consent. The students who didn't belong to adolescence group and those who were absent during data collection period were excluded in the interview process.

2.1 Instrumentation

Self-administered, semi-structured questionnaire based on objectives was developed with the help of available literature and the expert's consultation. There were three parts in questionnaire. They are, the demographic detail of the respondents, knowledge level measuring score sheet and the five point Likert scale for measuring attitude. There was a separate set of questionnaire with altogether 15 questions for measuring knowledge level. Every question carried score 1 for positive answer and 0 for negative. At last the total score of each respondent was summed up and the mean was calculated. If the value lied above the mean level the knowledge was considered to be adequate. The five point Likert scale carried 10 questions each with 5 leveled answers (1. Strongly agreed 2. Agreed 3. Undecided 4. Disagreed 5. Strongly disagreed) and the percentage of each level of answer was calculated for measuring attitude. Pre-testing was done in similar group of population in a different school at Aarubari, Kathmandu. This helped to check the clarity of the tool and maintained reliability.

2.2 Data Collection Process

The study was conducted only after the written approval of the principal of school. The oral consent was taken from all the participants. Anonymity and privacy was maintained during the study process. The school was requested to provide their favorable time for data collection. The orientation regarding the research work, its purpose and the questions was provided to the respondents. Data was collected by self-administered questionnaire. About an hour was given to each group of student for completion of questionnaire. Collected data was checked for its completeness. Coding of data was done. The data was entered into computer and finally analyzed by using SPSS (software package for social science) version 16.0. Inferential statistics such as univariate and bivariate analysis was done. The Chi-square test was used to find the association between different variables.

2.3 Findings and Analysis

There were total 95 respondents. They were within the range of 13-18 years. The mean and median age was 15 years with the standard deviation of 1.22. Out of them 49.5% were female. Their ethnicity was either Aryan (54%) or Mongolian (47%). Almost 59% of the respondents were Hindus while there were 33% Buddhists. (Table 1)

Table 1: Distribution of Respondents by demographic data

Characteristics	Categories	Frequency (N=95)	Percentage
Sex	Male	48	50.5
	Female	47	49.5
	Total	95	100.0%
Ethnic Group	Aryan	51	53.7
	Mongolian	44	46.3
	Total	95	100.0%
Religion	Hindu	56	58.9
	Buddhists	31	32.6
	Christian	7	7.4
	Others	1	1.1
	Total	95	100.0%

Regarding the knowledge about the factors for initiation of smoking, highest, 61% of them had a view that peer pressure was the most important factor to begin habit. Almost 16% of them told that the initiation occurred due to exposure to advertisements which showed the bravery of heroes only after smoking. While 15% opined that any smoker member in the family could contribute for beginning the smoking habit (Table 2).

Table 2: Perceived factors contributing for initiation of smoking

Factors	Frequency (N=95)	Percentage
Smoker in family	14	14.7
Advertisement about tobacco	15	15.8
Availability of product at any age	5	5.3
Peer pressure	58	61.0
Pain and stress relief	3	3.2
Total	95	100.0%

All of the respondents knew about the secondary smokers and their health effect. They expressed that in a smoking environment, people can easily be affected by lungs cancer (81% response), respiratory diseases (90% response) and others (Table 3). Also, around 93% of the respondents had understood that it is an addictive behavior (Figure 1).

Table 3: Knowledge about the health effect of smoking

Effects of smoking	Responses		Percent of Cases
	Frequency	Percent	
Lungs cancer	91	25.9%	95.8%
Respiratory disease	75	21.3%	78.9%
Heart disease	29	8.2%	30.5%
Gastrointestinal disease	2	.6%	2.1%
Early wrinkling of skin	10	2.8%	10.5%
Dental problems	28	8.0%	29.5%
Diabetes	4	1.1%	4.2%
Damage blood vessels	5	1.4%	5.3%
Effects on immune function	5	1.4%	5.3%
Decreased fertility	8	2.3%	8.4%
Total	352	100.0%	

