National Board of Examinations - Journal of Medical Sciences
Volume 3, Issue 1, Pages 67–77, January 2025
DOI 10.61770/NBEJMS.2025.v03.i01.009

REVIEW ARTICLE

Understanding Tobacco Control: Global and National Strategies

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Accepted: 4-November-2024 / Published Online: 06-January-2025

Abstract

Tobacco use is a significant global health crisis, impacting over 1.1 billion individuals and leading to approximately 8 million deaths annually. This narrative review evaluates the tobacco control policies worldwide, focusing on India, where both smoked and smokeless tobacco prevalence remains high. Historical interventions highlight ongoing efforts to combat tobacco use; however, challenges in public awareness and access to cessation resources persist. There is an urgent need for effective policies and comprehensive public health strategies to reduce tobacco consumption, underscoring the critical role of health professionals in promoting cessation efforts.

Keywords: Tobacco Control, Health Policy, Smoking

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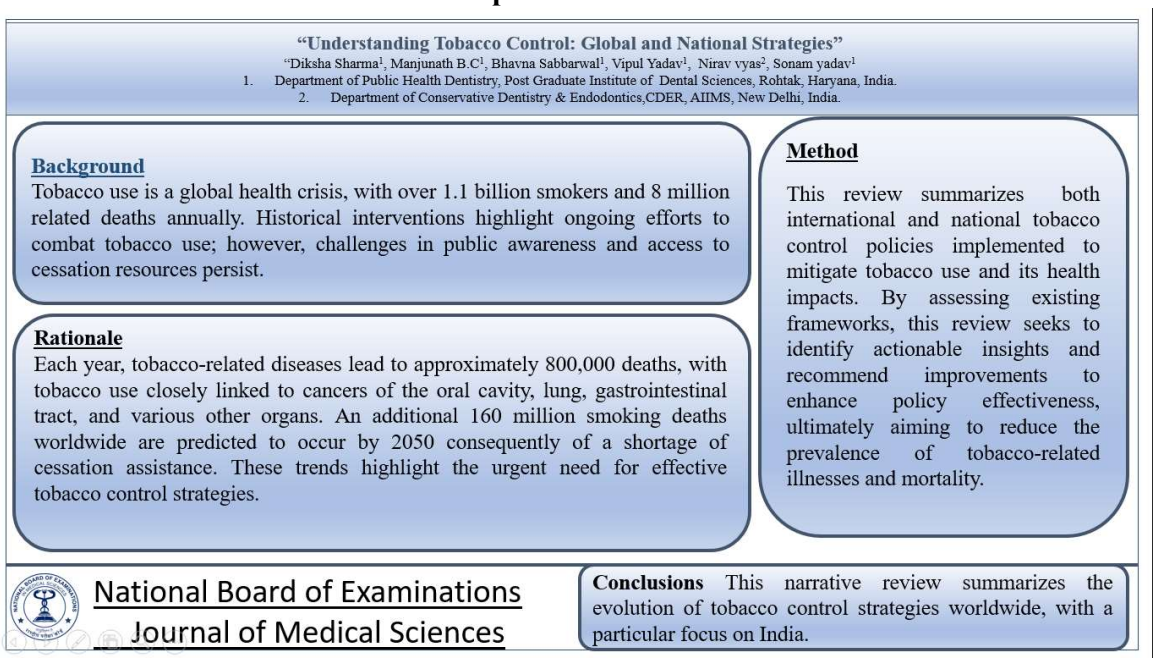
Graphical Abstract



Introduction

As stated by WHO (World Health Organization), 1.1 billion individuals smoke worldwide, representing one-third of the global population aged 15 and over, resulting in 8 million deaths each year [1,2]. 10% of global mortality is due to tobacco smoking, with developing countries expected to experience the impact of disease by 2030, accounting for 80% of cases [3]. During the Mughal Empire, 400 years back tobacco had been bought to India by Portuguese. In India tobacco is mostly used in 2 forms: smokeless tobacco and smoke tobacco. The most common way to smoke tobacco is with a beedi, then with cigarettes. An estimated 2% of women and 19% of males in India smoke tobacco. According to age-specific information from the National Family Health Survey-2, the estimated smoking prevalence among men in the thirty-plus age group is 41.2% [2]. Compared to the rest of the planet, in India, smokeless tobacco is more common (21.4percent) than smoked tobacco (10.7percent) [4]. As a result of smokeless tobacco becoming more common in India compared to the other countries, the incidence of oral cancer is high among users (50%) [5,6]. It is widely known that tobacco usage is one of the primary reasons for illness and mortality in India, accounting for about eight lakh deaths annually [2].

