



FACTORS THAT INFLUENCE INITIATION OF SMOKING IN ADOLESCENTS: A CROSS-SECTIONAL STUDY

Medicine

Dr. Walied Khawar Balwan Senior Resident, Department of Community Medicine, GMC, Doda, Jammu and Kashmir, India.

Dr. Rauf-ur-Rashid Kaul Professor, Department of Community Medicine, Sher-i- Kashmir Institute of Medical Sciences, Soura, Srinagar, Jammu and Kashmir, India.

Dr. Uroosa Farooq Allaqband Senior Resident, Department of Community Medicine, Sher-i- Kashmir Institute of Medical Sciences, Soura, Srinagar, Jammu and Kashmir, India.

Dr. Rohul Jabeen Shah* Professor, Department of Community Medicine, Sher-i- Kashmir Institute of Medical Sciences, Soura, Srinagar, Jammu and Kashmir, India. *Corresponding Author

ABSTRACT

Background: Smoking is the most important preventable cause of death. According to the global youth tobacco survey (GYTS) presented by WHO, 25% of smokers smoked their first cigarette before the age of 10, hence it is of great importance to investigate the effect of smoking of family members, friends and celebrity on smoking initiation of adolescents. **Objectives:** To know the influence of smoking by family member, close friend, celebrity and secondhand smoke (SHS) on initiation of smoking in adolescent. **Material & Methods:** A descriptive cross sectional study was taken in school going adolescents of Kashmir. The list of private schools one middle school, one high school and one higher secondary school (All having co-education) were selected. Thus, a total of 27 schools, 9 from each selected district, were included in the study. A total of 1000 students participated in this study. **Results:** 74.14% reported smoking by family members as did 69.21% of non-smokers. 72.41% of smokers reported smoking by close friends in contrast to only 24.63% of non-smokers and this difference was found to be statistically highly significant (P-value < 0.001). 79.31% of smokers and 71.97% of non-smokers reported noticing celebrities smoking on TV/movies / shows / advertisements etc. Overall 50.80% of the participants had faced exposure to SHS. **Conclusions:** Media, peer influence and secondhand smoke exposure were the most important factors influencing smoking initiation and were common to all ethnic groups in the study. Interventions combining targeted public awareness, education, and media campaigns directed at parents/guardians should be investigated.

KEYWORDS

Tobacco, Adolescent smoking, Secondhand Smoking.

INTRODUCTION:

Adolescent tobacco use is a complex behavior and factors like, social bonding, social learning, lacking refusal skills, risk-taking attitudes and intentions have been highlighted as reasons for the onset of tobacco use in studies in developed countries. One study in the United States, found that the most powerful predictors of transition to smoking were alcohol, marijuana, and other drugs, involvement with violence, learning problems, frequent hanging out with friends and having friends who smoke.⁽¹⁾

Types of Smoking

Active smoking: A person who actively smokes that is inhales or exhales smoke.

Passive smoking/ Second hand smoking (SHS): Breathing in other people's cigarette smoke is called passive, involuntary or secondhand smoking (SHS). Secondhand smoke, also called "environmental tobacco smoke", comprises "side-stream" smoke from the burning tip of the cigarette and "mainstream smoke" which is smoke that has been inhaled and then exhaled by the smoker. Immediate effects of exposure to SHS include eye irritation, headache, cough, sore throat, dizziness and nausea.

Third-hand smoke: The 'third-hand' component is a reference to the remnants on surfaces after second-hand smoke has cleared out. It is environmental tobacco smoke that has oxidized with environmental nitrous acid to create carcinogens known as tobacco-specific nitrosamines. A 2010 study published in the Proceedings of the National Academy of Sciences found that eleven carcinogens could be found in third hand smoke including Polonium-210.⁽²⁾

As per WHO Global Youth tobacco Survey GYTS (2009) India, 14.6% of students currently use any form of tobacco, 4.4% currently smoke cigarettes, 12.5% currently use some other form of tobacco. SHS exposure is moderate one in five students live in homes where others smoke, and more than one third of the students are exposed to smoke around others outside of the home, one quarter of the students have at least one parent who smokes.^(3,4)

MATERIAL AND METHODS:

The study was a descriptive, cross-sectional study carried out in schools located in selected districts of Kashmir Valley with the aim to assess the influence of smoking by family-members, close friends, celebrity and secondhand smoke exposure in initiation of smoking in adolescents. The study was conducted in both government and private run middle, high and higher secondary schools of the Kashmir Valley. The study was conducted over a period of six months. The study population consisted of school going children in the 12-19 years age group.

Method of sampling: Multistage sampling technique was adopted to achieve the target sample size.

Sample size: The sample size was calculated taking into account the:

- Prevalence of tobacco use among school going children from the available literature.
- Confidence limit of 95%.

The sample size was calculated by using the following equation,

$$n = \frac{z^2 p(1-p)}{e^2}$$

Thus the sample came out to be 897. To avoid the influence of non-responders, a non-response rate of 10% was added and, to round off a sample of 1000 was taken up for the study.

School going adolescents belonging to the age group of 12-19 years from selected schools of Kashmir valley who consented to participate were included.

STATISTICAL ANALYSIS:

The standard statistical chi square (χ^2) test was applied where ever required and the results obtained have been discussed on 5% level of significance and p value of < 0.05 has been considered significant. The analysis of the data was done using SPSS version 20.00, Chicago, USA for windows.

ETHICAL CLEARANCE:

Approval was sought from the institutional ethical committee, SKIMS

for carrying out this study.

