

# Making Home Smoke Free in a Bangladeshi Village through an Intervention at School

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## Abstract

### Key words:

Smoking, smoke free home.

**Background:** Objective of the study was to determine the outcome of school student led smoke free home program.

**Methods:** A study was conducted among the school student of Bangladesh, during the period of July to November 2010. Students were used as an agent to create an environment in the house discussing with their parents and other members of the family to reduce indoor smoking and as well as help smokers in quitting smoking.

**Result:** During the five months intervention indoor smoking prevalence reduced by 61.6% but smoking prevalence among fathers reduced only 3.2%.

**Conclusion:** This small intervention of short duration indicates that motivation through school student have a high potential of making home smoke-free.

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## Introduction:

The adverse effects of second-hand smoke (SHS) are both immediate and long-term and are felt by both children and adults.<sup>1</sup> Moreover, children exposed to SHS are more likely to become smokers themselves when they grow older compared to those unexposed.<sup>2</sup> Although children are exposed to SHS in other places, the primary source of SHS exposure is in their homes.<sup>3</sup>

Globally, about 40% of children younger than 14 years of age are exposed to SHS within their homes—these estimates are much higher for low-income countries in the South-East Asia, Western Pacific and Eastern Mediterranean regions.<sup>4</sup>

In Bangladesh, about 45% of adults (definition >15 years) and 42% of youths (aged 13–15) are exposed to SHS in public places, while 63% of adults and 35% of youths are exposed to SHS in the workplace.<sup>5,6</sup>

Concerns have also been raised about potentially high levels of SHS exposure among children at household level; however, data are limited. Bangladesh is a signatory to the WHO Framework

Convention on Tobacco Control (FCTC), which calls for measures to protect people from SHS.<sup>7</sup> The home is the primary source of exposure to second hand smoking (SHS) for children and women and a major source of SHS exposure for non-smoking adults. Smoking at home is widely known in Bangladesh but accurate data are not available. Intervention at household levels is cumbersome and it requires more resources compared to institutional intervention. School are good place to intervene and transmit the messages to home. Child to parent communications has been tested with success for improving other health related behaviours. The aim of the study was to examine whether indoor smoking at home can be reduced using an intervention in a school located in the same village.

## Methods:

This study was conducted in Ekhlaspur (a rural village) of Chandpur district of Bangladesh, about 60 km southeast of Dhaka city during the period of July 2010 to November 2010. It is an agricultural area and people endure hard physical work mostly

as farmer and eat rice and vegetables almost three times a day. In this area females usually do not smoke but chew tobacco leaf with betel quid.<sup>8</sup> Students of Ekhlashpur High School from grades VI to grad X were included in the study. The number of adult population (20 years and older) of the village Ekhlaspur was 2730 including both sexes (males: 1460, female: 1270).

There were total 576 students (boys and girls) in the school. Four hundred and sixty six students who were present on the day of survey were included in the study. We randomly selected 324 (177 girls and 147 boys) students for our study. Consent was obtained from the student. Then class teachers explained the purpose of the study to the students and requested them to participate in the study. A baseline survey was done initially to see the prevalence of indoor smoking. After five month of initial survey another follow-up survey was done on the same group of student to determine the status of smoking free home. During this period there were monthly awareness meetings and counselling program to raise awareness about the SHS and to impart knowledge about the harmful effect of SHS among the students. They were used as an agent to create an environment in the house discussing with their parents and other members of the family to reduce indoor smoking and as well as help smokers in quitting smoking. During discussion and counselling flip chart, leaflets, posters and brochures were used. In both the surveys same questionnaire was used for data collection.

### Result:

The mean age of the students was 13.0 ( $\pm 1.7$ ) years. Distribution of students according to grades are 44 in grade six, 87 in grade seven, 73 in grade eight, 58 in grade nine and 62 in grade ten. The mean age of fathers was 41.8 ( $\pm 5.2$ ) years and mean education level was 6.2 ( $\pm 3.9$ ) grade. Details father's smoking behaviours before and after intervention is shown in Table I. In the base line survey we found 50.3% fathers were smokers and among them 25.9% smoked inside the house. After intervention through children father's smoking rate reduced to 48.8% and indoor smoking rate reduced to 9.9%. During the five months intervention indoor smoking prevalence reduced 61.8% but smoking prevalence reduced only 3%.

**Table-I**  
*Father's smoking behaviour before and after intervention.*

Subject		Before intervention % (95% CI)	After intervention % (95% CI)
Both	Father smoker	50.3 (45 - 56)	48.8 (43 - 54)
	Father smoke at home	25.9 (22-32)	9.9 (7- 13)
Boys	Father smoker	48.2 (40 - 57)	47.5 (39 -56)
	Father smoke at home	30.5 (23 - 38)	10.6 (5 -16)
Girls	Father smoker	51.0 (45- 59)	48.6 (41-56)
	Father smoke at home	24.0 (18 - 30)	9.3 (5 - 14)

### Discussion:

We observed in our study prevalence of smoking among men is 48.7% but in the Ekhlaspur village we have done another survey after one year (2011) and found smoking prevalence among men 36.2%. There is limited evidence available in the developing countries on the exposure to SHS particularly among children, except for Global Youth Tobacco Survey (GYTS) data.<sup>9</sup> GYTS reported that expose rate to SHS in Bangladesh 34.7%, India 48.2%, Indonesia 66.8%, and China 56.1% children aged 13-15 years. But the children younger than 13 years are more prevalent (67%) in Bangladesh.

The epidemic of smoking in home is increasing in many countries like Bangladesh. Controlling the epidemic of smoking in home is an important part of any comprehensive tobacco control strategy. The home is the primary source of exposure to SHS for children and women and a major source of SHS exposure for non-smoking adults. Because children and women spend so much time in the home, it remains the primary setting where they are exposed to SHS. Adults also spend much of their time in the home, and the home is a major source of exposure for non-smoking adults. In our study we observed a significant reduction of indoor smoking rate and also a minimal quit rate. This result we achieved in a community through a short term intervention program on school children in their school. We showed an adaptable smoke free homes intervention through school children and

we think it is feasible and appropriate for use in a low cost rural setting.

Complete elimination of smoking at home is one of the important contributors to 100% smoke free environment to protect children and women. This small intervention of short duration indicates that schools have a high potential of making home smoke-free.

Its cost-effectiveness and long-term sustainability needs to be ascertained.

### Limitations of this study

- Duration of study is very short.
- The study did not attempt to establish the association of exposure to SHS with any existing health conditions among children.

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### Conflict of Interest - None.

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