

RESEARCH COMMUNICATION

Global School Personnel Survey Among 5200 School Personnel in India: Comparison of the Results for the Years 2009 and 2006

V Gajalakshmi^{1,2*}, CV Kanimozhi¹, DN Sinha³, K Rahman³, CW Warren⁴, S Asma⁴

Abstract

Background: The results of the Global School Personnel Survey (GSPS) conducted in India in 2009 are compared with 2006 GSPS to assess any change in 2009 on tobacco use and knowledge and attitudes to tobacco use, training and availability of tobacco control teaching material in schools and the existence of school tobacco control policies. **Methods:** GSPS is a cross sectional survey conducted twice (2006 and 2009) in entire India. A total of 180 schools were surveyed each time. **Results:** Of the participating school personnel, 2660 in 2006 and 2575 in 2009, about 95% were teachers and the balance administrators. In 2009, compared to 2006 the prevalence of current smoking of cigarettes (19.6% in 2006 and 10.3% in 2009) and bidis (21.5% in 2006 and 13.9% in 2009) was found to be significantly lower; the percentage of teachers receiving training on preventing youth tobacco use has significantly reduced (16.7% in 2006 and 10.1% in 2009); access of teachers to educational materials on tobacco use and how to prevent its use among youth had not increased (34.6% in 2006 and 37.8% in 2009); there was no change in policy prohibiting tobacco use among students and school personnel; however, ever use of any tobacco on school premises was significantly lower (15.6% in 2006 and 9.6% in 2009). **Conclusions:** The prevalence of current smoking (cigarettes/bidis) among school personnel and use of any tobacco on school premises were significantly decreased in 2009 as compared to 2006. Necessary action should be planned to increase the number of teachers trained and the availability of teaching materials on preventing youth tobacco use in order to have effective prevention of tobacco use among students.

Keywords: India - tobacco - teachers - school - bidi - cigarette - smokeless - prevalence

Asian Pacific J Cancer Prev, 13, 539-543

Introduction

Tobacco is the single largest cause of premature death in the world. In the 20th century, tobacco caused an estimated 100 million deaths. The prevalence of current tobacco use is an important predictor of future burden of tobacco related diseases. In 2005 current tobacco smoking prevalence amounted to 26% of all adult population, 42.4% of men and 9.6% of women, aged 15 years or older (WHO 2009). Globally 10.5% of boys and 6.7% of girls at ages 13-15 years are current cigarette smokers (Warren et al., 2006). With unchanged current tobacco smoking patterns, the number of deaths caused by tobacco use is projected to increase to 10 million per year, i.e. 100 million per decade, by around the year 2030 (Peto, Lopez, Boreham, Thun and Heath 1994; Peto and Lopez 2002; IARC 2007) with shift of burden of tobacco deaths from developed to developing countries. Half (i.e., one in two) of those who continue the habit of tobacco smoking, whether in developed or developing countries, will be killed by tobacco (IARC 2007; Gajalakshmi et al., 2003).

Initiation of tobacco use habit often begins in the

adolescent years when school teachers and administrators represent an influential group for tobacco control among students and their opportunity to interact with students everyday helps to strengthen the student's awareness about the dangers of tobacco consumption. Knowledge and attitudes to tobacco use among school personnel and parents and, use of tobacco in the school environment play a major role in influencing tobacco use among adolescents. In order to develop effective interventions to stop initiation and reduce prevalence of tobacco habit among school children, it is essential to have information on the extent of tobacco use among school personnel, their attitudes towards tobacco control, and the existence of tobacco control policies in schools.

The objectives of Global School Personnel Survey (GSPS) are: (1) obtain baseline information on tobacco use of school personnel; (2) evaluate the existence, implementation, and enforcement of tobacco control policies in schools; (3) understand the knowledge and attitudes of school personnel towards tobacco control policies; and (4) assess training and availability of tobacco control teaching material for implementing tobacco

¹Epidemiological Research Center, ²IRH Institute for Research on Population Health, Chennai, Tamil Nadu, India, ³Tobacco Free Initiative, World Health Organization, Regional Office for South-East Asia, New Delhi, ⁴Office on Smoking and Health, Centers for Disease Control and Prevention, Atlanta, GA, USA *For correspondence: gajaerc@gmail.com

prevention and control interventions. The results of GSPS conducted in India in the year 2009 are compared with the results of the GSPS conducted in the year 2006 and the prevalence of tobacco use and other factors collected in the survey are presented in this report.

