Original Research Article

Knowledge, attitude and practice regarding smoking in school going adolescents of Kashmir, India: a cross-sectional study

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ABSTRACT

Background: Cigarette smoking, in the developed world, has been the major habit among children for both boys and girls. They usually take to the habit while in school before the age of 18. In India, tobacco consumption in multiple forms presents an emerging, significant and growing threat to the health of the adolescents. 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. Objective was to assess the knowledge, attitude and practice of school going adolescents regarding smoking.

Methods: A descriptive cross sectional study was taken in school going adolescents of Kashmir. The study included three districts from Kashmir valley and from each district, 2 government middle schools (1 girls and 1 boys), 2 government high schools (1 girls and 1 boys), 2 government higher secondary schools (1 girls and 1 boys) were selected. Also from 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: The current study included 464 males (46.4%) and 536 (53.6%) females. Among the study subjects, 523 (52.30%) belonged to the 12-15 year age bracket and 477 (47.70%) were between 16-18 years of age. Maximum of study participants belonged to nuclear family (63.10%) followed by joint family (36.90%). Majority of the study subjects belonged to socio-economic class IV (lower middle) 36.10% followed by class III (middle) 23.90% as per Modified BG Prasad's classification.

Conclusions: 75.9% opined that smoking tobacco is harmful to health in comparison to 89.1% of non-smokers, a difference found to be statistically highly significant (p value <0.001). Prevention of tobacco use in young people and the consumption of tobacco, among school students should be considered as a matter of great concern which requires holistic understanding.

Keywords: Adolescents, Attitude, Knowledge, Schools, Tobacco

INTRODUCTION

Tobacco is a plant product and most species of tobacco are in the genus of herbs Nicotiana. It is part of the nightshade family (Solanaceae) indigenous to North and South America, Australia, South-west Africa, and the South Pacific. Various Nicotiana species, commonly referred to as tobacco plants, are cultivated as ornamental

garden plants. N. tabacum is grown worldwide for production of tobacco leaf for cigarettes and other tobacco products.[1]

Tobacco has long been used in the Americas, with some cultivation sites in Mexico dating back to 1400-1000 BC. Many Native American tribes have traditionally grown and used tobacco. Eastern North American tribes have historically carried tobacco in pouches as a readily accepted trade item, as well as smoking it, both socially and ceremonially, such as to seal a peace treaty or trade agreement.

In some populations, tobacco is seen as a gift from the Creator, with the ceremonial tobacco smoke carrying one's thoughts and prayers to the Creator.[2] Smoking in India has been known since at least 2000 BC when cannabis was smoked and is first mentioned in the Atharvaveda, which dates back a few hundred years BC. Fumigation (dhupa) and fire offerings (homa) are prescribed in the Ayurveda for medical purposes and have been practiced for at least 3,000 years while smoking, dhumapana (literally "drinking smoke"), has been practiced for at least 2,000 years.

Tobacco was introduced to India in the 17th century. It later merged with existing practices of smoking (mostly of cannabis).[3] Cigarette smoking harms nearly every organ of the body, causes many diseases, and reduces the health of smokers in general. Smokers are more likely than nonsmokers to develop heart disease, stroke, and lung cancer.

They are at greater risk for diseases that affect the heart and blood vessels (cardiovascular disease). Smoking can cause lung disease by damaging your airways and the small air sacs (alveoli) found in your lungs.

Smoking can cause cancer almost anywhere in human body such as: Bladder, Blood (acute myeloid leukemia), cervix, colon and rectum (colorectal), esophagus, kidney and ureter, larynx, liver, oropharynx (includes parts of the throat, tongue, soft palate, and the tonsils), pancreas, stomach, trachea, bronchus, and lung.

Smoking also increases the risk of dying from cancer and other diseases in cancer patients and survivors. Smoking can make it harder for a woman to become pregnant. It can also affect her baby's health before and after birth.