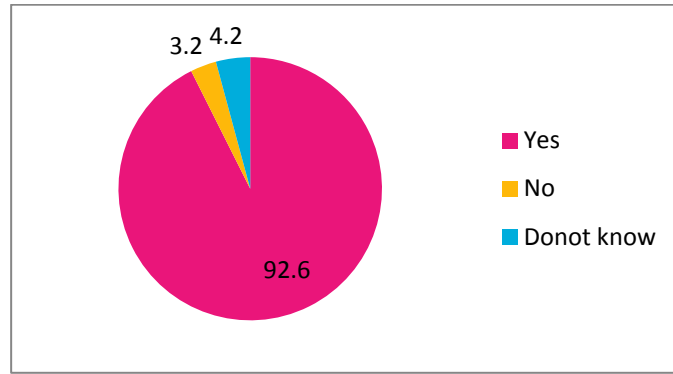


Figure 1: Knowledge about smoking being an addictive behavior

Majority of the respondents got the information about bad health effects of smoking from school teachers (38%) followed by guardians (33%) and mass media (13%, Table 4).

Table 4: Source of information about bad health effect of smoking

Source of information	Responses		Percent of Cases
	Frequency	Percent	
School teacher	82	37.8%	86.3%
Peer groups/friends	10	4.6%	10.5%
Guardians	71	32.7%	74.7%
Mass media	29	13.4%	30.5%
Health personnel	25	11.5%	26.3%
Total	217	100.0%	

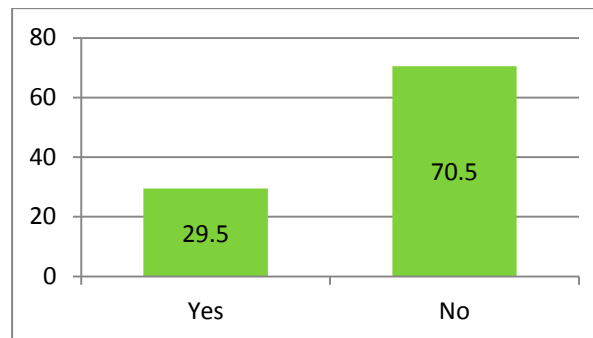


Figure 2: Percentage of adolescents experiencing the smoking

Nearly 30% of the had already experienced smoking (Figure 2). They also, opined that school (45%) could play a vital role to prevent smoking among adolescents and similar number of students (43%) had a view that guardians could control it.

More than 92% of the respondents were found to have knowledge about the bad health effect of smoking on the passive smokers (Table 5).

Table 5: The perceived factors to control smoking and knowledge about passive smokers

Descriptions	Frequency (N=95)	Percentage
Factors to control smoking		
School	43	45.3
Guardians	41	43.2
Friends	10	10.5
Government	1	1.1
Total	95	100.0%
Knowledge of risks on passive smokers		
Yes	87	91.6
No	8	8.4
Total	95	100.0%

Finally they were asked about the solution to control passive smoking in public place. Some 52% of them opined about strict no smoking rule in the public places and 42% of them suggested to punish legally to those who smoked in public place (Table 6).

Table 6: Ways to minimize passive smoking

Description	Responses		Percent of Cases
	Frequency	Percent	
No smoking rule in public area	71	51.8%	74.7%
Smoking zone in commercial building	8	5.8%	8.4%
Punishment if smoked in public area	58	42.3%	61.1%
Total	137	100.0%	

Regarding the level of knowledge, although, cent percent of the respondents had known about health effect of smoking, only 41% of them had adequate knowledge about it (Figure3).

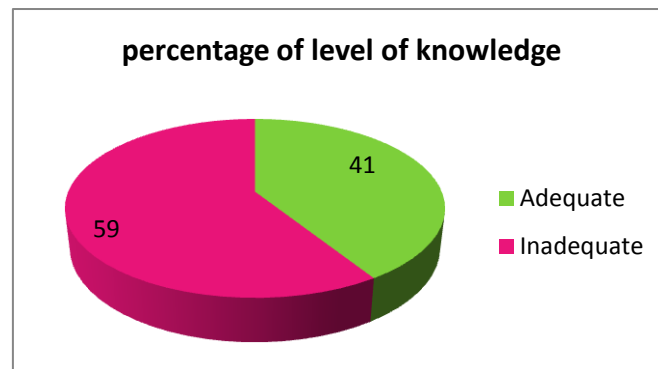


Figure 3: Percentage of level of knowledge

There was a significant statistical association of knowledge with media exposure ($p=0.006$, Table 7). However, no such relationship existed between the knowledge of smoking with age or sex (p -values 0.729 and 0.338 respectively).