Materials and Methods

Coverage

The GSPS is a cross sectional survey that produces a representative sample of school personnel drawn from both public and private schools with Grades 8-10. It has been conducted in all 6 administrative regions in India twice, in the first half of 2006 and from May to July 2009. The methodology used is the same in both the surveys (2006 and 2009). The six administrative regions in India are: (1) the Northern region consists of Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttaranchal and Uttar Pradesh; (2) the Central region comprising of Chhattisgarh and Madhya Pradesh; (3) the Eastern region consisting of Bihar, Jharkhand, Orissa and West Bengal; (4) the North East region consisting of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura; (5) the Western region consisting of Goa, Gujarat and Maharashtra; and (6) the Southern region comprising Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. For administrative reasons Uttaranchal and Uttar Pradesh were moved from North to Central region in the 2009 survey. All six regional GSPS data have been combined to get national estimates.

Within each administrative region, schools were selected with probability proportional to school enrollment size in Grades 8-10 that corresponds to student's age of 13-15 years. Thirty schools were selected in each region with a total of 180 schools for each survey in India. The schools surveyed in 2009 were different from 2006 and there was no overlap of schools. All personnel (teachers and administrators) working in the selected schools are eligible to participate in GSPS. School and school personnel participation in the survey is voluntary.

Data Collection

The Research Coordinator was responsible for the overall management of the project and for the development of the final questionnaire. The survey used self administered questionnaire which was translated from English to various regional languages (Hindi, Oriya, Bangla, Marathi, Gujarathi, Assamese, Tamil, Telugu, Malayalam and Kannadam) and back translated into English to check for accuracy. The questionnaires had been pre-tested in the respective regions, to test for the accuracy of translation and understanding of the questions, before they were administered in the schools. The questionnaire contained multiple-choice questions with eight responses for each question. There are no open ended questions, no skip pattern and no multiple response questions. School personnel recorded their responses directly on a sheet with black lead pencil which could subsequently be optically read by machine. Name of the schools or personnel were not collected.

Training was given to all the Survey Administrators in each region for 2 days to ensure that they would follow the same survey procedures in the assigned schools. The Survey Administrators were responsible for the delivery of questionnaires to all school personnel, attended the school on the day of survey, and the security of the answer sheets.

Statistical Analysis

The data were weighed to adjust the sample selection and non-response of schools. The computer program SUDAAN (Shah, Barnwell and Bieler 1997) was used to compute weighted prevalence estimates and their standard errors that were used to calculate the 95% Confidence Intervals (CI). The differences in the estimates are considered statistically significant if the t-test p value was < 0.05.

Results

In the 2006 survey, 2660 school personnel participated; of this 71% were men. The majority of school personnel (94.3%) were teachers and there were only 140 administrators. The school response rate was 100% and school personnel response rate was 80.6%. In the 2009 survey, a total of 2575 teachers and administrators (school personnel) completed the questionnaire; of this 55% were men. As in 2006 survey the majority of school personnel (95%) were teachers and there were only 112 administrators. The school response rate was 97.8% and school personnel response rate was 84.3%. The main reason for non-response of the school personnel was absence from school on the day of the survey.

The results related to the prevalence of current smoking and smokeless tobacco, school policies prohibiting the use of tobacco, tobacco related curriculum and attitudes toward tobacco control are given in Table 1.

Tobacco use prevalence among school personnel

The prevalences of current cigarette smokers and current bidi smokers in 2009 are 10.3% and 13.9%, respectively, and significantly lower than in 2006; the corresponding percentages in 2006 were 19.6 and 21.5. Current users of smokeless tobacco products is also lower in 2009 (13.9%) compared to 2006 (17.2%) and this change is not statistically significant. It should be noted that the prevalence of smoking and smokeless tobacco use do not add up to prevalence of tobacco use because tobacco is used in more than one form by many tobacco users.

