

Perception on Secondhand Smoking among Secondary School Students in Bangladesh

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Abstract

Background: Secondhand smoke is the smoke exhaled by the smoker and side stream smoke that means the smoke released from the burning end of a cigarette. Every year 40% of children are exposed to secondhand smoking and deaths occur due to secondhand smoke exposure worldwide.

Objective: The aim of the study to assess the perception on secondhand smoking among secondary school students.

Methods: A descriptive study design was conducted among 112 Secondary School Students at Mohammadpur Government High School. Data was collected by self-administered questionnaire. Descriptive statistics such as frequencies, percentages, mean, and standard deviation was used to describe the sample characteristics and Inferential Statistics such as T-test, chi-square test, ANOVA, correlation statistics was used to examine the relationship between socio demographic characteristics and perception on secondhand smoking.

Results: The mean age of the students was 14.98 years. Among the students perception on secondhand smoking was high level. Bivariate analysis showed that age, and read in class were significantly negatively correlated with the perception on secondhand smoking.

Conclusion: The findings of the study provide information that will help to reduce smoking or abstain from smoking rate among secondary school students. Further study on factors identifying smoking among Secondary School Students is needed in Bangladesh. Educational programs about secondhand smoking may increase awareness to avoidance of secondhand smoking as well as smoking cessation interventions for both adolescents and their parents.

Keywords: Perception; Secondhand Smoking; School Students

Background

Secondhand smoking is known as passive smoking or involuntary smoking, or environmental smoking which indicates to inhalation of unwanted smoke by non-smokers from a smoker's [1]. Secondhand smoke exposure is a major cause of health hazard which increase the prevalence of lung cancer, other smoking-related diseases and premature death who are non-smoker person [2,3]. There is no any risk-free level of secondhand smoking exposure which cause openly tobacco smoking. According to Department of Health and Human Services in US (2006), indoor space smoking need to restrict to protect health from the bad effects of secondhand smoking. Second-

hand smoking is dangerous than active smoking and it is very significant issue for human well-being which affect to human health, environment, and air [4].

Students tend to be more susceptible to secondhand smoking related harm because of secondhand smoking exposure in the environment [5]. A large number of adult people and children are affected by secondhand smoking from their own home or in other public place [6]. School children are exposed to Secondhand smoking through living with smoker indoor at homes, open public places as like where selling pan, tobacco and a ban on smoking, work places, public transport, in child care

centers, kindergartens or pre-schools, open boundary space of schools, in all areas of train stations, covered bus shelters, raised platform tram stops and all tram stop shelters [7]. Tobacco smoke release 4,000 chemicals, among them 250 chemicals are identified in secondhand smoke, and 50 of them chemicals are known carcinogens [8]. Smoking increased the risk of smoking-related disorders in adult population such as lung cancer, stroke, progression to tuberculosis disease, and an asthmatic condition [6]. On the other hand secondhand smoking is a major causes of heart disease, stroke, and lung cancer in non-smoking adults, affects fetal development, infant death syndrome, and childhood asthma various cancers and cerebrovascular diseases. It also induces acute respiratory infections, middle ear infections, with more severe asthma causes exposure for secondhand smoking in children's according to Department of Health and Human Services in US(2006) [4].

Secondhand smoking negatively affects mental health as well as physical health for adults [9]. Every year 40% of children are exposed to the harmful effects of secondhand smoke and 890,000 deaths occur due to secondhand smoking worldwide [5,10]. Intheworld Bangladesh is the most densely populated countries that over 22 million adults were smokers [11]. In Bangladesh overall tobacco consumption significantly high about 43.3% and exposure to secondhand smoke at work place 63% [12]. World Health Organization(2009) showed that approximately 44.0% of the total population of Bangladesh was exposed to primary sources of secondhand smoking at their home, public venues, in other places [6, 11].The prevalence of secondhand smoking of children is a potential public health problem worldwide. The prevalence of secondhand smoking among 40% children more than 18 years in 2011, in 2013 and 2017 identified it 39% for adults and 31.1% for 13 to 15 aged children, in 2017 reported that the secondhand smoking rate increased to 95% in the urban areas of Dhaka, in Bangladesh [13]. The secondhand smoking related deaths was rise from 5.4 million in 2005 to 6.4 million in 2015 and 8.3 million will be in 2030 with 80% deaths occurring in developing nations [14]. In Africa and Southeast Asia occur 165 000 deaths among 60% children including Pakistan and India were 69.1% and 29.9% respectively [15,5]. In the United Kingdom was 41%, Australia 43%, in the USA 12%-34%, and 33% in Canada, and whereas the highest prevalence of exposure to secondhand smoke was 89% in Turkish children [8]. In 2008–2013 the prevalence of passive smoking in children above 15 years in Indonesia was 80%, in Vietnam 75%, and in China 67% [16].

