



PERCEPTION OF HAZARDS OF TOBACCO USE: EFFECT OF EDUCATIONAL INTERVENTION AMONG SCHOOL STUDENTS IN A SUBURBAN AREA OF WEST BENGAL.

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ABSTRACT

Background:

Adolescence is a crucial crossover time of human life and tobacco use in this age group is not uncommon as revealed by GYTS India 2009 estimates (14.6%).

Objectives and methodology:

An interventional study was done among 151 students of 8th, 9th and 10th standard of a boys high school of North 24Paraganas, West Bengal to assess the knowledge, attitude and practice of tobacco use among them and to elicit the effect of health education on their knowledge and attitude towards tobacco use.

Results:

16.6% of the students were currently using tobacco products where as 32.5% of the students had ever used tobacco. Pre-intervention knowledge score (median=13) increased after intervention (median=21) and this improvement was statistically significant ($P < 0.05$) with effect size $\text{®} 0.615$.

Conclusion:

Health education about hazards of tobacco among school students can be used as a measure of primordial prevention of tobacco related health hazards.

KEYWORDS : Health education, hazards of tobacco.

Introduction:

Tobacco addiction is one of the most serious and preventable public health problem encountered globally. About 6 million people are killed due to tobacco consumption yearly, of which about 600,000 non-smoker's death are attributed by second hand smoke.¹ Adolescents constitute about one quarter of the total population of India which is around 243 million.² Adolescents undergo rapid changes physically and psychologically, which evolve according to their environment, the latter being the main determinant of their behaviour. Tobacco use is an acquired and aberrant behaviour of adolescents which ultimately make them vulnerable to different health hazards such as various cancers, hypertension, stroke, peptic ulcers etc. Various factors such as peer behavior, family environment, and mimicking the teachers and celebrities predispose teenagers to tobacco use.³ Most of the adolescents use tobacco for the first time for fun or just to see how it feels, but later it becomes habitual. Most studies have demonstrated that those whose initiation of smoking is in adolescence, are more likely to continue using it during adulthood.⁴ Tobacco use has substantial impact not only on individuals, but also on their families in terms of social and economic effects as well as exposure to second and third hand smoke. There are evidences that tobacco consumption even affects the unborn fetus. National Health Policy 2017 has targeted to reduce prevalence of current tobacco use by 15% by 2020 and by 30% by 2025.⁵ It is strongly felt that all young men and women should be empowered with knowledge regarding the hazards of tobacco use so that when they grow up they enter this world without the curse of tobacco consumption and this in the long run will help them to be deviated more towards positive health. With this background this study was undertaken to find out the effect of health education regarding the hazards of tobacco use among adolescent school children in a school situated in a suburban area of West Bengal by scientific assessment of their pre and post knowledge regarding tobacco consumption.

Methodology:

It was a school based interventional study, conducted in a government

aided boy's Higher Secondary school located in Barrackpore, North 24 Paraganas district, West Bengal among students of 8th, 9th and 10th standard. Study duration was of two months (from 01/09/2016 to 31/10/2016). Permission was obtained from Ethics Committee of All India Institute of Hygiene and Public Health (AIHH&PH), Kolkata, West Bengal and from the Head Master of the school. The students of 8th, 9th and 10th standard were included in the study. A self-administered structured questionnaire was prepared in English and then translated into the local language (Bengali) keeping semantic equivalence. The face and content validity of the questionnaire was checked by experts of Department of Preventive and Social Medicine of AIHH&PH, Kolkata. The questionnaire contained two sections – first section to obtain demographic information like class, parent's education and occupation and second section comprised of 19 questions which assessed the baseline knowledge about tobacco products and their methods of use, harmful effects, anti-tobacco legislation and their practice and attitude towards tobacco use. At the beginning, introduction of the investigators were made and information regarding nature of the study was explained. Then, pre-test questionnaire was administered. Intervention module consisted of systematically organised information about tobacco products, their methods of use, second and third hand smoking, addictive substance in tobacco, health hazards and legislation of tobacco (COTPA) 2003 with relevant pictures and intervention was delivered on the same day by lecture, power point presentation for 30 minutes all in local language (Bengali). Post-test evaluation was done using the same self administered questionnaire after 15 days of intervention. Data analysis was done using SPSS version 16 on the subjects who had completed both pre and post test questionnaire. Total number of participants were 151. Scoring was done to assess the pre-test and post-test knowledge by assigning for every correct response a value of "1" and for every wrong response and 'do not know' response a value of "0". For two open ended questions with possible multiple response '1' mark was awarded for each correct response. Mc-Nemar chi-square test was done to determine the effectiveness of health education on pre and post

test knowledge. The median pre test and post test scores were compared by using Wilcoxon Signed Rank test and effect size was derived to assess the change in knowledge and attitude following health education intervention.

