

# Effectiveness of health promotion in preventing tobacco use among adolescents in India

*Research evidence informs the National Tobacco Control Programme in India*

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**Abstract:** This case study has two aims. First, it describes intervention strategies from two school-based programs designed to prevent tobacco use among adolescents in India. Second, it explains how evidence from randomized controlled trials of these intervention programs was used by a local non-governmental organization in Delhi to advocate for scaling up the Government of India's tobacco control efforts to include school health interventions as one of the components of India's National Tobacco Control Program. This case study illustrates the need for developing countries to conduct rigorous evaluation in order to provide context-relevant evidence prior to scaling up interventions. (*Global Health Promotion*, 2011; 18(1): pp. 9–12)

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### Health promotion intervention

HRIDAY-CATCH (Child and Adolescent Trial for Cardiovascular Health), 1996–1998 and MYTRI (Mobilizing Youth for Tobacco Related Initiatives in India), 2002–2007 were randomized controlled intervention trials funded by the Fogarty International Center at the National Institutes of Health in the USA. These studies were collaborative endeavors between researchers in India (HRIDAY) and the USA (the Universities of Minnesota and Texas). Both trials tested the efficacy of a school-based, multiple component approach to tobacco use prevention for adolescents.

HRIDAY-CATCH (1) was a cardiovascular disease prevention intervention conducted with 7<sup>th</sup> grade

students ( $n > 4,500$ ) from 30 schools in Delhi. Ten schools were randomized to three study arms: (i) a school-based curriculum; (ii) a school-based curriculum plus home-based activities; and (iii) a control with no specific intervention. The intervention in schools consisted of an awareness and advocacy package delivered by teachers and peer leaders. The home program included activity-based booklets, which students completed with their families to positively influence practices around healthy lifestyle.

Project MYTRI (2) was a tobacco prevention intervention, conducted with 6<sup>th</sup>–10<sup>th</sup> grade students ( $n > 15,000$ ) in 32 schools in Delhi and Chennai (Northern and Southern India). In each city, eight schools were randomized to receive the intervention, while eight served as a delayed program control. The

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intervention aimed to positively influence social-environmental and intra-personal factors that predict tobacco use among urban Indian youth (3).

### The evidence from HRIDAY-CATCH and project MYTRI

Both studies employed a rigorous study design to evaluate the interventions developed using evidence-based models and theories. The conceptual model for Project MYTRI was guided by social cognitive theory. Rigorous formative research was conducted to understand the interests, attributes, and needs of the target population, while designing these interventions. Successful models in the West were translated for use in India (4). Pilot testing of all materials ensured cultural and contextual appropriateness of the intervention. The languages used were English, Hindi, or Tamil, based on the medium of instruction in schools. School teachers and principals were consulted regarding the appropriateness of the intervention, as were staff from the Department of Education.

Comprehensive reviews and meta-analyses confirm that school-based programs are successful, provided that: (i) they are interactive; (ii) they engage similar-age peers as facilitators; (iii) they involve other segments of the community (e.g. parents); (iv) they are based on the social influences model; (v) they are conducted across multiple sessions and multiple years, in early to mid-adolescence; and (vi) they provide adequate training and support (5,6). HRIDAY-CATCH and Project MYTRI were deliberately developed to ensure they reflected these characteristics.

The outcome evaluation showed that HRIDAY-CATCH resulted in an increased sensitization and acceptance by schools of the need for lifestyle-related health intervention for adolescents. After a period of one year, students in the intervention condition were significantly less likely than controls to have been offered, received, experimented with, or have intentions to use tobacco in the future ( $p < 0.05$ ) (1). School intervention activities enhanced the awareness and advocacy skills of the adolescents through campaigns, such as the submission of a signature campaign to the Prime Minister of India appealing for a ban on tobacco advertisements in India. The MYTRI intervention targeted social-environmental (social norms, role models, social support, opportunities) and intra-personal factors (knowledge, values, meanings, beliefs, skills) involving four primary

components: (i) classroom curricula; (ii) school posters; (iii) parent postcards; and (iv) peer-led health activism. The outcome evaluation revealed that over the two-year intervention period, students in the intervention group were less likely to show an increase in cigarette and bidi smoking, compared to those in the control group ( $p < 0.05$ ). They were also significantly less likely to express intentions to smoke or chew tobacco in the future ( $p < 0.05$ ) (2). Students were engaged innovatively in classroom intervention activities and in mock Students Parliament to help them understand policy processes. This engagement empowered them with communication, advocacy and leadership skills. To our knowledge, these projects are the only scientifically evaluated and published intervention programs in India on tobacco prevention among school students.

