

# Tobacco Control in India: Evidence Based Public Health Strategies and Interventions

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**Abstract- Introduction:** Tobacco is the foremost preventable cause of disease and death in the world today, killing half of the people who use it. Tobacco use kills nearly six million people worldwide each year. This epidemic can be resolved by becoming aware of the devastating effects of tobacco, learning about the proven effective tobacco control measures, national programs and legislation prevailing in the home country and then engaging completely to halt the epidemic to move toward a tobacco-free world. This study will review evidence based strategies to control tobacco menace. **Methods:** Data was collected from published research nationally and globally, WHO report on the global tobacco epidemic 2011, Centre for Disease Control and Prevention (2007): Best Practices for Comprehensive Tobacco Control Programs, Cochrane database systematic reviews. **Results:** It was observed that increasing tobacco prices through higher taxes is the most effective intervention to reduce tobacco use and encourage smokers to quit. A comprehensive ban on all tobacco advertising, promotion and sponsorship could decrease tobacco consumption by 7%, independent of other interventions, with some countries experiencing a decline up to 16% (WHO report on the global tobacco epidemic, 2011). Due to strict tobacco access policies targeting retailers and heavy fines for violation in Texas, USA, the sale of illegal sales to minors reduced from 56% in 1996 to 7.2% in 2006. In general, warning labels are overwhelmingly supported by the public, often with levels of support at 85–90% or higher, and even most smokers support labelling requirements. **Conclusion:** Most tobacco control intervention studies are from developed countries, there is a need to develop evidence-based, cost-effective interventions in developing countries for both smoking and smokeless tobacco use. Measures that proved very effective in the developed world, like tax increases on all tobacco products, need to be enforced immediately and the taxes collected should be used to support health promotion and tobacco control programs.

**Index Terms-** Tobacco-control, evidence-based, WHO, CDC

## I. INTRODUCTION

Tobacco is the foremost preventable cause of disease and death in the world today, killing half of the people who use it. Tobacco use kills nearly six million people worldwide each year. According to the World Health Organization (WHO) estimates, globally, there were 100 million premature deaths due to tobacco in the 20<sup>th</sup> century, and if the current trends of tobacco

use continue, this number is expected to rise to 1 billion in the 21<sup>st</sup> century. (1) This global tobacco epidemic kills more people than tuberculosis, HIV/AIDS and malaria combined. This epidemic can be resolved by becoming aware of the devastating effects of tobacco, learning about the proven effective tobacco control measures, national programs and legislation prevailing in the home country and then engaging completely to halt the epidemic to move toward a tobacco-free world.

India is the second largest consumer of tobacco globally. India has one of the highest rates of oral cancer in the world, with over 50% due to smokeless tobacco use. Tobacco consumption continues to grow at 2-3% per annum. By 2020 it is predicted that tobacco will account for 13% of all deaths in India. As per the Report on Tobacco Control in India (2004), nearly 8-9 lakh people die every year in India due to diseases related to tobacco use. (2) Furthermore, up to one in five deaths from tuberculosis (TB) could be avoided if TB patients did not smoke. (3)

The tobacco problem in India is peculiar, with consumption of variety of smokeless and smoking forms. Understanding the tobacco problem in India, focusing more efforts on what works and investigating the impact of sociocultural diversity and cost-effectiveness of various modalities of tobacco control should be our priority. Lack of awareness of harm, ingrained cultural attitudes and lack of support for cessation maintains tobacco use in the community. There is a need to collate the successful evidence based interventions in curbing tobacco use. A major step has to be taken to control what the World Health Organization, has labeled a 'smoking epidemic' in developing countries

**OBJECTIVE:** To find out Evidence based Public Health strategies and interventions for Tobacco control.

## METHODS

Data was collected from published research nationally and globally, WHO report on the global tobacco epidemic 2011, Centre for Disease Control and Prevention (2007): Best Practices for Comprehensive Tobacco Control Programs, Cochrane database systematic reviews.