School policies prohibiting use of tobacco

Nearly 67% of schools in 2006 had a policy prohibiting tobacco use among students and this percentage has not significantly changed in 2009; However the percentage of schools with policy that prohibits tobacco use among school personnel has significantly increased from 57 in 2006 to 65 in 2009. The percentage of school personnel ever used any form of tobacco on school property/premises during the year prior to the survey was 9.6% in 2009 and this is found to be significantly lower than that noted in 2006 (15.6%).

Table 1. Prevalence of Tobacco Use Among School Personnel and Factors Influencing Tobacco Use in India: Global School Personnel Survey in 2006 and 2009

	2006 % (95% CI)	2009 % (95% CI)
Prevalence of tobacco		
Current tobacco users (smoking and/or smokeless)	28.1 (26.2 - 30.2)	23.4 (19.9 - 27.4)
Ever smoked cigarettes	25.8 (23.3 - 28.5)	15.4 (12.9 - 18.2)
Current cigarette smokers	19.6 (17.5 - 21.8)	10.3 (8.3 - 12.6)
Current bidi smokers.	21.5 (19.7-23.5)	13.9 (11.7-16.3)
Current users of smokeless tobacco	17.2 (15.3-19.2)	13.3 (10.8-16.4)
School Policies Prohibiting Tobacco Use		
Reported that their schools have a policy that prohibits tobacco use among students	66.9 (62.9 - 70.7)	68.7 (64.2 - 72.9)
Reported that their schools have a policy that prohibits tobacco use among school personnel	57.1 (52.9 - 61.2)	65.2 (60.6 - 69.5)
Reported ever used any form of tobacco on school property/ premises during the past year	15.6 (13.6 - 17.9)	9.6 (8.0 - 11.4)
Access to Teaching Materials and Training		
Schools which include tobacco use prevention in school curriculum	42.0 (38.1 - 46.0)	44.4 (40.3 - 48.5)
Teachers who had access to teaching and learning materials about tobacco use and how to prevent its use by youth	34.6 (30.7 - 38.8)	37.8 (32.2 - 43.8)
Teachers who ever received training to prevent youth tobacco use	16.7 (14.6 - 18.9)	10.1(7.4 - 13.6)
Reporting their school has non-classroom programs or activities (such as an assembly) that are used to teach tobacco use prevention to students	36.3 (32.6 - 40.3)	50.1 (45.2 - 55.1)
Attitudes		
Agree schools should have a policy or rule specifically prohibiting tobacco use among students	95.0 (93.4 - 96.2)	94.7 (93.4 - 95.7)
Agree schools should have a policy specifically prohibiting tobacco use among school personnel	95.2 (93.7 - 96.4)	91.0 (88.6 - 92.9)
Think teachers needs specific training to help students avoid tobacco use	88.5 (85.4 - 91.1)	87.6 (85.4 - 89.5)
Think teacher tobacco use influences youth tobacco use	84.3(80.8 - 87.3)	86.6 (82.8 - 89.7)
Think smoke from others is harmful to them	95.4 (93.7 - 96.6)	94.4 (92.6 - 95.8)
Think the price of tobacco products should be increased	83.9 (81.6 - 86.0)	82.2 (79.9 - 84.2)
Think the tobacco industry deliberately encourages youth to use tobacco	80.5 (78.2 - 82.6)	75.0 (71.1 - 78.6)

Tobacco related curriculum

Four in ten schools include tobacco use prevention in school curriculum in 2006 and this has not changed over the years. About 35% (one-third) of the teachers in 2006 had an access to teaching materials on tobacco

use and how to prevent its use among youth and, this percentage has not significantly increased in 2009 (38%). Compared to 2006, significantly lower percentage of teachers (16.7% in 2006 and 10.1% in 2009) received training on preventing youth tobacco use and significantly higher number of schools (36.3% in 2006 and 50.1% in 2009) uses non-classroom programs to teach tobacco use prevention to students in 2009.