The IARC (International Agency for Research on Cancer) monograph declares that there is enough data to conclude that tobacco use raises chance of developing cancers of the gastrointestinal tract, throat, urogenital tract, mouth, and larynx [7]. Smoking is the primary reason for lung cancer fatalities in men (about 90%) and women (about 80%) [8]. Tuberculosis (TB) is another disease that is linked to even small amounts of tobacco smoking [9]. So, it can be wise to say that not a single part of the body is spared by harmful effects of tobacco [2].

Historical Intervention to prevent tobacco habits

- The Prevention of Food Adulteration Act (1954) mandated that cigarette packages display legislative warnings with a minimum diameter of 3 mm in both English and the local language. The act also restricted smoking in public areas in Karnataka and Maharashtra [10].
- With the passage of the Cigarettes Act in 1975, tobacco control began in India [11].
- The Motor Vehicles Act of 1988 barred smoking and spitting on public transportation. The Cinematograph Act was amended by the Central Government in 1991 to outlaw the facilitation of smoking in motion pictures [10].
- In addition to these national initiatives, certain Indian states had attempted to address tobacco usage through state laws. Kerala followed Delhi in 1999 as the 1st state to outlaw smoking in public places, having done so since 1996 [10].
- In 1999, Goa passed the anti-tobacco legislation. Ultimately it became the diluted version of the original bill due to intense lobby from pro-tobacco groups. Within the next 12 months, Andhra Pradesh, Madhya Pradesh, Bihar, Maharashtra, and Tamil Nadu banned marketing and sales of gutkha [10].

Global and Indian initiative for tobacco control

Global Tobacco Surveillance System (GTSS)

The GTSS has been launched in 1998 by WHO, the CPHA (Canadian Public Health Association), and the Centre for Disease Control and Prevention (CDC) in U.S.A. The principal objective was to augment the nation's capacity to formulate, execute, and assess tobacco control measures while overseeing essential provisions of the WHO FCTC (Framework Convention on Tobacco Control). GTSS encompasses several surveys.

1. **Global Youth Tobacco Survey (GYTS)**
   The GYTS survey, which was self-administered and conducted in schools, measures juvenile tobacco use, cessation, exposure to secondhand smoke, as well as an understanding of anti-tobacco messages. The target demographic is youth aged 13 to 15. GYTS-4 India 2019 report stated that there had been 42percent decline in tobacco consumption among 13 to 15-year-old kids who are still going to school. For boys, the prevalence of tobacco use was 9.6 percent, while for girls it was 7.4 percent. Tobacco usage among school-going children was highest among Arunachal Pradesh as well as Mizoram (58percent) while the lower rates were found in Karnataka (1.2percent) along with Himachal Pradesh (1.1percent) [12,13].
2. **Global Adult Tobacco Survey (GATS)**
   Working with WHO, the Centers for Disease Control and Prevention, & participating national governments, the GATS was launched in 2007 and was finished in 32 countries between 2008 and 2021. The initiative gathers information on tobacco use prevalence and related health policy,

with an emphasis on adults aged 15 and above.

3. **Tobacco questions for surveys (TQS)** Provides standardized questions for integration into other surveys to promote comparability over time [13].

Global School-Based Student Health Survey (GSHS)

It had been a cooperative initiative established by the WHO in partnership with several UN agencies, including UNICEF, UNESCO, and UNAIDS. This survey was designed to gather information on various health behaviours as well as protective factors among youth worldwide, with students in the 13–17 age range serving as the main target demographic. The GSHS addresses ten major areas. The following are considered risk factors: 1) alcohol consumption; 2) food habits; 3) using drugs; 4) personal hygiene; 5) psychological wellness; 6) Exercises; 7) protective aspects; 8) Sexual practices that raise the possibility of contracting HIV, other STDs, and unplanned pregnancy; 9) tobacco use; along with 10) violence & accidental damage. The survey employs a self-administered questionnaire, allowing students to report their health behaviors anonymously. It uses a stage sampling process. Till now GSHS has been conducted in 104 countries, providing valuable insights into adolescent health behaviors [14].