Smoking increases risks for: preterm (early) delivery, stillbirth (death of the baby before birth), low birth weight, IUGR (Intra uterine growth retardation) sudden infant death syndrome (SIDS or crib death), ectopic pregnancy, oro-facial clefts in infants etc.

Smoking can also affect men's sperm, which can reduce fertility and also increase risks for birth defects and miscarriage.[4] The income which states/countries generate from the sale of tobacco on the basis of sale of tobacco

products is far less then what is being spent on morbidity of tobacco use at national or global level.[5]

Tobacco is in legal use everywhere in the world, it causes far more deaths than all other psychoactive substances combined. About 3 million premature deaths a year (6 percent of the world total) are already attributed to tobacco smoking. Tobacco products are the leading preventable cause of death, killing around 6 million people in 2011.

Over the past four decades, tobacco use has caused an estimated 12 million deaths in the world, including 4.1 million deaths from cancer, 5.5 million deaths from cardiovascular diseases, 2.1 million deaths from respiratory diseases and 94,000 infant deaths related to mothers smoking during pregnancy.

According to WHO (2009), consumption of tobacco has been growing at the rate of 2% to 5% per annum. It is estimated that number of deaths due to tobacco will increase from 3 million per year worldwide to 70million per year by 2020.[5,6] According to Global Adult Tobacco Survey (GATS), India (2016-17) the prevalence of overall tobacco use is 28.6% and among male is 42.4% and that among female is 14.2%, it also showed that the prevalence of tobacco use young population (15-24years age group) as 12.4%.

Also in the sustainable development goals (SDGs), goal 3(a) refers to strengthen the implementation of World Health Organization Framework Convention on tobacco control (WHO-FCTC) in all countries as appropriate.

Tobacco use among adolescents is influenced by multiple etiological factors, including individual, socio-cultural and environmental factors. 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, history of sexual intercourse, frequent hanging out with friends and having friends who smoke.[7] Cigarette smoking, in the developed world, has been the major habit among children for both boys and girls.

They usually take to the habit while in school before the age of 18. In India, tobacco consumption in multiple forms presents an emerging, significant and growing threat to the health of the adolescents. Many factors contribute to the initiation, experimentation and regular use of tobacco among youth.

Major determinants are: exposure to parental, sibling and peer smoking, peer group pressure, easy access to

smoking and non-smoking forms of tobacco, aggressive promotion and advertising, low cost, etc.[8]

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.

Two thirds of the students think smoke from others is harmful to them over 6 in 10 students think smoking in public places should be banned. Two third of the current smokers want to stop smoking. Three quarters of the students saw anti smoking media messages in the past 30 days, three quarters of the students saw pro cigarette ads on billboards.[9,10] Objective was to assess the knowledge, attitude and practice of school going adolescents regarding smoking..

METHODS

A descriptive, cross- sectional study design was conducted in both government and private run middle, high and higher secondary schools of the Kashmir Valley over a period of six months 20 March-20 September. The study population consisted of school going children in the 12-19 years age group. 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,

$$n=(z^2 p(1-p))/e^2$$

where, Z= 1.96 for 95 % confidence level or 5 % level of significance, e= Precision, which was set at 0.03, p= Expected prevalence which in this study has been taken as 30% (keeping in view available literature).

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.

Inclusion criteria

School going adolescents belonging to the age group of 12-19 years in selected schools from Kashmir valley were possible participants of the study.

Exclusion criteria

All those schools/adolescents in the study group who did not consent to participate in the study were excluded. Adolescent whose age was less than 12 years.

Statistical analysis

The data so collected was compiled and subjected to analysis using SPSS version 20.00, Chicago, USA for windows.

RESULTS

523 (52.30%) belonged to the age group 12-15 years followed by 477 (47.70%) belonging to the age bracket of 16-19 years. Overall 631(63.10%) of the study participants belonged to nuclear family and 369(36.90%) belonged to joint family setup.