## II. RESULTS

### TOBACCO TAXATION

It was observed that increasing tobacco prices through higher taxes is the most effective intervention to reduce tobacco

use and encourage smokers to quit. (1)The World Bank estimated that 10% increase in tobacco prices can save 9 million of lives in developing countries and 1 million in developed countries.(4)Between 2009 and 2010, Turkey became one of the 17 smoke-free countries in the world by increasing tobacco taxes by 77%,which increased cigarette prices by 62% .In Canada increased tobacco taxes reduced youth tobacco consumption by 68%. A price increase of 10% would reduce smoking by about 4% in high-income countries and by about 8% in low-income and middle-income countries (5).

According to recommendations made in The Economics of Tobacco and Tobacco Taxation in India, a 10% increase in bidi prices could reduce rural bidi consumption by 9.2% and a 10% increase in cigarette prices could reduce rural cigarette consumption by 3.4% and raising prices by 52.8% from their current levels, would significantly reduce bidi consumption and prevent 15.5 million premature deaths in bidi smokers. (6).Studies estimating the price responsiveness of cigarette demand to cigarette prices found that young people and lower-income groups are the most price-responsive (7).

### BAN ON TOBACCO ADVERTISING, PROMOTION AND SPONSORSHIP (TAPS)

A comprehensive ban on all tobacco advertising, promotion and sponsorship could decrease tobacco consumption by 7%, independent of other interventions, with some countries experiencing a decline up to 16% (WHO report on the global tobacco epidemic,2011) . (8) Research in 22 countries on comprehensive ban on TAPS showed reduction in tobacco use by 6.3%. In 2010 China under obligations of WHO Framework Convention for Tobacco Control (FCTC) and to promote public health through sports made the 16<sup>th</sup> Asian Games completely smoke-free, including a total ban on tobacco sponsorships and advertising and sale of tobacco products. (9)

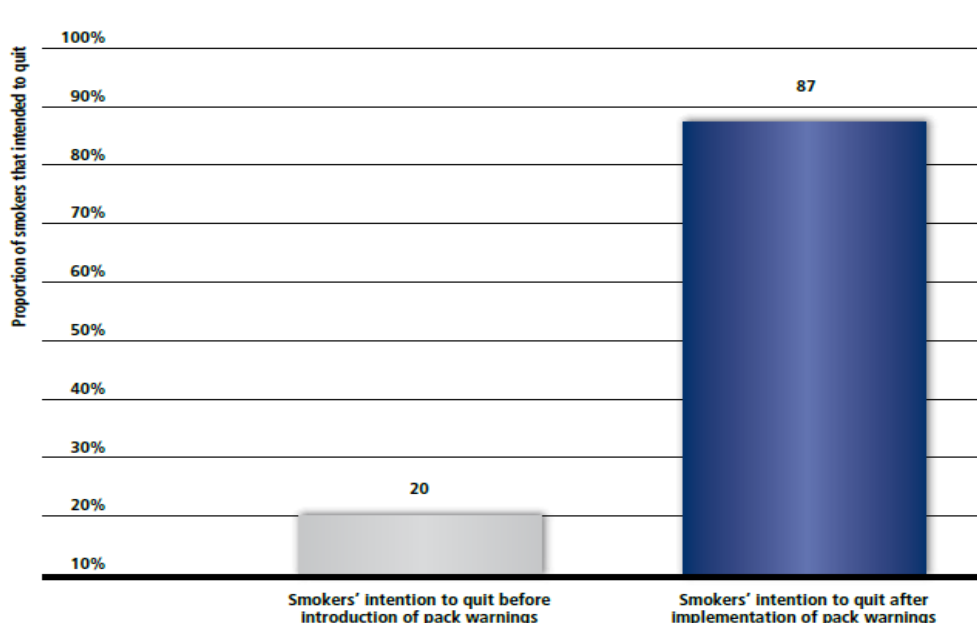
### PROHIBITION OF SMOKING ON PUBLIC PLACES

Completely smoke-free environments with no exceptions are the only proven way to protect people from second-hand smoke .(10)HRIDAY (Health Related Information Dissemination Amongst Youth, Child) in its compilation of facts on Tobacco control mentioned that a Study from around 1200 public places in 24 countries found that the level of indoor air pollution was 89% lower in the places that were smokefree. A study(Pell et al. 2006)in Scotland found that the rate of admissions for childhood asthma fell by 18.2% annually after smoking ban , 86% improvement in air quality in bars and a 39% reduction in Second Hand Smoke(SHS) exposure. (11)In 2007 Chandigarh became the first smokefree city in India .Delhi the capital of India is also smokefree with high compliance of the smokefree rules.