Attitudes toward tobacco control

About 95% of school personnel, in the 2006 survey, agree schools should have a policy or rule specifically prohibiting tobacco use among both students and school personnel; however in the 2009 survey, the percentage of school personnel agree schools should have a above mentioned policy has not changed for students but has significantly decreased for school personnel. About nine in ten teachers, both in the 2006 and in the 2009 survey, agree that they should receive specific training to help students avoid tobacco use. The percentage of school personnel who think teacher's tobacco use influences youth tobacco use has non-significantly increased from 84 in 2006 to 87 in 2009. In both the 2006 and 2009 survey the majority, about 95%, of school personnel think smoke from others is harmful to them and about 8 in 10 school personnel think the price of tobacco products should be increased. In 2006, about 80% of school personnel think that the tobacco industry deliberately encourages youth to use tobacco and this percentage has come down to 75 in 2009.

Discussion

The use of tobacco kills millions of people. Hence preventing and quitting the use of tobacco in various forms are necessary to achieve a smoke-free society. The prevalence of smoking (cigarettes and/or bidis) in the general population among those aged 30-69 yrs is 37% in men and 5% in women in India (Jha et al., 2008; Gajalakshmi et al., 2007) and these prevalences are higher in the general population than that seen among school personnel in India. The data collected by the GSPS in 2006 and in 2009 have shown that among school personnel the prevalence of current smoking of cigarettes and bidis are lower in 2009 compared to 2006 and this change in the prevalence may be attributed to the tobacco control programmes initiated by the Govt. of India in 2007-08. One of the activities of this program is to increase the awareness in schools about the ill-effects of tobacco use. At present 21 states and 42 districts are covered in this program. Other ongoing interventions are district tobacco control programme supported by the Govt. of India and smoke free city interventions supported by the Bloomberg philanthropies. Tobacco use starts in the adolescent years, when school personnel act as important role models for students. The survey shows 84-87% of the school personnel who participated in the survey think that the teacher's tobacco use influences youth tobacco use. So tobacco control activities should focus to reduce the prevalence of not only smoking tobacco (cigarette/bidi) but also of smokeless tobacco products among school

personnel which will eventually help to decrease smoking and smokeless tobacco use among students.

Survey shows about 70% of schools have a policy prohibiting tobacco use among students. This percentage should be increased to 100 by motivating the school authorities. Compared to the 2006 survey, use of any tobacco on school premises has significantly decreased in 2009. This may be attributed to the "cigarettes and other tobacco products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution [COTPA] act, 2003" (COTPA 2003) and "Tobacco Free Schools Policy" program in India. The Government of India passed a national tobacco control legislation "The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003" (COTPA 2003) that was enforced from May 2004. It bans smoking in all public places including health care facilities and educational facilities and, it was further strengthened in Oct 2008. This COTPA 2003 also has a provision for ban on tobacco sale to persons under the age of 18 years and within 100 yards of all educational institutions. In 2009 Govt. of India has initiated implementation of the "Tobacco Free Schools Policy" program in schools and this program is gradually being adopted in schools in many states. Measures should be taken to implement this policy in all schools effectively to help reduce the exposure to tobacco and second hand smoke in school environment.

Among school personnel, support for tobacco-free policies is high. Majority of teachers think that they need specific training to help students avoid tobacco use. Less than 20% of the teachers received training to prevent youth tobacco use and about 40% of the teachers have an access to appropriate educational materials about tobacco use and how to prevent its use among youth. Teachers' ability to convey effective anti-tobacco information to students can be diminished if they have not received training to provide tobacco-related information to students or do not have an access to adequate teaching materials to support anti-tobacco curricula. Teacher's access to teaching and learning material about tobacco use and receiving training to help students avoid tobacco use are an important element of an effective curriculum to prevent and reduce tobacco use among students. The percentage of teachers who received training on preventing youth tobacco use should be increased; the teaching material on preventing tobacco use should be available to all teachers and the facilities to teach prevention programs to students should be improved in schools in order to have effective prevention of tobacco use among students. The school authorities should be motivated to implement "Tobacco Free Schools Policy" program in their schools to reduce tobacco use among students and school personnel. In addition to this, arranging guest lectures by school authorities on "Ill effects of Tobacco" by medical doctors would help both students and school personnel to avoid tobacco use. The information provided by these school surveys would help to plan, implement, and revise programmes to improve tobacco control information dissemination to students, to reduce tobacco use among school personnel and students

and, to provide school personnel with the resources to help the students to avoid tobacco use.