Table 7: Cross tabulation between level of knowledge and sex/ age/ influence of mass media

Description	Knowledge classification		Chi Square	P value
	Inadequate %	Adequate%		
Sex				
Male	46.4	56.4	0.916	0.338
Female	53.6	43.6		
Age interval				
13-15	62.5	59.0	0.120	0.729
16-18	37.5	41.0		
Influence of mass media				
Yes	19.6	46.2	7.619	0.006
No	80.4	53.8		

The Likert scale measured the attitude about smoking which showed interesting results. They had strong agreement for smoking being a disgusting behavior (79%), a dangerous second hand smoking habit (66%), prohibition of smoking in public area (85%), willing to make non smoker friends (78%) and health warnings on cigarette packets (53%) while they strongly disagreed about the ideas that smoking relaxes and reduces tension (73%), accepting friends' request of smoking to strengthen friendship (58%), smoking being absolutely a personal matter (58%), lowering of tobacco tax (72%) and making no smoking zones at school premises.

3. .DISCUSSION

The study had found that 61% of the adolescent students perceived that peer pressure was the main factor for initiation of smoking. The result seemed to be supported by a study on college students in Irbid, Jordan, who expressed that friends, not the family were the first inspiration of smoking and 82% of the cases commonly occurred after the age 15 [8]. The result was also supported by another research carried out by Mandil et al. [9] among undergraduate students of Saudi Arabia where peer pressure was significantly associated with smoking habit of them. However, these works explained about students above 18 years of age.

In this study, the knowledge of 26% of the adolescent students focused on lung cancer to be a common disease among various health effects of smoking and this was followed by the respiratory disease (21%). The study by Brownson et al. in two different cities of USA [10] had revealed the similar result that people well knew about the risks of smoking and highest of the responses was the lung cancer (72%). This study was supported by yet another study at Nepal where lung cancer was perceived as prominent physical risk of smoking [11]. Regarding the knowledge about smoking as an addiction, more than 9 out of 10 adolescents in this study understood that it is an addictive behavior. A study by Helpert-Felsher et al. [12] uncovered that smokers and intenders reported the chance of addiction as less likely than did others similar habits.

In our case, majority of respondents gained knowledge about health effect of smoking from school teachers (38%) and the guardians (33%). This fact contradicted by similar study conducted by Shashidhar et al. [13] in which majority of participants had never been taught about smoking either in school or at homes and more than half obtained information about smoking from TV, a common mass media. This variation might be due to difference of the demographic characteristics of study population such as age, ethnicity and socio-economic conditions.

A survey study in UK [14], among the adolescents of age 15-16 inferred that even though the schools had an intermediate level of no smoking policy, 21% (95% CI 17.8% to 24.2%) smoked every day. Similar finding was tapped in our case where 30% of those school children had already experienced the first puff of the tobacco.

This clears that smoking habit initiates in early adolescent age in one fourth of the school children. This study identifies almost 45% of adolescents believed that school can play vital role to aware and control smoking among the adolescent group of age 13-18 and the campaign can equally be supported by the guardians (43%). A circle of friends/ teachers, and the parents/ guardians are the immediate and closest fellows of all who can impart the most influentive role to stop the initiation of smoking. Similar results were exhibited in a study by Christakis and Fowler in USA [15], which revealed that smoking cessation is most effective by an immediate contact fellow like, a spouse decreased a person's chances of smoking by 67%, a friend decreased the chances by 36% and a coworker decreased it by 34%.