### PREVENTING YOUTH ACCESS TO TOBACCO& PICTORIAL WARNINGS

Due to strict tobacco access policies targeting retailers and heavy fines for violation in Texas ,USA,the sale of illegal sales to minors reduced from 56%in 1996 to 7.2% in 2006. Effective warning labels increase smokers' awareness of health risks, and increase the likelihood that smokers will think about cessation and reduce tobacco consumption(12,13). In general, warning labels are overwhelmingly supported by the public, often with levels of support at 85–90% or higher, and even most smokers support labelling requirements (14,15) Warnings are also seen by non-smokers, affecting their perceptions of smoking and decisions about initiation,and ultimately helping to change the image of tobacco and “denormalize” its use (16) .In Brazil and Singapore smokers changed their opinion on the health consequences of smoking and said the warnings made them to quit. Evidence from Canada showed that pictorial warnings increase smokers intention to quit(17).(Figure-1)

**Figure-1. Introduction of graphic warning labels in Canada increases smokers intention to quit.**



Source: Hammond D et al. Impact of the graphic Canadian warning labels on adult smoking behaviour. Tobacco Control, 2003, 12:391–395.

### III. MEDIA INTERVENTIONS

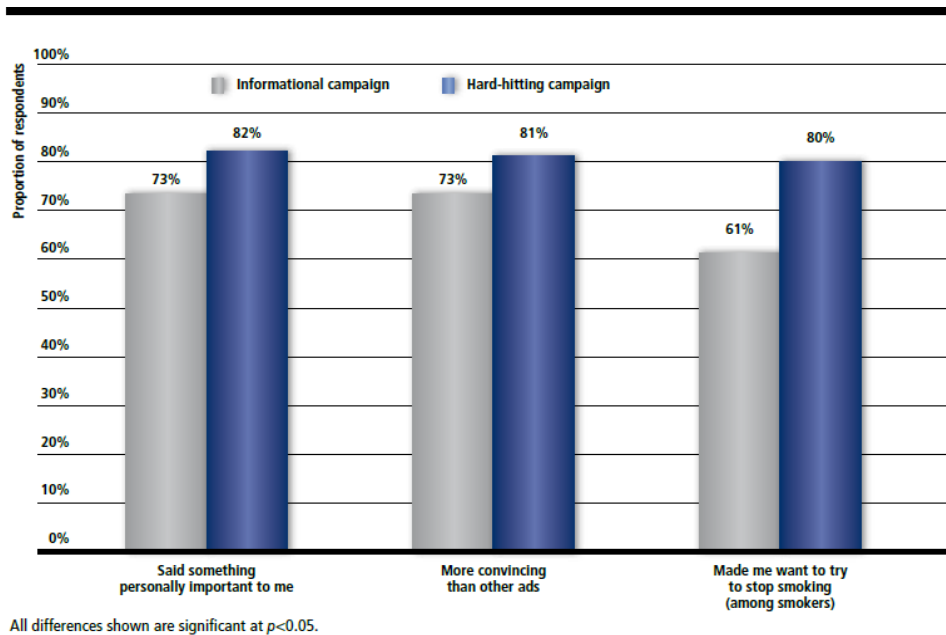
Anti-tobacco mass media campaigns can be cost effective compared with other interventions despite the expense required, and can have a greater impact because they reach large populations quickly and efficiently. Increased news coverage of tobacco control issues may reduce tobacco consumption and increase cessation attempts (19-21). News media coverage of smoking and health is associated with changes in population rates of smoking cessation but not initiation. Relationship between newspaper coverage of tobacco issues and perceived smoking harm and smoking behaviour among American teens. (22). Well managed publicity supporting mass media campaigns can have a large impact on the number of people aware of and responding to a campaign. Earned media can also be effective in motivating smokers to quit when tobacco control policy changes are put into effect (23). Within its National Tobacco Control Programme, the Government of India allocates approximately US\$ 5 million annually to antitobacco mass media campaigns.