Results:

In this study, mean age of study participants was 14.4 years (SD ± 1.14). Most of the students were from 9th standard (37.7%) followed by those of 10th (33.1%) and 8th (29.1%) standard. More than half (57.6%) of them belonged to nuclear family. About 44% of the fathers of the students were businessmen and about 88% mothers were homemakers. Regarding knowledge of methods of tobacco use, before intervention only 32.4% of the students knew that smoking is not the only method of tobacco consumption but after intervention it was increased to 86.1%. Before intervention only 51.6% knew that oral tobacco also cause diseases and it was increased to 99.3% after health education. Only 4.6% knew the name of the addictive substance present in tobacco before intervention.

Table1: Effect of intervention on knowledge of study participants about tobacco and its harmful effects (N= 151)

Domain	Question / Statement	Correct response		Sig. (McNemar)	Effect size (phi)
		Pre test n (%)	Post test n (%)		
Methods of tobacco use	Smoking is the only method of tobacco consumption	49 (32.4)	130(86.1)	0.00	.279
	Chewing/dipping/sniffing are other methods of tobacco consumption	96 (63.5)	143(94.7)	0.00	.128
	Is the smoke from other people's cigarettes harmful to your health?	149 (98.6)	151 (100)	--	--
	If a baby accidentally touches ashes/butt of burnt cigarettes, it is harmful to his health	92 (60.9)	147(97.4)	0.00	.132
Available forms of tobacco	Tobacco is present in gutkha	83 (54.9)	134(88.7)	0.00	.099
	Tobacco is not present in zarda	56 (37.1)	98 (64.9)	0.00	.191
	Tobacco is present in black cold drinks	83 (54.9)	95 (62.7)	0.09	.407
	Khaini contains tobacco	117(77.5)	147(97.4)	0.00	.109
Harmful effects of tobacco	Is cigarette smoking / chewing tobacco harmful to your health?	151 (100)	151 (100)	--	--
	Smoking is harmful but other methods are not harmful	106 (70.2)	117(77.5)	0.07	.481
	Bidi is less harmful than cigarette	46 (30.5)	119(78.8)	0.00	.132
	Does smoking cause any disease ?	150 (99.3)	151 (100)	--	--
	Does oral tobacco cause any disease ?	78 (51.6)	150(99.3)	0.00	.084
Addictive substance in tobacco	Name the addictive substance which is present in tobacco	7(4.6)	93 (61.6)	0.00	.174

Regarding diseases caused by smoking tobacco, before intervention 90.7% of the students mentioned that smoking causes cancer and after intervention 93.4% gave the same response. Lung cancer was answered by only 4.6% and 8.6% pre and post test respectively. Only 3.3% of students mentioned tuberculosis in pre test and it was increased to 20.5% after intervention. In terms of smokeless tobacco, there was minimal knowledge regarding all diseases, cancer was the well-known response given by 27.2% in pretest and 68.9% in post test. In terms of legislation of tobacco, only 42.4% told that the tobacco products cannot be sold to people less than 18 years of age in pre test and it was increased to 96.7% after health education.

Table 2 : Effect of intervention on knowledge of students about tobacco legislation (N=151)

Statements	Correct response		Sig. (McNemar)	Effect size(phi)
	Pre test n (%)	Post test n (%)		
Smoking in public places (streets/parks/bus stands) is legally banned	136 (90.1)	151 (100)	--	--
Legally tobacco products cannot be sold to under 18 yrs persons	64 (42.4)	146(96.7)	0.00	.159

Smoking in offices is not legally banned	75 (49.6)	112 (74.2)	0.00	.465
Smoking is allowed in rail stations	89 (58.9)	123 (81.4)	0.00	.260
Smoking is allowed during long journey by train/bus	63 (41.7)	126 (83.4)	0.00	.268

There were increase in favourable attitudes towards smoking after intervention except in two responses but changes in these two unfavourable responses were statistically insignificant.

Table 3: Effect of intervention on attitude of students towards smoking (N=151)

Statements	Favourable response		Sig. (McNemar)	Effect size (phi)
	Pre test n (%)	Post test n (%)		
Smoking gives more energy & increases capacity of work	133(88.1)	139(92.1)	0.18	.496
Smoking makes young people more attractive & popular	66 (43.7)	87 (57.6)	.001	.513
Smoking makes people look more grown-up	55 (36.4)	81 (53.6)	0.00	.372
There is no harm in having a cigarette once in a while	100(66.2)	116(76.8)	0.01	.437
Smoking helps people forget their worries.	77 (50.9)	104(68.9)	0.001	.171
Smoking is enjoyable & it helps people to relax	119(78.8)	117(77.5)	0.88	.147
Non-smokers should be proud to be smoke-free	130(86.1)	134(88.7)	0.618	.083
If someone's best friend offers a bidi/cigarette/tobacco product, it should be accepted gladly	140(92.7)	137(90.7)	.664	.086

The median knowledge score was increased from 13(10 – 15) to 21(19 – 22) after intervention with effect size of 0.615.