This study found that 92% of the adolescents had knowledge about the passive smoking and its health consequences. So, they even opined to reduce its effect by no-smoking rule (75%) in school or other public places. Similar result was found by a cross sectional survey study by Blackburn et al. [16], carried out in families with at least one smoker, where 86% of the parents reported about the harms of smoking environment and only 65% admitted to save their children from it by at least two ways at home, that is either not smoking inside home or airing room during or after smoking inside the house.

Even if cent percent of the students were aware about negative health effect of smoking the level of knowledge, in this study, was adequate in only 41% of the respondents in this study. A study in a community of Kaski, Nepal [17], showed that, slight more than half of the participants (58%) were having good level of knowledge and some 31% were having average level of knowledge towards ill effects of smoking. This indicates, an effective program is necessary to uplift these values to reduce risks of initiation of smoking among adolescents.

However, the association between knowledge with gender and age, in this study, had clarified that there exists no association between knowledge and gender (Chi-square= 0.916, and $p= 0.338$; Chi-square= 0.120, and $p= 0.729$ respectively). The similar result was explored in the study about gender differences and the smoking habits [18], where, there was no significant differences between this habit and the gender. In contrast, Breslau et al [19] revealed that earlier the age to start smoking, heavier the subsequent daily cigarette consumption was. The statistical association between knowledge and exposure to mass media was found to be significant (Chi-square= 7.619, and $p=0.006$). This means that the knowledge about the health effect of smoking does not vary with the age or gender of the respondents while it would vary positively if the adolescents are exposed to mass media. Similar result was drawn in a study among the adolescents of Massachusetts USA where exposure to antismoking advertisements on television had no effect on establishing smoking habit, in the older adolescents (aged 14 to 15) [20]. Nonetheless, it showed significant association with the younger adolescents (odds ratio = 0.49, 95% confidence interval = 0.26, 0.93). The critical review by B R Flay explored that the information/motivation programs/campaigns generally produced changes in awareness, knowledge, and attitudes against smoking [21]. Therefore mass media can be effective means to enhance level of knowledge against adolescent smoking.

4. CONCLUSION

On assessing the knowledge and attitude about health effect of smoking among 95 adolescent respondents of age group 13-18, more than half of the respondents did not have adequate knowledge against smoking and its health effects. Since they explained the peer influence to initiate smoking in adolescent, the minimum age bar for smoking must be implied for preventing them to start smoking. Also, the awareness programs to save them from this unhealthy habit must be organized by school/ teachers or the guardians. The literatures suggest the linkage that, earlier the beginners are heavier and longer the smoking habit is. Adolescence itself is the most vulnerable age to take any kind of risk and to save them from this hazard is everyone's challenge at present and mass media can be an effective means to mitigate this social problem.

5. ACKNOWLEDGEMENT

Authors would like to thank Nepal Institute of Health Sciences College for giving the platform for bringing the work into this shape. We are heartily thankful to Prof. Yogendra Pradhananga for giving us continuous guidance during the study.

6. REFERENCES

- [1] W.H.O. (World health organization), "Adolescent health", 2014, URL- http://www.who.int/topics/adolescent_health/en/
- [2] U.N.I.C.E.F. (United Nations International Children's Emergency Fund), "The state of the world's children", United Nations Children's Fund, New York USA, 2011.
- [3] W.H.O (World health organization), "Tobacco", 2014, URL- <http://www.who.int/topics/tobacco/en/>
- [4] C.D.C. (Centre for disease control and prevention), "Health Effect of Cigarette Smoking", Smoking And Tobacco Use, 2014, URL- http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/
- [5] W.H.O (World health organization), "Non communicable Disease", Fact Sheet, 2013, URL- <http://www.who.int/mediacentre/factsheets/fs355/en/>