Based on increasing evidence, including the recent Global Adult Tobacco Survey that shows smokeless tobacco is used by more than a quarter of all adults in India, one of the most recent campaigns highlights the harmful effects of smokeless tobacco

use. The campaign was run in three 6-week phases for more than a year to warn the public about the dangers of smokeless tobacco use. The first phase of the campaign, which aired on television and radio in November and December 2009 in 11 local languages, included hard-hitting footage of patients with tobacco-related cancers and featured an oral cancer surgeon describing the disfigurements suffered by tobacco chewers. The campaign was also adapted for northeastern Indian audiences and ran for eight weeks in early 2010. An evaluation of the campaign showed high recall and impact (24). Results of a national mass media campaign in India to warn against the dangers of smokeless tobacco consumption. (25) A web site (<http://www.chewonthis.in>) has been developed and launched jointly by the Ministry of Health and Family Welfare and Tata Memorial Hospital as an advocacy platform to highlight the dangers of smokeless tobacco products.

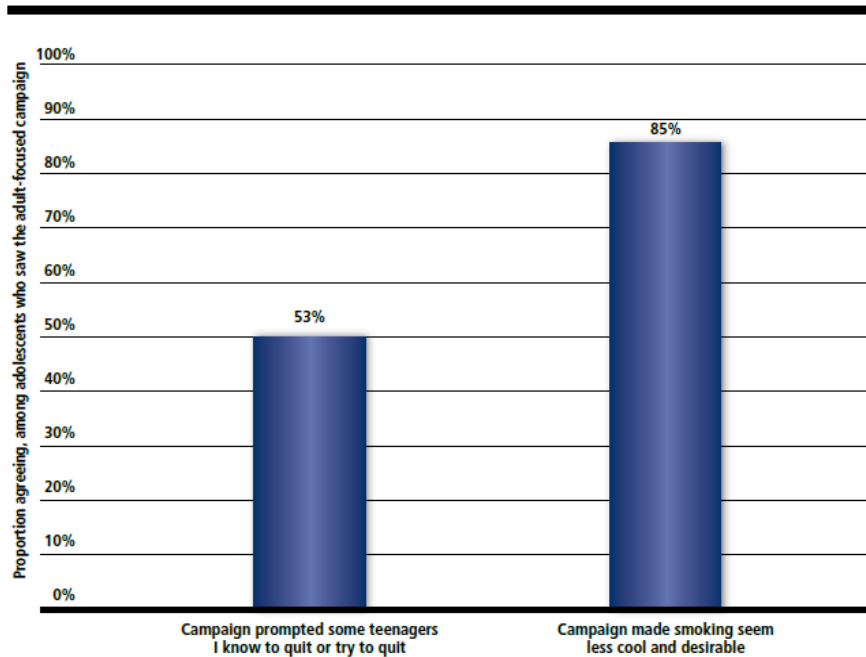
Various Studies (Murphy et al.2000, Donovan et al. 2003, Pechmann and Reibling 2003, Terry) showed that both smokers and nonsmokers indicated that the ads communicating real life experiences about the harm of tobacco were more thought provoking and more likely to change their smoking intentions. (26,27,28) A study from Brazil and Australia showed that media campaigns are quite effective.(29,30) (Figure-2,3)

**Figure -2 Hard-hitting anti-tobacco campaigns are more effective than informational campaigns in Sao Paulo, Brazil**



Source: Alday J et al.(2010). Smoke-free São Paulo: a campaign evaluation and the case for sustained mass media investment. *Salud Pública de México*, 2010, 52(Suppl. 2):S216–S225.