Majority of the participants belonged to lower middle class 361 (36.10%), followed by middle 239 (23.90%), lower 235 (23.50%) and upper middle 115 (11.50%) classes respectively. Only 5.00% of the study participants belonged to upper class.
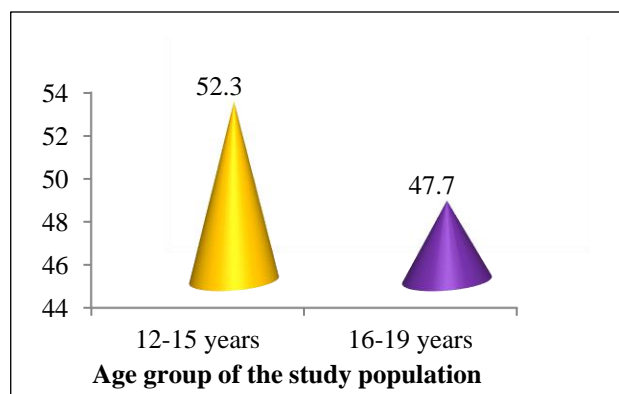
Figure 1: Depicts frequency distribution of study population as per age group.

Of the 1000 participants, 464 (46.40%) were males and 536 (53.60%) were females.
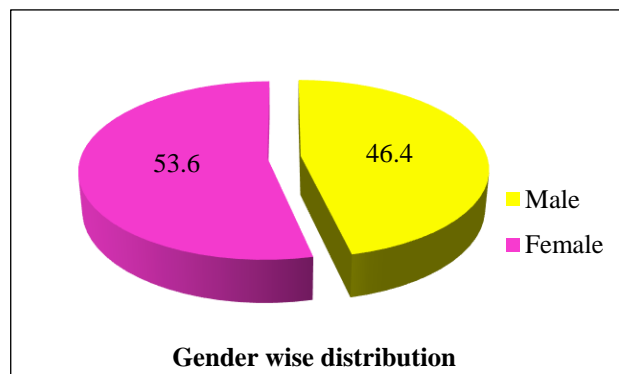
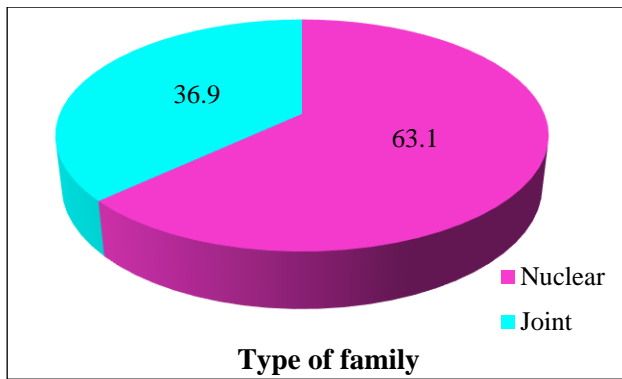**Figure 2: Shows gender wise distribution of study**

Figure 3: Distribution of the study population as per type of family they belonged to.
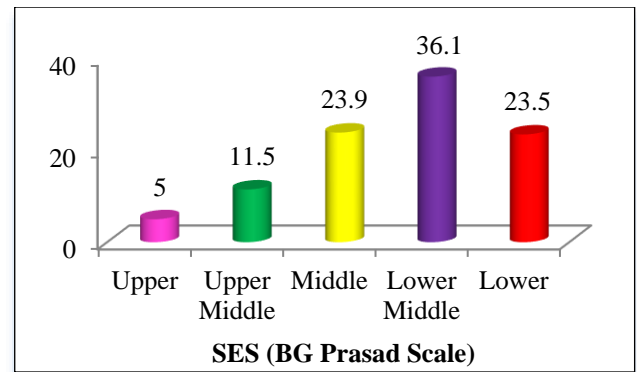

Figure 4: Socio-economic stratification of the study participants according to BG Prasad's SES Scale.