### How the evidence was used

Evidence-based school interventions from the USA were adapted to develop and evaluate the interventions described above in India. This process is described elsewhere (4). Here, we describe how the evidence from HRIDAY-CATCH and Project MYTRI was used to inform the development of the National Tobacco Control Programme (NTCP) in India. Because of the advocacy efforts described below, school-based tobacco prevention programs are now a key component of the NTCP in India.

The HRIDAY-CATCH and Project MYTRI studies provided robust research evidence from randomized controlled trials to inform policy and the NTCP in India through strategic and sustained advocacy efforts. Presentation of this evidence to the government and continuous advocacy supported the inclusion of school health interventions under the NTCP. Advocacy was undertaken by HRIDAY, a research NGO, to convince the Government of India to scale up the school health intervention at the national level and make the tobacco prevention curriculum available to all schools across India. Advocacy efforts were pursued through multiple channels, including policy-maker advocacy, media advocacy, parliamentarians, global community initiatives, public campaigns, community engagement and assisting the government to develop evidence-based guidelines for school health programs.

The results of these studies were shared with the Ministry of Health and Family Welfare,

Government of India and other stakeholders in various national and international meetings. They were also discussed in state-specific and national capacity-building and advocacy workshops to sensitize law enforcers and other stakeholders. The senior leaders of HRIDAY are members of various tobacco control policy committees formed by the Ministry of Health and Family Welfare. In order to translate this evidence from efficacy to effectiveness, the published scientific papers presenting the evaluation were sent to state governments by HRIDAY for replication of these models in schools in their states. HRIDAY also offered to assist state governments in implementing and evaluating these models in their states. Various advocacy campaigns and meetings between youth health activists, policy-makers and parliamentarians were organized by HRIDAY, in order to demonstrate the advocacy and communication skills of young people, in demanding appropriate health promotion policies. HRIDAY has been working on school health initiatives with the Government of India since 2000. HRIDAY interventions were discussed by the Indian Parliament in 2000 with the aim of introducing school-based health programs in all government and private schools.

Since 2002 HRIDAY-CATCH and MYTRI publications have provided evidence to advocate for the need to implement tobacco prevention and control models at the school level, concentrating on behavior change and lifestyle modification through school programs. Appropriate media advocacy activities that disseminated research results and advocacy initiatives have sensitized schools and communities to the importance of tobacco use prevention intervention in Indian schools. HRIDAY youth health activists have addressed the media at various press conferences, sharing their monitoring and surveillance activities related to implementation of tobacco control legislation. HRIDAY has also shared its innovative intervention strategies with youth and organizations globally during the Global Youth Meet on Health and Global Youth Meet on Tobacco Control held in India in 2006 and 2009 respectively. The former meeting was inaugurated by the Prime Minister of India and the presence of other government ministers helped in sharing the success of these interventions (the evidence) and in demonstrating the impact of such interventions in building advocacy skills among

youth for health promotion. Continuous advocacy with the Government of India, the World Health Organization and international scientific communities has resulted in convincing the Indian Ministry of Health and Family Welfare to incorporate school health programs on tobacco control as a component of the NTCP, that was launched in 2007. Guidelines for tobacco-free schools/educational institutions were developed as part of the MYTRI curriculum. HRIDAY was approached by the Ministry to develop guidelines for tobacco-free educational institutions based on its experience and evidence. HRIDAY adapted MYTRI and provided guidelines which were subsequently notified by the Government of India and were disseminated to schools all over India through the Central Board of Secondary Education.

## Conclusion

Developing countries like India need to produce local evidence in health promotion interventions since their cultural contexts are different from those of developed countries. Evidence from developed countries can be inadequate, and sometimes misleading. Intervention models should thus be translated to adapt to local contexts. Continuous and strategic advocacy with policy-makers and the media is integral in translating this evidence into local and national policies. Apart from health promotion activities in schools (and now in communities), HRIDAY has been supporting national activities on tobacco control advocacy, conducting policy research and running a national coalition of 61 NGOs across India on tobacco control.

Three points that can be highlighted from HRIDAY's case study are: (i) use scientifically rigorous research designs to evaluate health promotion interventions to produce locally relevant research evidence; (ii) use strategic and sustained advocacy to translate research into health-promoting policies and programs that can be supported by the government; and (iii) consider presenting this evidence internationally as best practice models.

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