

**NCD RISK FACTOR SURVEILLANCE AMONG SCHOOL CHILDREN IN
SELECTED STATES OF INDIA – PHASE-1**
(In collaboration with WHO and DGHS)

Investigating Team

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This study has been completed and report submitted to DGHS and WHO

Executive Summary

Strategies for prevention of Non-communicable Diseases (NCDs) include reduction in exposure to risk factors like tobacco and alcohol consumption, promoting healthy diet and physical activity. Health promotion and prevention should begin early in life. Educating school children on healthy practices can minimize risk of NCDs in adult life.

Risk Factor Surveillance is an important tool to identify prevalence of potential risk factors and use in drawing strategies to prevent and control NCDs. WHO has recommended NCD Risk factor Surveillance in adults (age 15-64 years) and designed a methodology and tools to undertake it. Under Integrated Disease Surveillance project (IDSP), this surveillance was undertaken in 2007 in seven states of the country. The present study was undertaken as a pilot in school children studying in 8th, 9th and 10th standard (age ranging from 12 to 16 years) in selected districts of the country with following objectives:

- To assess the prevalence of key NCD risk factors among school children.
- To assess the knowledge, perception and practices about the healthy life style.

The study would help in developing appropriate school based intervention for health promotion focusing on healthy life he style.

Surveillance Design

The study was undertaken in five districts of Nainital (Uttarakhand), Wardha (Maharashtra), Thrissur (Kerala), Ratlam (MP) and Nellore (Andhra Pradesh) between July and December 2011. Keeping in view the anticipated prevalence of 5 percent (based on CBSE-School survey, 2007; prevalence of tobacco use 5%), a confidence interval of 90 percent, relative precision of 15 percent, with a design effect of 2 and the non-response rate of 10 percent a total sample size of 1000 children per district was calculated. In each district, 6 schools (4 rural, 2 urban; 5 Government, 1 Private) were covered. Data were collected in the standardized tool adopted from WHO tool for

adult RF surveillance.

Observations

A total of 4339 students were covered during the study. 86.1% of students were in 13 to 15 year age group. 2587 boys (59.6%) and 1752 girls (40.4%) were covered in the study. The students were asked a few questions which reflect their general hygiene and healthy practices. One in five students did not clean or brush their teeth 5% students never or rarely washed hands before taking meals and nearly 8% did not wash hands with soap after using toilet.

Diet: One in five (22%) students did not at all consume fruits and a few (3.2%) did not even consume vegetables during the last 30 days. On the other hand nearly two out of five students (42%) usually consumed such drinks. Fast foods such as Samosas, patties, burgers, noodles, tikkis, or ice creams were consumed by nearly two-third of students. This situation exists inspite of the fact that majority (68.2%) of the students were taught about benefits of healthy eating practices.

Physical Activity: There is general perception that students are not physically active during their adolescent life. It was observed that two out of five (39.3%) students had at least 60 minutes of physical activity on each of the 7 days. On the other hand nearly 14% of students did not have any physical activity. It has been generally believed that physical education and activity classes are on the wane in many schools due to competing subjects like computer education that have been recently introduced. 28% of the students responded that they did not go at all in physical education classes while another 30% attended only once a week. Outside the school hours, students should be playing sports and do physical exercises to keep physically fit and control weight. One out of three students did not do any exercises and another one in four did it only once a week. Only one in nine students (11%) did exercises every day of the week. On the other hand, when asked about time spent on idle activities like watching television, playing on computer or other sitting activities, nearly 45% spent 1-2 hours and additional 23% spent 3 to 8 hours a day on non-physical activities. Nearly 3/4th of students either walked or used bicycle while commuting from home to school and back which is quite a physical exercise. .