Tobacco cessation clinic

In 2002, GOI (Government of India), the WHO, and the Ministry of Health and Family Welfare (MoHFW) collaborated to develop the nation's first official tobacco cessation clinics to help individuals stop smoking. The first stage entailed establishing and developing Indian tobacco cessation centers and creating models for cessation [2]. These facilities are located throughout India in different settings, involving psychiatric clinics, medical colleges, cancer treatment centers, and non-governmental organizations. The steps in the WHO algorithm for quitting smoking include evaluating the tobacco habit, followed by basic advice, behavioral therapy, and, if necessary, medical treatment [15].

A 5-10% quit rate for tobacco has been observed with just thirty seconds of counsel from a health care professional. Every patient who smokes ought to be provided with a quick intervention technique called 5 A′s, or ASK (about tobacco usage)- Advice (to stop) - Assess (commitment and change-related obstacles) ASSIST (individuals dedicated to effecting change) – ARRANGE (monitoring progress through follow-up).

According to Indian TCCs, six weeks after the intervention, the overall cessation rate was about 16%. A TCC's clinic approach's main drawbacks were its limited population reach and loss of follow-up. The effectiveness of quitting and the avoidance of relapses depend on frequent contact counselling. Therefore, it is imperative to go beyond clinics to serve the millions of Indians who currently use tobacco. Community outreach clinics, workplace initiatives, youth groups, women's groups, and other settings can all be examples of this [16].

COTPA ACT

- In India, the Cigarettes (Regulation of Production, Supply, & Distribution) Act, which had been passed by the GOI in 1975, mandates the inclusion of a statutory health warning on every cigarette packet as well as

advertisements. The Indian Parliament enacted the Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Bill, in April 2003. In 2003, on 18 May, this Bill became an Act – COTPA. Rules had been developed and put into effect on May 1, 2004. The Act covers the whole nation and applies to each item which involve tobacco in any one form. The key provisions of the COTPA acts were as follows:

A nationwide initiative to reduce tobacco use included outlawing smoking in public areas starting on October 2, 2008; a ban on tobacco product promotion and advertising; limits on sales to children and near educational institutions; mandatory health warnings in English and an Indian language on packaging; and regulations for disclosing tar and nicotine content [17].

Amendment in COTPA 2023

The COTPA Act No. 2, which prohibits the sponsorship, promotion, and direct & indirect advertisement of tobacco products, has been amended. The amended rules were as follows:

Health spots and disclaimers must be included in online curated content that features tobacco products. A warning in audio-visual format about the risks of tobacco use must be played at the beginning and middle of the program, lasting at least 20 seconds, and a clear health warning must be visible at the screen's bottom. Anti-tobacco health spots must be displayed for at least 30 seconds. The warning must be in the same language as the content, using black font on a white background with a warning as “Tobacco causes cancer” or “Tobacco kills.” Additionally, tobacco products or their use should not be shown in promotional materials or through brand placement [18].

WHO framework convention on tobacco control

In reaction to the tobacco pandemic's globalization, the WHO FCTC was established as a global public health treaty to declines the load of tobacco-related disease as well as death. The World Health Assembly endorsed it in May 2003, and on February 5, 2004, India became the eighth nation to do so. The FCTC supports methods that depend on scientific data which have been proven to be successful in lowering tobacco use. Though not a part of the legislation, it provided guidance for several national and international initiatives aimed at discouraging smoking and discouraging others from adopting the habit. The worldwide political determination to achieve considerably more extensive and effective tobacco control was evidenced by the WHO FCTC, which by July 2009 had > 160 parties representing 86percent of the population of the world [19]. Global Progress Report on WHO Implementation for 2023 According to FCTC estimates, 29% of individuals aged 15 or older worldwide (45% of men as well as 13% of women) had been current tobacco users in 2005. Tobacco consumption rates fell to an average of 20% by 2022 (33% of men and 7% of women) [20].