Table 4 : Effect of intervention on knowledge of tobacco, its harmful effects and legislation among study participants (N=151)

Domain	Pre test	Post test	Significance [Wilcoxon Signed Rank Test]	Effect size (r)
	Knowledge score Median(IQR)			
Methods of tobacco use	2 (2 – 3)	4 (4 – 4)	0.00	.372
Available forms of tobacco	2 (2 – 3)	3 (3 – 4)	0.00	.434
Harmful effect of tobacco	5 (4 – 6)	8 (8 – 10)	0.00	.613
Addictive substance in tobacco	0 (0-0)	1 (0 – 1)	0.00	.534
Legislation of tobacco	3 (2 – 4)	5 (4 – 5)	0.00	.575
Total knowledge score	13 (10 – 15)	21 (19 – 22)	0.00	.615

In terms of tobacco use, 49 (32.5%) of the students had ever used any tobacco product. Among all the students, 36 (23.8%) and 28 (18.5%) of them had ever smoked and ever used SLT respectively. Lowest age of initiation of both smoking and smokeless tobacco consumption were found at the age of 9 years. At the time of the study 25 (16.6%) students were using tobacco products and among them 36% and 32% procure tobacco from shop and from their friends respectively. More than half (54.3%) of the students were exposed to second hand smoking inside their house. There was a persistent misconception among most of them that smoking helps people to get relaxed. Majority of the students (72.8%) had seen anti-tobacco message in last one month, most common source of information was television (96.3%), followed by newspaper (50%), magazine (49%), bill board (39.1%) and cinema hall (33.6%). About 39% of students stated that their father was a smoker and used to smoke inside the house. More than half (54.3%) of them stated that they had seen their teachers to smoke. After intervention 130(86.1%) of the students agreed not to use tobacco in future compared to 90 (59.6%) students before intervention.

Discussion:

The present study attempted to evaluate the effect of educational intervention among students of 8th to 10th standard about hazards of tobacco use. In this study, 16.6% of the students were currently addicted to tobacco whereas GYTS of India reported prevalence of present tobacco use of 14.6%.⁶ In our study around 32% had tried any form of tobacco which is in concurrence with a study done in Gujarat⁷ by Naresh R et al. and in a study done by Imtiaz D et al. in Uttarakhand⁸ it was 42%, whereas in Tamil Nadu⁹, the prevalence was around 4.3% of smokers and 9.8% of smokeless tobacco. In this study, only 4.7% of students knew that tobacco causes oral cancer, whereas study done in Hyderabad¹⁰ showed 30%. In a pre-post study done in Karnataka¹¹ showed 11.4% to 94.3% improvement of knowledge regarding diseases caused by tobacco, whereas in our study, before intervention it was 99.3% and 51.6% for smoking and smokeless tobacco respectively which increased to 100% and 99.3% after intervention. In this study around 42% knew about the legislation that tobacco products should not be sold to people less than 18 years of age, similar to results found in a study done by Imtiaz D et al in Uttarakhand⁸. Lowest age of smoking was found to be 9 years which is quite similar with the findings of a study in Jamnagar, Gujrat by Naresh R et al.⁷ In our study it was found that 98.5% of the students were aware about harms of second hand smoke but 54.3% students were exposed to passive smoking (inside house) compared to findings of GYTS which was 66.8% and 21.9% respectively.⁵ Among current tobacco users, 36% got their tobacco products from shops which is in concurrence with a study done in Kerala by Muttappallymalil J et al in 2010.¹² This study showed that there was significant difference in the knowledge, attitudes and beliefs about tobacco use after an educational intervention and the findings are supported by other studies.^{11,13,14} Major source of anti-tobacco information was television similar to the study in rural Wardha¹⁵ and Bangalore.¹⁶ However, due to time constraint we were not able to assess retention of knowledge.

Conclusion:

The present study revealed that there was improvement in the knowledge about hazards of tobacco consumption among students after educational program. School settings can be an essential, effective and efficient place to address the health related issues for students and school based health behaviour monitoring and health education should be carried out at regular interval for reinforcement. Teachers should take initiatives to promote anti-tobacco messages as they are taken as role model by the students. Strict implementation of COTPA (Cigarettes and Other Tobacco Product Act) is the need of the hour to reduce tobacco related health hazards in future.

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