RESULTS:

Table 1: Association of tobacco use with smoking status of family members

Smokers Among Family Members	Smoker N (%)	Non Smoker N (%)	Odds ratio	P value
Yes	43(74.14)	652(69.21)	1.275(0.697	0.430
No	15(25.86)	290(30.79)	-2.332)	
Total	58(100.00)	942(100.00)		

Table 1 depicts association of tobacco use with smoking status of family members. Of the total smokers, 74.14% reported smoking by family members as did 69.21% of non-smokers and this difference was found to be statistically non-significant (P-value=0.430).

Table 2: Association of tobacco use with smoking status of friends

Smokers Among Close Friends	Smoker N (%)	Non Smoker N (%)	Total N (%)	P value
Yes	42(72.41)	232(24.63)	274(27.40)	0.001
No	16(28.59)	710(76.37)	726(72.60)	
Total	58(100.00)	942(100.00)	1000(100.00)	

Table 2: depicts association of tobacco use among study participants with smoking habits of their close friends. 72.41% of smokers reported smoking by close friends in contrast to only 24.63% of non-smokers and this difference was found to be statistically highly significant (P-value<0.001).

Table 3: Percentage of participants influenced by celebrity smoking

Noticed Celebrity Smoking	Smoker N (%)	Non Smoker N (%)	Total N (%)	Odds Ratio	P value
Yes	46(79.31)	678(71.97)	724(72.40)	1.490(0.77	0.227
No	12(20.69)	264(25.03)	276(27.60)	8-2.868)	
Total	58(100.00)	942(100.00)	1000(100.00)		

Table 3: depicts the influence of celebrities smoking and its association with tobacco use among the study participants. 79.31% of smokers and 71.97% of non-smokers reported noticing celebrities smoking on TV/movies / shows / advertisements etc. This difference was not found to be statistically significant (P-value=0.227).

Table 4: Prevalence of Passive smoking (SHS) among study participants

Exposure to SHS	Male N (%)	Female N (%)	Total N (%)	Odds ratio	P-value
Yes	230 (49.57)	278 (51.87)	508 (50.80)	0.912	0.469
No	234 (50.43)	258 (48.13)	492 (49.20)	(.711-1.170)	
Total	464(100.00)	536(100.00)	1000(100.00)		

Table 4 shows the prevalence of passive smoking among the study population. 230 (49.57%) of males and 278 (51.87%) of females gave history of exposure to second hand smoke (SHS). Overall 50.80% of the participants had faced exposure to SHS.

DISCUSSION:

Among various risk factors for starting tobacco use the family history of tobacco use, peer pressures, celebrity smoking and closest friend smoking. Similar risk factors were also observed in our study. In this study it was revealed that majority 74.14% of the current smokers had history of smoking among family members, in a similar study by **Jamison B et al**⁽⁶⁾ in Lithuania, Europe it was found that 37.4% had history of smoking among family members. The results also revealed that 72.4% of the smoker had close friends who smoke tobacco, similar findings were revealed by **Jamison B et al**⁽⁶⁾ in Lithuania, Europe where 84.9% of the smokers had closest friend smoking. However in contrast to our findings it was seen by **Rudskirira E et al**⁽⁶⁾ in Adisa Ababa, Ethiopia that a smaller proportion (40.5%) of the smokers had closest friend smoking. A similar study by **Gaffar AM**⁽⁷⁾ et al showed that among smokers 37.3% had their friend smoking. **Jyoung MJ et al**⁽⁸⁾ in similar study in Korea showed 44.9% had closest friend smoking, **AL-Zalabani A et al**⁽⁹⁾ in Madinah, Saudi Arabia found of smokers 71.4% had close friend smoking. It has long before been revealed that tobacco use by celebrities and promotion advertisements on TV shows has a strong influence on the tobacco use by adolescents as they want to act and follow, perform like these celebrities. In our study it was seen 79.31% of smokers were influenced by celebrity smoking while

20.69% were not. However it was reported by **Arora M et al**⁽¹⁰⁾ that lesser proportion of smokers 25.98% was receptive to tobacco promotion and 70.09% were not. In our study it was observed that of total study participants the overall total prevalence of passive smoking or secondhand smoking (SHS) was 50.8%. Similar results from low income and middle income countries were reported by **Bio Xi et al**⁽¹¹⁾ among adolescents where the prevalence of second hand smoking was 55.9% and **Mpabulungi L et al**⁽¹²⁾ from Uganda where 47.3% of students reported secondhand smoking exposure at home while 66.9% reported the same outside the home. Similar levels of SHS exposure among adolescents at home (36.4%) and at public places (48.7%) was also reported by **Sinha DN et al**⁽¹³⁾. However a lesser prevalence of exposure to SHS among adolescents at homes (21.9%) and in Places outside their homes (36.6%) was reported in **WHO-GYTS 2009 India**⁽¹⁴⁾. This environmental tobacco smoke (ETS) has no risk free level of exposure. Almost all the studies have shown that more than 50% people are exposed to SHS which can lead to risk of all those NCD's in the non smokers which do occur in tobacco smokers.

CONCLUSIONS:

Media, peer influence and secondhand smoke exposure were the most important factors influencing smoking initiation and were common to all ethnic groups in the study. Interventions combining targeted public awareness, education, and media campaigns directed at parents/guardians should be investigated.

RECOMMENDATIONS:

As this study focuses on school going adolescents, the findings would be especially helpful to initiate effective tobacco control programs in schools. Strict implementation of tobacco control initiatives in and around schools and public places and sale of tobacco products to minors. Implementing plain packaging of tobacco products and raising taxes can help in decreasing the prevalence of smoking.

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