Regarding the questions of 'What this paper adds' and 'What is already known on this subject?', no study had been done for entire India prior to 2006 to estimate the prevalence of tobacco use among school personnel or to assess training and availability of tobacco control educational material to teachers and their knowledge and attitudes towards tobacco.

The Global School Personnel Survey (GPS) is a cross sectional survey that has been conducted across India in 2006 and in 2009. These surveys show that the prevalence of current smoking of cigarettes and bidis among school personnel and use of any tobacco on school premises are significantly lower in 2009 compared to 2006. However, the use of smokeless tobacco is non-significantly lower among school personnel in 2009 compared to 2006. Less than 20% of the teachers received training to prevent youth tobacco use and about 40% of the teachers have access to appropriate educational materials about tobacco use and how to prevent its use among youth. All teachers should have access to the teaching material on preventing tobacco use and undergo training on preventing youth tobacco use in order to have effective prevention of tobacco use among students. Tobacco control activities should focus not only on smoking tobacco but also on the use of smokeless tobacco. The GPS data would help to develop effective interventions to stop initiation and reduce prevalence of tobacco use among school personnel and students.

Acknowledgements

This study was funded by the Tobacco Free Initiative, World Health Organization, SEARO, New Delhi and technical assistance was provided by the Office on Smoking and Health, Centers for Disease Control and Prevention, Atlanta, USA. We wish to thank Directors of schools in India and Headmasters and Headmistresses of the selected schools in the survey for giving permission to do this survey and school personnel for their cooperation. VG organized and co-ordinated the survey conducted in 2009 and wrote the initial draft. CVK and DNS contributed to the writing. KR, CWW and SA involved in developing the survey methodology and giving technical assistance. All authors read and approved the final manuscript.

References

- COTPA 2003. The cigarettes and other tobacco products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) act, 2003 and related rules & regulations – no. 34 of 2003. Ministry of Health and Family Welfare (MOHFW), Government of India, New Delhi 2003. http://www.whoindia.org/LinkFiles/Tobacco_Free_Initiative_Compilation_of_tobacco_control_laws_rules_notifications.pdf accessed on 9 April 2012).
- Gajalakshmi V Peto R, Kanaka S, Jha P (2003) Smoking and mortality from tuberculosis and other diseases in India: retrospective study of 43 000 adult male deaths and 35 000 controls. *Lancet*, **362**, 507-15.

- Gajalakshmi V, Peto R, Kanimozhi CV, Whitlock G, Veeramani D (2007) Cohort Profile: the Chennai prospective study of mortality among 500,000 adults in Tamil Nadu, South India. *Int J Epidemiol*, **36**, 1190-5
- IARC (2007). The hazards of smoking and the benefits of stopping. In: Dresler C, Leon M. IARC handbooks of cancer prevention. Tobacco control. Reversal of risk after quitting smoking. Lyon, France: *International Agency for Research on Cancer*, **11**, 15-27.
- Jha P, Jacob B, Gajalakshmi V et al (2008) A nationally representative case-control study of smoking and death in India. *N Engl J Med*, **358**, 1137-47.
- Peto R, Lopez AD, Boreham J, Thun M, Heath Jr C.(1994) Mortality from Smoking in Developed Countries 1950-2000: Indirect estimates from National Vital Statistics. Oxford, Oxford University Press.
- Peto R, Lopez AD (2002) Future worldwide health effects of current smoking patterns. In: Koop CE, Pearson C, Schwarz MR eds. New York, Jossey-Bass, 154-161.
- Shah BV, Barnwell BG, Bieler GS (1997). SUDAAN: software for the statistical analysis of correlated data: user's manual. Release 7.5. Research Triangle Park, North Carolina: Research Triangle Institute, .
- Warren CW, Jones NR, Eriksen MP, Asma S (2006) Global Tobacco Surveillance System (GTSS) Collaborative group. Patterns of global tobacco use in young people and implications for future chronic disease burden in adults. *Lancet*, **367**, 749-53.
- WHO (2009). World Health Statistics.