In Bangladesh, the research about perception on secondhand smoking among secondary school students is limited. The study about perception on secondhand smoking among students will developed the knowledge about health risk of the active smoking and secondhand smoking. This study will be contributed to greater understanding on secondhand smoking among student. The researcher wants to study about perception of secondhand smoking for identifying the most effective interventions to prevent and protect students from taking up the secondhand smoking. The research findings can be used for guiding targeted policy implications for tobacco control in Bangladesh. With regards to secondhand smoking that is influences a series of factors, the researcher may be developed educational programs for parents advised to stop smoking or abstain from smoking in the presence of their children. To implementation of educational programs on secondhand smoking may increase awareness to avoidance on secondhand smoking

as well as smoking cessation interventions for both adolescents and their parents.

Methods

Study Design: The cross-sectional study was undertaken at Mohammadpur Government High School.

Participants and Sampling:

A descriptive study design was used to assess the perception on secondhand smoking among secondary school students in Bangladesh. The approval was obtained from the Institutional Review Board (IRB) of NIANER and BSSMU and from Mohammadpur Government High School. The data were collected at in Mohammadpur Government High School in between July 2019 to June 2020. The convenience sampling method was used to recruit the school student. Potential participants were explained about details of the study and were informed that they had the right to withdraw from the study any time without any harm. Participants who decided to participate in the study were asked to sign the consent form. Total of 112 secondary school students were selected based on the following inclusion criteria; who are reading in class nine and class ten, students who meet the following inclusion criteria was included in the study, to willing or agree to participate in the study.

The questionnaire was used for this study consists of two parts; (1) Demographic Data Questionnaire consist of 10 items. Includes students information related to age, religion, what class do you read, educational level, father and mother level of education, living area monthly income family, type of family, smoking status, and family history of smoking and (2) Perception on Secondhand Smoking Related Questionnaire- consists of 17 statements about perception on Secondhand Smoking developed by expert's panel based on literature review. The index of content validity of the instrument was examined by a three expert's panel. Questionnaire consist of 17 items about perception on Secondhand smoking with 5-point Likert scale: 1= strongly disagree, 2= disagree, 3= undecided, 4= agree, 5 = strongly agree. The scores ranging from 17-85 with high score indicates good perception.

Results

Socio-Demographic Characteristics of Secondary School Students

The mean age of the students was 14.98 years old with SD of .930 which was ranged from 13-17 years. Among the students most of them (94.6%) were Muslim and only few were Hindu. Regarding read in clessmore than half (57.1%) of them were read in class nine while 42.9% were in class ten. More than half (54.5%) of the students fathers and nearly half (33.9%) of mothers educational level were high. Regarding living area, more than half (50.9%) students were lived in the slum area and nearly half 49.1% students were live in non-slum area. The students family income were average 42258.93/=taka. Among students only 11.6% were smoker and 88.4 were non-smoker. Most of them (85.7%) were lives in nuclear family. Incase of family smoke history less than half (37.5%) other family member and 30.4% father were smoker.

Perception on Secondhand Smoking among Secondary School Students

The mean score for overall students perception was $M=3.87$. $SD=.592$. The findings showed that 41.1% students given answer uncertain on perception and 16.1% were agreed about

Table 1: Distribution of Socio-Demographic Characteristics of Secondary School Students (N=112).

Variables	Categories	n	%	M (SD)
Age (Min- Max) (13-17 Years)				14.98 ±.930
Religion	Muslim	106	94.6	
	Hindu	6	5.4	
Class	Nine	64	57.1	
	Ten	48	42.9	
Fathers education	Primary	9	8	
	Secondary	19	17	
	Higher education	84	75	
Mothers education	Primary	10	8.9	
	Secondary	29	25.9	
	Higher education	73	65.2	
Living area	Slum	57	50.9	
	Non Slum	55	49.1	
Family income (Min-Max) (10000-100000) Taka				42258±18525.729
Family type	Nuclear	96	85.7	
	Extended	16	14.3	
Smoking status	Smoker	13	11.6	
	Non-smoker	99	88.4	
Family smoke history	father	34	30.4	
	other	42	37.5	
	nobody	36	32.1	

Table 2: Distribution of Perception on Secondhand Smoking among Secondary School Students (N= 112).