**Figure-3 Adult -focused campaigns influence adolescent smokers and non-smokers in Australia**



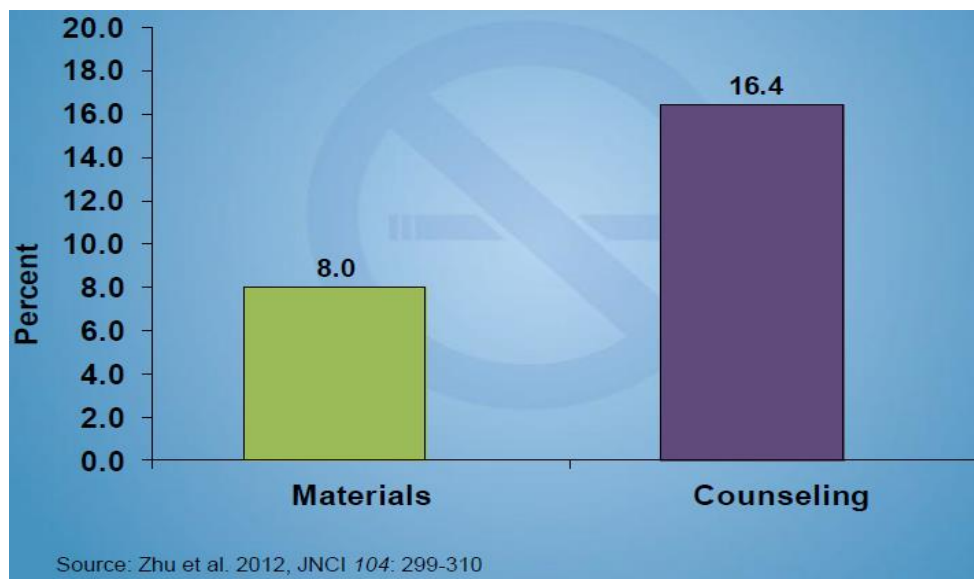
Source:White VN et al. Do adult-focused anti-smoking campaigns have an impact on adolescents.

**OTHER INTERVENTIONS**

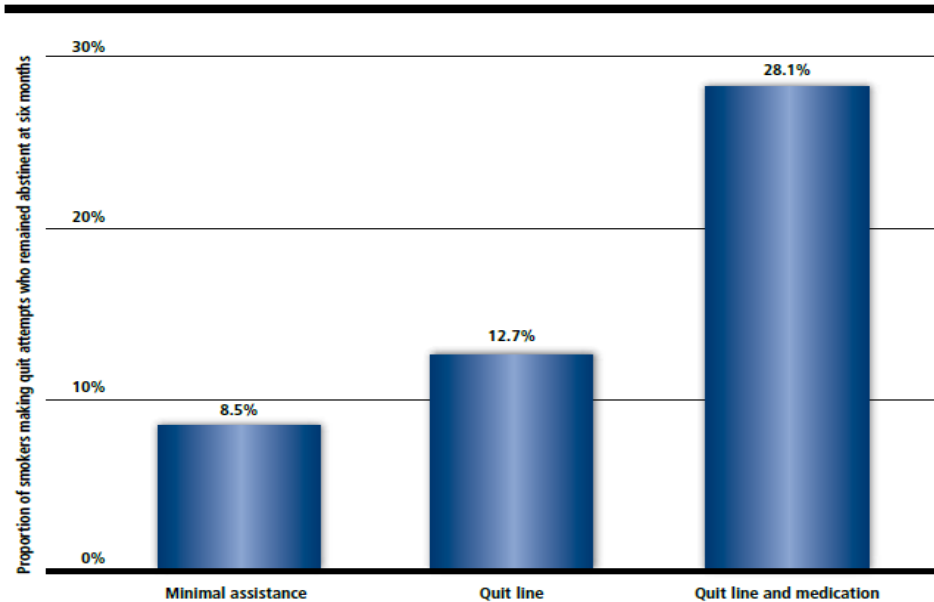
Regardless of the possible reasons for higher prevalence of tobacco use among the less educated, community intervention studies in India have proven that educational interventions on the adverse effects of tobacco combined with personalized support for quitting this addiction receive a positive response and are successful in getting educationally deprived users to quit (31-

33).Quitting produces immediate and significant health benefits and reduces most of the associated risks within a few years of quitting (34). Zhu S.H et al.(2012) in their study on the effects of a multilingual telephone quitline for Asian smokers found six-month prolonged abstinence rate of 16.4% by counseling.(35) (Figure-4) Smokers reported prolonged cessation from quitline combined with medication(36) (Figure-5)

**Figure-4.Six-month Prolonged Abstinence Rate**



**Figure-5 Smokers reporting six months continued cessation with different interventions**



Source: Fiore MC et al. US Department of Health and Human Services, Public Health Service (Clinical Practice Guideline. 2008 update