Table 1: Knowledge, attitude and practices of the study participants regarding smoking.

KAP	Smoker (N=58) N (%)	Non Smoker (N=942) N (%)	Total N (%)	Odds ratio	P value
Do you think smoking tobacco is harmful to your health					
Yes	44 (75.90)	839 (89.10)	883 (88.30)		
No	5 (8.60)	81 (8.60)	86 (8.60)		<0.001*
Don't know	91 (5.50)	22 (2.30)	31 (3.10)		
Has anyone in your family discussed about harmful effect of tobacco smoking					
Yes	39 (67.20)	736 (78.10)	775 (77.50)		0.054
No	19 (32.80)	206 (21.90)	225 (22.50)		
During the past 12 months did you read or were taught about the effects of tobacco					
Yes	42 (72.40)	718 (76.20)	760 (76.0)	0.819 (.452-1.485)	0.51
No	16 (27.60)	224 (23.80)	240 (24.0)		
Do you think the smoke from other people's tobacco smoking is harmful to you					
Yes	45 (77.60)	809 (85.90)	854 (85.40)		
No	3 (5.20)	78 (8.30)	81 (8.10)		0.002*
Don't know	10 (17.20)	55 (5.80)	65 (6.50)		
During the past 30 days, did you see any signs stating that adolescents are not allowed to buy any tobacco product					
Yes	26 (44.80)	260 (27.60)	286 (28.60)	2.131 (1.246-3.646)	0.005*
No	32 (55.20)	682 (72.40)	714 (71.40)		
Do you think tobacco advertising should be banned					
Yes	37 (63.80)	665 (70.60)	702 (70.20)	0.734 (.422-1.277)	0.272
No	21 (36.2.0)	277 (29.40)	298 (29.80)		
Do you think the price of tobacco products should be increased					
Yes	40 (69.0)	762 (80.90)	802 (80.20)	0.525 (.294-.937)	0.027*
No	18(31.0)	180(91.00)	198(19.80)		
Do you think the sale of tobacco products to minors should be banned					
Yes	46(79.30)	826(87.70)	872(87.20)	0.538(.277-1.046)	0.064
No	12(20.70)	116(12.30)	128(12.80)		
Are you in favor of banning smoking at public places					
Yes	42 (72.40)	813(86.30)	855(85.50)	0.417(.227-.763)	0.004*
No	16 (27.60)	129 (13.70)	145 (14.50)		
During the past 30 days, did anyone refuse to sell you tobacco products like cigarettes because of your age					
Yes	21 (36.20)	258 (27.40)	279 (27.90)	1.505 (.864-2.619)	0.146
No	37 (63.80)	684 (72.60)	721 (72.10)		
During the past 30days, did you see or hear any anti tobacco media messages on TV, Radio, Internet, Newspapers etc					
Yes	47 (81.00)	756 (80.30)	803 (80.30)	1.051 (.535-2.066)	0.885

Continued.

KAP	Smoker (N=58) N (%)	Non Smoker (N=942) N (%)	Total N (%)	Odds ratio	P value
No	11 (19.00)	186(19.70)	197(19.70)		
During the past 30 days you see any advertisements or promotions for tobacco products at points(Stores, Shops)					
Yes	24 (41.40)	354 (37.60)	378 (37.80)	1.172 (.684-2.010)	0.562
No	34 (58.60)	588 (62.40)	622 (62.20)		
If one of your best friends offered you a tobacco product, would you use it					
Yes	27(46.60)	70(7.40)	97(9.70)		
No	22 (37.90)	794 (84.30)	816 (81.60)		<0.001*
Don't Know	9 (15.50)	78 (8.30)	87 (8.70)		
At anytime during the next 12 months do you think you will use any form of tobacco					
Yes	24 (41.40)	70 (7.40)	94 (9.40)	8.793 (4.941-15.650)	<0.001*
No	34 (58.60)	872 (92.60)	906 (90.60)		
Once someone has started smoking tobacco, do you think it would be difficult for them to quit					
Yes	47 (81.00)	759 (80.60)	806 (80.60)	1.030 (.524-2.025)	0.931
No	11 (19.00)	183 (19.40)	194 (19.40)		
Do you agree or disagree with "I think I might enjoy smoking a cigarette''					
Agree	20 (34.50)	91 (9.70)	111 (11.10)	4.922(2.748-8.817)	0.001*
Disagree	38 (65.50)	851 (90.30)	889 (88.90)		
Should smoking be banned by state/Union Govt.?					
Yes	39 (67.24)	731 (77.60)	770 (77.00)		
No	10 (17.24)	126 (13.38)	136 (13.60)		0.147
Don't know	9 (15.52)	85 (9.02)	94 (9.4)		