Tobacco & Alcohol: Of all risk factors of NCDs, tobacco is perhaps the most important factor. The seeds of habit of tobacco consumption, both in smoking and non-smoking forms are sown in adolescent age. It was noticed that 8.5% of students did report having smoked. Prevalence of smoking was higher in boys (12.6%) as compared to girls (2.5%). 18.5% of the students reported exposure to second-hand smoking on all seven days of the week. Smoking by father or male guardian was reported by nearly one-fourth of the students (26.2%). Majority (78.5%) of students were definite about its

harms of smoking. 3 out of 4 students (74.8%) could indicate that cancer can be caused by smoking, but only one in nine students (11.1%) knew that smoking could cause heart disease. There was definitely gap in their knowledge about diseases caused by smoking.

There is evidence that smoke-less tobacco consumption is on the rise in India as revealed in GATS-2010. It was observed that nearly 8.7% students had already consumed tobacco in chewing form at such a young age. Nearly 1% of children chewed tobacco regularly on all 30 days during the preceding month. Tobacco chewing is more prevalent in boys (12%) as compared to girls (3.4%). In 21% instances, father or male guardian of the students were chewing tobacco. Majority (78.6%) of students mentioned that chewing tobacco can lead to cancer. However, very few students attributed tobacco as causative factor of other NCDs.

It was observed that 7.9% of students had experienced alcohol intake and most of them had the first drink in own or other person's home. In nearly 30% instances, father or male guardian of the students consumed alcohol and that gave opportunity to students to consume alcohol at home.

Alcohol consumption is more prevalent in boys (9.6%) as compared to girls (5%). Knowledge about diseases that can be caused by alcohol was low. Students' positive responses were Liver diseases (31.4%), Cancer (24.4%), Heart diseases (11.9%), and High Blood Pressure (5%). Majority (61.5%) students mentioned that they were taught about the dangers of alcohol use

Family history of NCDs is a risk factor for the next generation also. Positive family history was mentioned for Hypertension (23%), Diabetes (13%), Heart Disease (11%) and Chronic Respiratory Disease (13%). Students from Wardha and Thrissur had family history of hypertension in more than 20% instances. Family History of Diabetes was highest in Nellore (21.2%) followed by Thrissur (17.5%). Thrissur had the highest rate of Heart Diseases (19%).

Obesity: An important risk factor for NCDs is obesity. It was observed that 1.4% of boys and 2.4% of girls had BMI of 25 or more and were categorized as overweight or obese. Out of 40 overweight /obese girls, 32 were from Thrissur (17) and Nellore (15). There was not much variation in mean BMI amongst boys as well as girls across states.

Blood Pressure: Blood pressure was measured in 3 districts namely Wardha, Nainital and Thrissur. It was observed that 32 out of 1359 (2.4%) of boys and 22 out of 1102 (2%) girls had systolic blood pressure above 130 mm at the time of examination. 15 boys (1.1%) and 17 girls (1.5%) had diastolic blood pressure above 90 mm.

Blood Sugar: Glucometers were used to measure Random Blood Sugar (RBS) of students. It was observed that nearly 10% boys and 13% girls had random blood sugar level higher than 125 mg/dl and 4% boys and 52% girls had RBS level of 140 or higher indicating potential risk of diabetes.

Conclusion & Recommendations

Seeds of NCDs are sown in childhood and early adolescent span of life. Effective preventive measures should focus on imparting knowledge and developing health attitude and practices in schools. Training of teachers in healthy life styles would be an important activity to promote healthy practices in students. School health services should include NCD risk factor surveillance during annual health check-up. Students with high risk profile should be closely monitored and provided specific advice. Parental habits on tobacco and alcohol use may promote such habits in the youth. A family based approach would be critical to prevent such unhealthy practices. Policy and its implementation on restricting availability of tobacco and unhealthy diets in and around schools will be an important step to prevent incidence of NCDs. Parents should also be educated about harms of unhealthy diet rich in salt, sugar and trans- fats. Physical education and sports should be restored in school curriculum.

Periodic NCD Risk factor Surveillance for Adults (15-64 years) should be complimented with Risk factor Surveillance in schools to gather evidence of current status of risk factors in younger population but also assess effectiveness of preventive intervention.