Tobacco cessation centres(TCCs) from India have reported overall quit rates of around 16% at 6 weeks postintervention. (37) . [Mishra GA](#) et al. (2009) studied Workplace Tobacco Cessation Program in a chemical industry in rural Maharashtra, India found the tobacco quit rates increased with each follow-up intervention session and reached 40% at the end of one year. There was 96% agreement between self report tobacco history and results of rapid urine cotinine test.A positive atmosphere towards tobacco quitting and positive peer pressure assisting each other in tobacco cessation was remarkably noted on the entire industrial campus.(38)

A Cochrane review stated that a transtheoretical model(TTM) (stages of change) approach, two tested pharmacological aids to quitting (nicotine replacement and bupropion), and the remaining trials used various psycho-social interventions, such as motivational enhancement or behavioural management. The trials evaluating TTM interventions achieved moderate long-term success, with a pooled odds ratio (OR) at one year of 1.70 ( 95% confidence interval (CI) 1.25 to 2.33) persisting at two-year follow up with an OR of 1.38 (95% CI 0.99 to 1.92) (39).

[Mishra GA](#) et al. (2010) found that simple advice by health professional, taking as little as 30 seconds can produce quit rates of 5–10% per year. Pharmacological interventions when used with behavioral strategies can produce quit rates of about 25-30%. Nicotine Replacement Therapy (NRT) provides a slow and steady supply of nicotine in order to relieve craving and withdrawal symptoms, and is associated with quit rates of about 23% as against 13% with placebo. (40) [Monika A](#) et al. (2011) showed in school based program –HRIDAY- CATCH (Health Related Information Dissemination Amongst Youth, Child and Adolescent Trial for Cardiovascular Health), 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 tobacco, or have intentions to use tobacco in the future. (p<0.05)

#### IV. DISCUSSION

WHO report on the global tobacco epidemic, 2011 shows that it is possible for any country, regardless of political structure or income level, to implement an effective tobacco control program to reduce tobacco use.Tobacco control interventions reviewed by the Cochrane collaboration, the US preventive services task force and the task force for community preventive services showed clinical interventions like brief cessation counseling interventions and increase prices of Tobacco products are very effective while community interventions to reduce exposure to secondhand smoke(SHS) ,complete bans on TAPS , group behavior therapy and telephone quitlines are effective.

With strong evidences suggesting that increased tobacco taxes, the dissemination of information about the health risks from tobacco and increased access to cessation therapies are effective in reducing tobacco use ,there is strong need for their implementation especially in low- and middle-income countries.A national coordinating mechanism at a high level of government should be convened with an official mandate to develop tobacco control infrastructure and coordinate policy implementation (41). Tobacco use prevalence often differs across income, age, ethnic groups and by gender, indicating social inequity. As national tobacco control programmes are designed to reduce tobacco use, efforts to ensure that population subgroups with disproportionately high rates of tobacco use are reached by policies and programmes are essential (42).



## V. CONCLUSION

Most tobacco control intervention studies are from developed countries, there is a need to develop evidence-based, cost-effective interventions in developing countries for both smoking and smokeless tobacco use. Measures that proved very effective in the developed world, like tax increases on all tobacco products, need to be enforced immediately and the taxes collected should be used to support health promotion and tobacco control programs. Public health awareness, raising a mass movement against tobacco, sensitizing and educating all health care professionals for tobacco control and cessation by incorporating the topic in medical undergraduate curriculum, various CMEs, conferences, scientific meetings and workshops is vital. Expansion of Tobacco counseling centres (TCCs) to the periphery to reach the community, making them more accessible and widely acceptable, will facilitate millions of current tobacco users to quit the habit.

The progress in reaching the highest level of the MPOWER measures is a sign of the growing success of the WHO FCTC and provides strong evidence that there is political will for tobacco control on both national and global levels, which can be harnessed to great effect. Many countries have made significant progress in fighting the epidemic of tobacco use, and can be looked to as models for action by those countries that have not as yet adopted these measures.(43) Countries must continue to expand and intensify their tobacco control efforts, ensuring they have both the financial means and political commitment to support effective and sustainable programmes Continued progress will stop millions of people from dying each year from preventable tobacco-related illness, and save hundreds of billions of dollars a year in avoidable health-care expenditures and productivity losses. It is up to us to make sure that this occurs.

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