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

Research evidence informs 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 (HRIDAY-CATCH and Project MYTRI) 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 HRIDAY (Health Related Information Dissemination Amongst Youth), a local non-governmental organization in Delhi, to advocate for scaling up the Government of India's (GOI) tobacco control efforts to include school health interventions as one component of India's National Tobacco Control Program (NTCP).

Health Promotion Intervention

HRIDAY-CATCH (Child and Adolescent Trial for Cardiovascular Health), 1996–98 and MYTRI (Mobilizing Youth for Tobacco Related Initiatives in India), 2002–2007 were randomized controlled intervention trials funded by the Fogarty International Centre at National Institutes of Health FIC* at NIH. These studies were collaborative endeavors between researchers in India (HRIDAY) and the US (Universities of Minnesota and Texas). Both trials tested the efficacy of a school-based, multiple component approach to tobacco use prevention for adolescents.

HRIDAY-CATCH¹ was a cardiovascular disease prevention intervention conducted with 7th grade students (n>4500) from 30 schools of Delhi. Ten schools were randomized to three study arms: a) a school-based curriculum, b) a school-based curriculum plus home-based activities, or c) 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 MYTRI² was a tobacco prevention intervention, conducted with 6th–10th grade students, (n>15,000) in 32 schools in Delhi and Chennai (Northern & Southern India). In each city, 8 schools were randomized to receive the intervention, while 8 served as delayed program control. The intervention aimed to positively influence social-environmental and intra-personal factors that predict tobacco use among urban Indian youth³.

The evidence from HRIDAY-CATCH and Project MYTRI

The outcome evaluation of 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 awareness and advocacy skills of 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. 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: (a) classroom curricula; (b) school posters; (c) parent postcards; and (d) peer-led health activism. The results of 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 Student's Parliament to assist them to understand policy processes. This engagement empowered them with communication, advocacy and leadership skills.

These projects are the only scientifically evaluated and published intervention programs in India on tobacco prevention among school students. Both studies employed a rigorous study design to evaluate 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 India⁴. Pilot testing of all materials ensured cultural and contextual appropriateness of intervention. Languages used were English, Hindi, or Tamil based on the medium of instruction in schools. School teachers and principals were consulted regarding appropriateness of the intervention, as were staffs from the Department of Education. School-based programs have traditionally been a controversial approach to tobacco prevention for adolescents. Global evidence suggests some school-based programs work, while others do not⁵. Comprehensive reviews and meta-analyses confirm that school based programs are successful, provided they: (a) are interactive; (b) engage similar-age peers as facilitators; (c) involve other segments of the community (e.g., parents); (d) are based on the social influences model; (e) are conducted across multiple sessions and multiple years, in early to mid adolescence; and (f) provide adequate training and support^{6,7}. HRIDAY-CATCH and Project MYTRI were purposefully developed to ensure they reflected these characteristics.

In depth discussion on HOW the evidence was used

Evidence-based school intervention programs were adapted to develop and evaluate the interventions described above in India, since policy makers in every country base policy frameworks and programs on evidence that is locally produced and is context specific. This step in our process is described elsewhere⁴. Here, we describe how the evidence from

HRIDAY-CATCH and Project MYTRI were used to inform the development of a 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 in India provided robust research evidence from randomized controlled trials to inform policy and NTCP in India through strategic and sustained advocacy efforts. Presentation of this evidence to the government and continuous advocacy helped in inclusion of school health interventions under NTCP. Advocacy was undertaken by the research NGO (HRIDAY) to convince Government to upscale the school health intervention at 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 government in developing evidence based guidelines for school health programs.

The results of these studies were shared with Ministry of Health and family Welfare (MOHFW), GOI 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. Senior leaders of HRIDAY are members of various tobacco control policy committees formed by MOHFW, GOI. In order to translate this evidence base, from efficacy to effectiveness, the published scientific papers presenting this evidence, 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 of youth health activists with policy makers and parliamentarians were organized by HRIDAY, in order to demonstrate youth's learnt advocacy and communication skills, in demanding appropriate health promotion policies. HRIDAY has been working on school health initiatives with GOI since 2000. HRIDAY interventions were discussed in the Indian Parliament in 2000 to introduce school based health programs in all government and private schools. HRIDAY-CATCH and MYTRI publications since 2002 provided evidence to advocate for the need to implement tobacco prevention and control models at school level, concentrating on behavior change and lifestyle modification through school programs. Appropriate media advocacy activities that disseminated research results and advocacy initiatives sensitized schools and the community about the importance of tobacco use prevention intervention at school level. HRIDAY youth health activists have been addressing media in 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 'Global Youth Meet on Health' (GYM-2006) and Global Youth Meet on Tobacco Control (GYM-2009) held in India in the years 2006 and 2009 respectively. GYM 2006 was inaugurated by the Prime Minister of India and presence of other Ministers at this meet helped in sharing success of these interventions (the evidence) and demonstrating the impact of such interventions in building advocacy skills among youth for health promotion. Continuous advocacy with GOI, WHO and international scientific communities has resulted in convincing MOHFW, GOI for incorporating school health programs on tobacco control as a component of NTCP launched in 2007. "Guidelines for Tobacco-Free Schools/ educational Institutions", were developed as part of MYTRI curriculum. HRIDAY was approached by MOHFW, to develop guidelines for tobacco free educational institutions, based on its experience and evidence. HRIDAY adapted MYTRI guidelines and provided to MOHFW in 2009, which were subsequently notified by GOI and were disseminated to schools all over India through Central Board of Secondary Education.

Concluding section

Developing countries, like India need to produce local evidence in health promotion interventions since its cultural context differs from developed countries. While designing these in a developing country, evidence from developed countries can be inadequate, and sometimes misleading. Adopted intervention models should thus be “contextually translated” and also utilize locally available successful models. Continuous and strategic advocacy with policy makers and media are integral in translating this evidence into local and national policies.

Apart from health promotion activities in schools (and now communities), HRIDAY has been supporting national level activities on tobacco control advocacy, conducting policy research and running a national coalition of 61 NGOs across India on tobacco control. HRIDAY’s school and community-based health education programs include not only initiatives to prevent tobacco use, but also interventions to improve diet, promote physical activity, prevent alcohol use, protect the environment, promote healthy gender relations, improve road safety, and increase peaceful and non-violent conflict resolution among Indian youth. This strong and multi-disciplinary portfolio added in influencing policy makers on the quality of evidence produced by these research projects. Credibility of HRIDAY’s headship and their presence in various policy committees aided in presentation of evidence.

Three take away points from HRIDAY’s case study: (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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