MYTRI: India's first successful school based tobacco use prevention model

MYTRI – Mobilizing Youth for Tobacco Related Initiatives in India – is a successful school based tobacco use prevention programme. It involved over 14,000 students in 32 schools - both government and private- in two major cities in India – Delhi and Chennai. The project was conducted in collaboration between HRIDAY, an NGO working in tobacco control in India and University of Texas, USA during the years 2004 – 06. The project was funded by the Fogarty International Center, at the National Institutes of Health, in the USA.

The study commenced with a baseline survey on students' knowledge, beliefs and practices related to current and future tobacco use. The impact of MYTRI was assessed through an intermediate and endline survey conducted after each year of intervention. Data were collected for prevalence, psycho-social determinants of tobacco use and associations with tobacco advertising. There were significant reductions in tobacco use in the intervention group over the two years of the intervention.

The intervention programme, extending over two years, covered students in grade 6th to 10th. The students – both girls and boys – were between 10 to 16 years of age. The intervention endeavoured to build awareness and advocacy in the field of tobacco control in order to change behaviour. The various components are novel to India and included training teachers to facilitate innovative classroom activities; training students to be peer leaders; and employing creative components like debates, street plays, model making, fun learning games, parent postcards and school posters. These components were designed to educate students and parents about the harmful effects of tobacco use and reinforce that tobacco use is not acceptable among young people.

FINDINGS

Prevalence of tobacco use (2004)

- 14.7% students had ever used tobacco in any form.
- 4.6% were currently using tobacco in any form.
    - 3% chewed tobacco
    - 1.4% smoked cigarettes
    - 1.6% smoked bidis (hand rolled cigarettes)
- *Grade level:* Sixth graders (ever users: 24.8%) were two to four times more likely to use tobacco than eighth graders (ever users: 9.3%) during 2004.
    - Prevalence of ever use of tobacco continued to be higher in students who were in grade 6 at baseline, in comparison to students in grade 8, even as both these groups progressed to the next grades (during the 2 years of the MYTRI study)
- *School type:* Government school or low Socio Economic Status (SES) students (current users: 5.7%) tended to use more tobacco than private or high SES students (current users: 3.7%).
- *Gender:* Boys (current users: 6.5%) used significantly more tobacco and have higher intentions to use tobacco in future than girls (current users: 4.9%). However, the gap between prevalence of tobacco use among boys and girls is reducing.

WHY ARE URBAN 6TH GRADERS USING MORE TOBACCO THAN 8TH GRADERS?

Students in grade six were found to be at a higher risk of using tobacco as revealed by their psycho-social risk profile than those in eighth grade

Some of the strongest risk factors identified were social susceptibility to and social norms about tobacco use.

Exposure to tobacco advertising was strongly related to increased tobacco use among the 6th grade – but was not among students in 8th grade.

In short, the risk profile of the younger cohort in India mimics the risk profile of older cohorts in the USA where tobacco use is more prevalent.

The above findings highlight the need for intervention at an early age to protect Indian children from being susceptible to nicotine addiction.

Tobacco advertising and tobacco use

- Current use of tobacco was **five times higher** in students who were highly receptive to tobacco advertising than those who were least receptive.
- Tobacco use was also **12% higher** in those exposed to tobacco advertising.
- Current tobacco use was almost **twice as high** in those students who were exposed to tobacco advertising in more than four places as compared to those who were not exposed to any.

SUCCESS OF MYTRI

After one year of intervention students in the intervention condition had:

- Better knowledge of adverse health effects of tobacco;
- Had fewer reasons to use tobacco;
- Had more reasons not to use tobacco;
- Were more confident in their ability to advocate for tobacco control;
- Were more knowledgeable about tobacco control policies;
- More students now supported the tobacco control policies
- Fewer students in the intervention condition reported having intentions to use tobacco in future.

After two years of intervention:

- Overall, current tobacco use increased by 68% in the control group and decreased by 17% in the intervention group over the project duration.
- Intentions to smoke increased by 5% in the control group whereas intentions to smoke decreased in intervention schools by 11%..
- Intentions to chew tobacco decreased by 12% in the control group while decreased by 28% in the intervention group.

FACTORS CONTRIBUTING TO MYTRI'S SUCCESS

- Knowledge of health effects *increased*
- Beliefs about social consequences *improved*
- Advocacy skills self efficacy *increased*
- Reasons to use tobacco *decreased*
- Reasons not to use tobacco *increased*
- Support for tobacco control policy *increased*
- Normative beliefs about tobacco use *improved*

PROJECT MYTRI OUTCOMES:HIGHLIGHTS

- Tobacco use was higher in lower grade levels (6^{th} vs 8^{th}), boys (vs girls), government schools/ low to middle SES (vs private schools).
- However, within grades, the older students were using more tobacco as compared to the younger ones.
- Tobacco use increased by 68% in the control group and decreased by 17% in the intervention group after the two years of project MYTRI

IMPORTANT MYTRI PUBLICATIONS

Intervention Design and Outcomes

- Perry CL, Stigler MH, Arora M & Reddy KS. Prevention in translation: Tobacco use prevention in India. *Health Promotion Practice*. First published on July 21 2006, doi: 10.1177/1524839906289222, 1-9
- Stigler MH, Perry CL, Arora M, Shrivastav R, Mathur C, Reddy KS. Intermediate outcomes from Project MYTRI: Mobilising Youth for Tobacco-Related Initiatives in India. *Cancer Epidemiology, Biomarkers, and Prevention*. 2007; 16(6): 1050-6
- Perry CL, Stigler MH, Arora M, Reddy KS. Preventing tobacco use among youth in India: Project MYTRI. *Journal of the American Public Health Association*, 99: 899-906.
- Bate SL, Stigler MH, Thompson MS, Arora M, Perry CL, Reddy KS, MacKinnon DP. Psychosocial mediators of a school-based tobacco prevention program in India: Results from the first year of Project MYTRI. *Prevention Science.* 2009; 10(2), 116-128.

Grade Differences

- Reddy KS, Perry CL, Stigler MH, Arora M. Differences in tobacco use among young people in urban India by sex, socioeconomic status, age and school grade: Assessment of baseline survey data. *The Lancet*, 2006; 367(9510): 589-594.
- Stigler MH, Perry CL, Arora M, Reddy KS. Why are urban Indian 6th graders using more tobacco than 8th graders? Findings from Project MYTRI. *Tobacco Control*, 2006; 15(Supplement 1): i54-60
- Dhawan P., Stigler MH., Perry CL., Arora M, Reddy KS.. Patterns of Tobacco Use and Psychosocial Risk Factors Among Students in 6th through 10th grades in India: 2004 – 2006. Asian Pacific Journal of Cancer Prevention, 10, 1 – 4.

School Type (or SES) Differences

- Mathur C, Stigler MH, Perry CL, Arora M, Reddy KS. Tobacco use among young people in urban India: The role of socioeconomic status. *Nicotine and Tobacco Research*. 2008; 10(1): 109-116

Gender Differences

- Amenah A. Babar; Melissa H. Stigler; Cheryl L. Perry; Monika Arora; Radhika Shrivastav; K. Srinath Reddy. *Tobacco-use psychosocial risk profiles of girls and boys in urban India: Implications for gender-specific tobacco intervention development.* Nicotine & Tobacco Research 2009; doi: 10.1093/ntr/ntp169

Tobacco Advertising

- Arora M, Reddy KS, Stigler MH, Perry CL. Does receptivity and exposure to tobacco advertising and promotions influence tobacco use among young people in urban India? *American Journal of Health Behavior*. 2008; 32(3): 283-294