Depicts the relationship of knowledge, attitude and practices regarding tobacco use among the study participants with their tobacco consumption status. Among smokers, 75.9% opined that smoking tobacco is harmful to health in comparison to 89.1% of non-smokers, a difference found to be statistically highly significant (p value < 0.001).

A similar pattern was observed vis-à-vis opinion regarding effect of second hand smoke on health status, with 77.6% of smokers and 85.9% of non-smokers being of the opinion that it is deleterious. This difference was found to be statistically significant (p value=0.002). 44.8% of smokers and 27.6% among non-smokers reported having noticed any signage prohibiting purchase of tobacco products by adolescents in the last 30 days. This difference was found to be statistically significant with a p value of 0.005.

In comparison to 80.9% of non-smokers, 69% of smokers opined that the price of tobacco products should be increased, a difference observed to be statistically significant with a p value of 0.027. 86.3% of non-smokers were in favor of banning smoking at public places.

In contrast, this percentage stood at 72.4% among smokers. A p value of 0.004 indicated that this difference was statistically significant. 7.4% of non-smokers as opposed to 46.6% of smokers admitted that they would accept a tobacco product if offered by one of their best friends. A p value of <0.001 indicated a statistically highly significant association in this regard.

A similar trend was observed when participants were asked whether they were likely to use any form of tobacco in the succeeding 12 months as 41.4% of smokers responded in the affirmative as against 7.4% of non-smokers. This difference was found to be statistically highly significant (p value <0.001). 34.5% of smokers and 9.7% of non-smokers agreed that they might enjoy smoking a cigarette. This difference was observed to be statistically highly significant (p value <0.001).

DISCUSSION

Tobacco use is the single most important preventable cause of disease and premature deaths worldwide. Adolescents are the most vulnerable population to initiate tobacco use. It is now well established that most of the adult users of tobacco start tobacco use in childhood or adolescence. Factors that commonly play a role in initiation of smoking among adolescent include social factors, smoking among family members, peers, teachers, psychological relaxation, pleasure, and economic factors.

There is a greater chance that children living with smoking parents will smoke and smaller possibility that they will quit. In the current study 88.3% of the study population thought that smoking tobacco is harmful to their health. A similar proportion of adolescents (90.5%) in Adisababa, Ethopia also felt that smoking is harmful. A lower proportion of Adolescents from GYTS 2009

India (66.8%) and Hirani et al (26%) from Gujarat, India perceived tobacco smoke as hazardous to health. Singh V et al however reported that more than 99% of the study subjects were aware of harmful effect of tobacco use.[11-13]

76% of the study subjects in the current study had read or were taught about the effects of tobacco. WHO GYTS 2009 also reported that 63.3% of adolescent had been taught about the dangers of smoking in the past one year.[11] Legislation favouring banning of all tobacco products is important to end the menace of this persistent epidemic. Many laws framed so far are not in favour of blanket ban. Under COTPA 2003 smoking has been banned at public places but still many are not in that favour also. In the current study 85.4% of the participants perceived smoke from other people's tobacco smoking as harmful. A lesser proportion of adolescents from GYTS 2009 (66.8%) perceived smoke from other is harmful to them.[11]