Bloomberg initiative to reduce tobacco use

It has been launched in 2005 by Bloomberg Philanthropies. It was a significant global effort aimed at combating

tobacco use and its health impacts, particularly in low- as well as middle-income countries. The initiative has committed nearly $1.58 billion to support tobacco control efforts worldwide. The program focused on countries where tobacco use is a more common reason for death, especially in China and India, which together account for around 40% of global smokers. This initiative operated on principles of MPOWER. Bloomberg Philanthropies announced an extra $420 million in February 2023, with the goal of lowering teen e-cigarette usage in the US and assisting international programs in low- as well as middle-income nations. Since the launch of the program, the percentage of people who smoke worldwide has reduced from 22.7 to 17.5percent. There has been a significant decrease in cigarette sales as well; in 2021, 750 billion fewer cigarettes were sold than in 2012 [21].

Global Health Professions Student Survey (GHPSS)

It has been cross-sectional research designed conducted in 2005-2007 to evaluate tobacco use & related behaviours between health professions students. As a section of the GTSS, the GHPSS gathers information via the GYTS, GSPS, GATS, and GHPSS surveys, among others. Students in their third year of graduate degrees in medicine, dentistry, pharmacy, and nursing participated in a poll conducted at their school. The study employed a standard questionnaire that inquires about the participants' demographics, smoking habits, exposure to second-hand smoke, intention to quit, and training in cessation approaches received for patient counselling. Sreerama Reddy et al. (2018) used GHPSS survey in their study and found a higher prevalence of smoking (40percent) in nations surveyed in Europe along with the Americas. Notably, dental and medical students from eastern and central Europe had greater smoking rates [22-23].

MPOWER

As part of the FCTC agenda, the WHO introduced MPOWER in 2008, which consisted of six highly effective but reasonably priced methods to fight tobacco consumption. Currently, the majority of countries and 40percent of the population of the world have implemented at least one of MPOWER's recommendations. The following were the actions that Mpower recommended: **M**onitoring the use of tobacco, **P**rotection of people from tobacco smoke, **O**ffering help to people to quit tobacco use, **W**arning everyone about the dangers of tobacco, **E**nforcing the ban on tobacco advertising, promotion and sponsorship and **R**aising taxes on tobacco [24].

WHO report on the global tobacco epidemic, 2023 for MPOWER

Over the past 15 years, Mpower has implemented regulations requiring 100% smoke-free areas, protecting nearly 2 billion additional individuals. Since 2007, the number of countries implementing MPOWER measures has increased from 44-151, while the number of nations implementing two or more MPOWER measures has increased by nearly ten times, from 11 to 101. At least three plans covering 1.5 billion people are in existence in 48 nations. As per the report, 71% of the global population over 5.6 billion covered by at least one measure in 2022. A completely smoke-free environment now covers 2.1 billion people living in 74 countries. The second most popular

MPOWER initiative, smoke-free settings have been implemented in seven times as many nations since 2007 [25].

National tobacco control programme (NTCP)

In the XI Five Year Plan, the MoHFW, GOI, launched the NTCP to expedite the enforcement of Tobacco Control Laws, raise public awareness of the detrimental impacts of tobacco use, and fulfill its commitments under the WHO-FCTC. It was a national initiative that had the first-ever state and federal funding for tobacco control and was implemented in 21 states covering 42 districts [17]. In India, 26.7percent of smokeless tobacco users and 46.3percent of smokers who saw a healthcare provider in 2009–10 were counselled to give up, based on the GATS [26]. To improve on the momentum it generated at the time of the 11th 5-Year Plan and baseline data produced by the GATS India 2009 to 2010, which indicated a greater level of prevalence of tobacco use, the NTCP was upgraded in the 12th 5-Yrs. By the end of the plan, aim to lower the prevalence of tobacco usage by 5percent. The GATS's second round (2016–17) stated that there were 8.1 million fewer tobacco users overall.