- [6] Ministry of Health and Population [Nepal]. “Tobacco Control Reference Book”, Ministry of Health and Population, Kathmandu, 2011.
- [7] N.D.H.S. (Nepal Demographic Health Survey), “Nepal Demographic Health Survey Report”, Gov. of Nepal, Kathmandu, 2011.
- [8] Haddad H. G., Malak M. Z., “Smoking Habits and Attitudes Towards Smoking among University Students in Jordan”, *International Journal of Nursing Studies*, vol. 39, no. 8, pp.793–802, 2002.
- [9] Mandil A., Saeed A. B., Ahmad S., Al-Dabbagh R., Alsaadi M., Khan M., “Smoking among University Students: A Gender Analysis”, *Journal of Infection and Public Health*, vol. 3, no. 4, pp.179–187, (2010), URL- <http://www.sciencedirect.com/science/article/pii/S187603411000081X>
- [10] Brownson R. C., Thompson J. J., Wilkerson J. C., Davis J. R., Owens N W., Fisher E. B., “Demographic and Socioeconomic Differences in Beliefs about the Health Effects of Smoking”, *American Journal of Public Health*, vol. 82, no. 1, pp.99-103, 1992.
- [11] Aryal U. R., Petzold M., Krettek A., “Perceived Risks and Benefits of Cigarette Smoking among Nepalese Adolescents: A Population-Based Cross-Sectional Study”. *BMC Public Health*, vol. 13, no. 13, pp.1-9, (2013).
- [12] Halpern-Felsher B. L., Biehl M., Kropp R. Y. Rubinstein M. L., “Perceived Risks and Benefits of Smoking: Differences among Adolescents with Different Smoking Experiences and Intentions”, *Preventive Medicine*, vol. 39, no. 3, pp.559–567, 2004, URL- <http://www.sciencedirect.com/science/article/pii/S0091743504000945>
- [13] Sashidhar A., Harish J., Keshavamurthy S. R., “Adolescent Smoking: A Study of Knowledge, Attitude and Practice in High School Children”, *Pediatric oncall journal*, vol. 8, no. 1, URL: <http://www.pediatriconcall.com/Journal/Article/FullText.aspx/>
- [14] Moore L., Roberts C., Tudor-Smith C., “School Smoking Policies and Smoking Prevalence among Adolescents: Multilevel Analysis of Cross-Sectional Data from Wales”, *Tob Control, BMJ*, vol. 10, pp.117-123, 2001, URL- <http://tobaccocontrol.bmj.com/content/10/2/117>.
- [15] Christakis N. A., Fowler J. H., “The Collective Dynamics of Smoking in a Large Social Network”, *The new England Journal of Medicine*, vol. 358, pp.2249-2258, 2008, URL- <http://www.nejm.org/>.
- [16] Blackburn C., Spencer N., Bonas S., Coe C., Dolan A., Moy R., “Effect of Strategies to Reduce Exposure of Infants to Environmental Tobacco Smoke in the Home: Cross Sectional Survey”, *British Medical Journal, BMJ*, pp.327:257, 2003, URL- <http://www.bmj.com/content/327/7409/257>.
- [17] Gnanakshi D., Singh S., Poudel S., “Knowledge and Attitude on Ill Effects of Smoking among Adults Residing in Lekhnath, Kaski, Nepal”, *Indian Journal of Community Health*, vol. 26, no. 3, pp.308-311, 2014, URL: http://www.iapsmupuk.org/journal/index.php/IJCH/article/view/702/pdf_73.
- [18] Waldron I., Patterns and causes of gender differences in smoking. *Journal of Social Science and Medicine. EconPapers*. 32(9): 989–1005, 1991, URL- <http://www.sciencedirect.com/science/article/pii/0277953691901578>
- [19] Breslau N., Peterson E. L., “Smoking Cessation in Young Adults: Age at Initiation of Cigarette Smoking and Other Suspected Influences”, *American Journal of Public Health*, vol. 86, no. 2, pp.214-220, 1996, URL- <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.86.2.214>.
- [20] Siegel M., Biener L., “The Impact of an Antismoking Media Campaign on Progression to Established Smoking: Results of a Longitudinal Youth Study”, *American Journal of Public Health*, vol. 90, no. 3, pp.380–386, 2000, URL- <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1446163/>
- [21] Flay B. R., “Mass Media and Smoking Cessation: A Critical Review”, *American Journal of Public Health*, vol. 77, no. 2, pp.153-160, 1987. URL- <http://ajph.aphapublications.org/doi/abs/10.2105/AJPH.77.2.153>.