This current study also stressed on knowledge and provided awareness among the students in these selected schools making students and youth aware of the harmful effects of tobacco use will definitely decrease the prevalence of tobacco use in this population 85.5% of study participants were in favour of banning smoking at public places, it was however reported in GYTS 2009 India that only 63.9% of the study participants were in favour of banning smoking from public places.[11]

In the current study 72.1% of the participants reported that they were not refused to purchase tobacco products because of their age, this was in contrast to results of WHO GYTS 2009 India where 56.2% of the adolescents were not refused purchase because of the age.[11]

In our study 80.3% of the study subjects had seen or heard Anti-tobacco media messages. A similar proportion of participants (73.9% and 77.5%) reported exposure to antismoking media messages in the past 30 days in a study done by Mpubulungi et al in Uganda and by WHO GYTS 2009 respectively.[11,14]

In our study only 37.8% of the study subjects reported having seen pro smoking advertisement at point of sale. A higher proportion of adolescents were exposed to pro smoking advertisements as reported by WHO GYTS 2009 India (74.4%) and Mpubulungi et al (59.6%) in Aruva, Uganda. Banning of tobacco promoting messages to adolescents and replacing then will anti-tobacco messages on print and electronic media will surely help in controlling menace of tobacco epidemic.[11,14]

9.7% of the study subjects in the current study would use a tobacco product if offered by a friend, Hirani et al also reported that a similar proportion (12%) of the study subjects would use tobacco products if offered.[12] In the current study 9.4% of the adolescents were likely to use a tobacco product during the next 12 months.

As per the results WHO GYTS 2009 India, a higher proportion of the study subjects 15.5% were likely to initiate smoking during the next 12 months.[11] Timely awareness education and counseling in this regard may be helpful in preventing them from initiating the tobacco use.

Limitations

Tobacco use by minors and adolescents is not socially accepted anywhere. Our study was based on the use of a self-administered questionnaire; therefore, the denial of use is expected from some users. The students may face difficulty in understanding the questions of a self-administered questionnaire at the intermediate level, although most of the queries were clarified at the time of filling of questionnaire.

This is not an independent sample of schools but dependent on those who agreed to participate in the study, further the sample was not taken from all the districts of Kashmir valley, hence there are chances that we may not have recruited a representative sample from Kashmir. Furthermore, a cross-sectional study design is not the best design for assessing some of the variables associated with tobacco use.

CONCLUSION

The single best opportunity for preventing non-communicable disease in the world today is to prevent tobacco use in young people and the consumption of tobacco, among school students should be considered as a matter of great concern which requires holistic understanding. Many studies have focused on the prevalence of tobacco consumption among school students in different states of India but no study so far has covered the other related factors, such as, awareness level, role and responsibility of schools and parents.

Recommendations

Anti-tobacco education should be started from the begin¬ning of the primary school and should be reinforced every year. Tobacco Control Manual for schools developed by the WHO translated in local vernacular language should be used in all schools.

Need of School based educational programs focusing on smoked and smokeless forms of tobacco should be planned and implemented. Anti-tobacco education should be started from the begin¬ning of the primary school and should be reinforced every year.

Awareness programs can be launched for parents, teachers and peer groups. As this study focuses on school going adolescents, the findings would be especially helpful to initiate effective tobacco control programs in schools.

Special attention and culturally-appropriate education programs should be targeted at the adolescent students. Extracurricular activities such as celebration of 'World No–Tobacco Day', tobacco control photo exhibitions, essay writing competition, etc. should become an essential component of school activity to discourage students from tobacco use and creating awareness in the adolescent minds. Teachers should also be given training on formal tobacco-control education, and should have easy access to tobacco control materials. Cessation help should be made available up to the school level for better outreach.

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