Variables	Strongly Disagree n (%)	Disagree n (%)	Uncertain n (%)	Agree n(%)	Strongly Agree n (%)	M±SD
1.Primary sources of secondhand smoking can start from home	18(16.1)	12(10.7)	46(41.1)	22(19.6)	14(12.5)	3.02±1.208
2.Passive smoking is danger as active smoking	03(2.7)	06(5.4)	08(7.1)	54(48.2)	41(36.6)	4.11±.943
3. Smoking could give harm effect even in healthy person.	03(2.7)	05(4.5)	08(7.1)	37(33.0)	59(52.7)	4.29±.972
4.Passive smoking does not increase risk of our behavioral problems*	05(4.50)	24(21.4)	23(20.5)	23(20.5)	37(33.0)	3.56±1.272
5.Passive smoker should not get adverse effect of smoking*	04(3.6)	09(8.0)	22(19.6)	30(26.80)	47(42.0)	3.96±1.126
6.Secondhand smoker may suffer will get many diseases like: pneumonia, heart attack, stroke, cancer etc.	09(8.0)	02(1.8)	12(10.7)	45(40.2)	44(39.3)	4.01±1.143
7. People will look down on one who smoke at public place	04(3.6)	10(8.9)	14(12.5)	51(45.5)	33(29.5)	3.88±1.046
8. The health education session about hazard of second hand smoking need to be held in school.	06(5.4)	03(2.7)	01(.9)	48(42.9)	54(48.2)	4.26±1.011
9. Prohibition of smoking in public places is good for both smokers and nonsmokers	12(10.7)	02(1.8)	06(5.4)	35(31.3)	57(50.9)	4.14±1.348
10. Prohibition of tobacco advertising reduce the number of active and passive smokers.	03(2.7)	09(8.0)	18(16.1)	39(34.8)	43(38.4)	3.98±1.057
11. Smoke from other people's cigarettes will shorten my life	04(3.6)	07(6.3)	10(8.9)	45(40.2)	46(41.1)	4.09±1.036
12. I tend to ask people to put their cigarettes out when they are talking to me	02(1.8)	10(8.9)	20(17.9)	48(42.9)	32(28.6)	3.82±1.100
13. Banning smoking in public places will protect the health of non-smokers.	04(3.6)	04(3.6)	03(2.7)	33(29.5)	68(60.7)	1.60±.972
14. In my opinion, if a person exposed to secondhand smoke more likely to get a respiratory tract infection than other	01(.9)	06(5.4)	18(16.1)	46(41.1)	41(36.6)	4.07±.908
15. Tobacco smoke in the environment may affect our health	01(.9)	02(1.8)	10(8.9)	29(25.9)	70(62.5)	4.47±.805
16. Passive smoking would be harmful our development	04(3.6)	05(4.5)	19(17.0)	38(33.9)	46(41.1)	4.04±1.04
17. Breathing tobacco smoke is a risk factor for our mortality	04(3.6)	02(1.8)	07(6.3)	20(17.9)	79(70.5)	4.50±.959
Total mean of perception about secondhand smoking						3.87±.592
*Reverse items						

primary sources of secondhand smoking can start from home. Nearly half (48.2% was agreed and 36.6% were strongly agreed) of students had positive perception to passive smoking is danger as active smoking, Smoking could give harmful effect even in healthy person was perceived by students 52.7% agree and 33.0% strongly agree about that. All most (40.2% agree & 39.3% strongly agree) of the students were positive perception about secondhand smoker may suffer will get many diseases like: pneumonia, heart attack, stroke, cancer etc.

Most (45.5%) were agree and 29.5% students were strongly agree about questionnaire of People will look down on one who smoke at public place. The health education session about hazard of secondhand smoking need to be held in school, nearly half 48.2% were strongly and 42.9% agree. All most (34.8% agree and 38.4%strongly agree) of were positive perception about Prohibition of tobacco advertising reduce the number of active and passive smokers. The result were find out that all most (agree 40.2% and strongly agree41.1%) were positive perception about Smoke from other people’s cigarettes will shorten my life. Most of them were (agree 42.9% and strongly agree 28.6%) I tend to ask people to put their cigarettes out when they are talking to me. All most (50.9% strongly agree & 31.3% agree) of the students were agreed about prohibition of smoking in public places is good for both smokers and nonsmokers. The most (60.7%) of the students were Strongly Agree to Banning smoking in public places will protect the health of non-smokers and only 3.6% students were strongly disagree. They were reported that (agree 41.1% and strongly agree36.6%) were positive perception a person exposed to secondhand smoke more likely to get a respiratory tract infection than other. Most (62.5%) of them were strongly disagree about Tobacco smoke in the environment may affect our health. Passive smoking would be harmful our development 41.1% were strongly agree and 33.9% were Agree. Most (70.5%) of them were Strongly Agree about Breathing tobacco smoke is a risk factor for our mortality.

Relationship between socio-demographic characteristics and perception on Secondhand Smoking

The study result showed that age had a significantly negative co-relation with perception on secondhand smoking of secondary school students. Also students who are reading in class nine had a significantly co-relation with negative perception of secondhand smoking (t=3.125, p=0.002) than class ten.

Discussion

Secondhand smoking contributes to significant health problems in children as well as students. The prevalence of secondhand smoking amongst students is a potential public health concern worldwide also in Bangladesh. The study sought to assess the perception on secondhand smoking among secondary school students in Bangladesh. One hundred and twelve secondary school students were participated in this study. The relevant findings of the study are discussed in detail.

The result of the current study is revealed that the mean age ranged from 13 to 17 years. A similar pattern of the studies in Saudi Arabia and Greece found that the related age group were 13 to 16 years and 12 to 18 years, respectively [17,18]. The current study find out most of them (85.7%) are live in nuclear family and only 14.3% were lives in extended family. Similar result was found in a study conducted by Sultana et al., (2016) [6], they found that most of the participants lives in nuclear

Table 3: Relationship between socio-demographic characteristics and perception on Secondhand Smoking among secondary school students (N=112).

Variables	M(SD)	t/ F/ r	(p)
Age		-0.288	0.002
Religion		-0.331	0.579
Islam	3.88±.598		
Hindu	3.66±.461		
Read in Class		3.125	0.002
Nine	3.96±.581		
Ten	3.759±.591		
Fathers education		0.618	0.605
Primary	3.83±.625		
Secondary	3.97±.275		
Higher education	3.85±.642		
Family income	(10000-100000) Taka	-0.05	0.603
Family type		0.875	-1.746
Nuclear	3.84±.6150		
Extended	4.06±.392		
Smoking status		0.222	0.727
Smoker	3.82±.623		
Nonsmoker	3.88±.591		
Family history		0.038	0.962
Father	3.81±.519		
Other	3.89±.497		
Nobody	3.90±.750		

family. Reason of the same result is same country perspective. Another study also found similar report. Majority of the participants (94.6%) were lived in nuclear family and 5.4% single parent family [19] in Malaysia.

The present study findings reported that among secondary school students 88.4% were non-smoker and only 11.6% were smoker. Consistent finding were seen in Malaysia, they reported that 85.1% participants were non-smoker and only 14.9% smoker [19]. In the present study found that smoking history of the family member is only 30.4% father and 37.5% other family members are smoker while 32.1% are nonsmoker. Inconsistent result was found in the study conducted by Jallow, Britton, Langley [15] in Gambia, they found that most of the family members were nonsmoker and only 11.6% father 2.6% mother, 6.9% brother/sister and 7% other family members were smoker. This result is due to cultural and geographical variation, and educational differences.

In the present study showed that there is a significantly negative co-relationship between age and perception on secondhand smoking among secondary school students. It means participants those who are younger have high perception of regarding secondhand smoking. A similar result was found in the study conducted by Al-Zalabani et al.[17]. In the present study secondhand smoking had a significantly negative co-relationship between read in class and perception of secondhand smoking among secondary school students. It means more than half of the secondary school students those who were reading in class nine higher perception of secondhand smoking than class ten in the study. Contradictory finding was seen in Saudi Arabia, who found no significant school-level difference among in intermediate schools and in secondary schools, study conducted by Al-Zalabani et al.[17].

The present study is found that the negative perception of the secondhand smoking which the age group a ranged from 13 to 17 years old who are read in class nine and ten in the secondary

school students. The secondhand smoking have need to growing up about secondhand smoking which is effect on healthy life. The knowledge of the secondhand smoking is help their own life and to take any initiative for reducing and cessation of smoking. However there are no significant relationship with fathers' and mothers' educational level, living area, family income, type of family, secondhand smoking status and family smoking status perception of secondhand smoking among secondary school students.

Conclusion

The results showed that perception of secondhand smoking was negative perception who are read in class nine and class ten. Based upon the findings of the present study, the students were need to increase perception about health effect of secondhand smoking which is dangerous as active smoking for the healthy life. The study provide information that will help to reduce smoking or abstain from smoking rate among students. Further study on factors identifying smoking among students is needed in Bangladesh. Educational programs about secondhand smoking may increase awareness to avoidance of secondhand smoking as well as smoking cessation interventions for both adolescents and their parents. It is recommended- to conduct educational program for secondary school students with health effect of secondhand smoking, to include in a textbook about morbidity and mortality rate on secondhand smoking as like health effect of smoking, to develop policy about restriction of smoking in open place and further study is needed in a large scale.

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