The goal was to create tobacco cessation centres (TCCs) around the nation and train the workforce—which included teachers and healthcare professionals—in tobacco cessation counselling. This program also included training and research for growing crops other than tobacco, laboratories for testing tobacco products, efforts to raise public awareness to encourage behaviour changes, and GATS-based tobacco usage surveillance [10,27]. The NTCP's activities involve organizing seminars, exhibitions, & banners at the level of district; putting the anti-tobacco legislation into practice in letter & spirit; and providing the state with monthly reports on the district-level anti-tobacco initiatives. The program was intended to be implemented at 3 levels: the state, centre, and district levels. However, because of a lack of resources, including personnel and infrastructure, the program's execution and the consequences of infractions could not be carried out effectively. Currently, 36 States and Union Territories—or around 612 districts across the country—are implementing the Program.

National Tobacco Control Cell (NTCC)

The MoHFW's NTCC is in charge of developing overall policy as well as organizing, carrying out, overseeing, and assessing the various initiatives included in the NTCP. The National Cell operates directly under the direction and control of the MoHFW Joint Secretary, who is in control of the program. The designated officers in the Directorate General of Health Services are in charge of providing technical support. This program was implemented at the national, state, & district level [28].

M-CESSATION PROGRAM

The program was initiated in 2016 as a part of the government’s digital India initiative based on the aim that utilization of mobile technology can help address the limited coverage of developed TCCs, particularly in the rural and suburban regions [29]. Working with the WHO as well as the International Telecommunication Union, the Indian government adopted a cessation program depending on the "Be Healthy Be Mobile" campaign of WHO for use with mobile phones. Those who wanted to quit smoking

were the target audience for this M-Cessation program. The user can register for the quit program and get a customized Short Text Message (SMS) from 5616115 by sending a missed call to 01122901701. After that, the user receives 150 SMS tailored to their needs, which will help them in their efforts to quit smoking. On the GOI website, out of millions who had signed up, a 16% quit rate has been seen after 30 days of enrolment [30]. The M-Cessation tool is available in both Hindi and English, and as it is free to use and doesn't require an internet connection, it is proven as a cost-effective measure. The national tobacco quit line was offered in the languages of South India started in September 2018. It has been controlled by NIMHANS, and individuals who were unable to stop using the quit line alone were directed to the closest TCC [31].

NIMHANS & IDA INITIATIVE

The Tobacco Cessation Centre at NIMHANS, Bangalore, offered a 1month course for health professionals on treatment for substance abuse, including tobacco issues. Also, the Indian Dental Association (IDA) trained dental professionals to establish tobacco cessation clinics, resulting in 115 TII (Tobacco Intervention Initiative) centres throughout 16 states within a year, primarily run by private individuals who are on their practice were trained in a 24-hour program [32,33].

The Prohibition of Electronic Cigarettes Act, 2019

The objective of the act was that it is illegal for e-cigarettes or electronic nicotine delivery systems (ENDs) to be produced, manufactured, imported, exported, transported, sold, distributed, stored, and advertised in India. The fine for first time offenders is up to ₹1 lakh, or imprisonment up to a year. For subsequent offenders, the maximum sentence for imprisonment is three years, and the maximum punishment is ₹5 lakh. After an ordinance was issued in September 2019, this legislation was presented, and in late 2019, both houses of Parliament passed it. Individuals were prohibited from continuing to keep e-cigarettes and ENDs in storage. If discovered storing them, offenders risk a fine of ₹50,000 or up to six months of jail. Owners of existing stock were required to report and deposit it at specified offices [34].

Nasha Mukt Bharat Abhiyan (Drug-Free India Campaign)

The program was introduced on 26 June 2020, by the Ministry of Social Justice and Empowerment in India. The initiative aimed to combat substance abuse across the country, particularly focusing on vulnerable districts. The main objectives of the program were to generate awareness programs, capacity building programs, and community engagement, and its main focus was on university campuses, schools, hospitals and rehabilitation centres. The Ministry of Social Justice and Empowerment conducted the National Comprehensive Survey, which found that there were over 60 million drug users between the age of 10 and 17 in the country. The campaign focused on 272 districts identified as high-burden areas for drug use, based on data from the Narcotics Control Bureau and comprehensive national surveys. More than 8000 young volunteers were actively engaged in educating people about the harmful effect of drug abuse and assisted in the rehabilitation of victims of substance abuse. More than 500 voluntary organizations

were involved in implementing the campaign, supported financially under the NAPDDR (National Action Plan for Drug Demand Reduction) [35].

In India, a large number of voluntary groups have been actively engaged in tobacco control initiatives, including Voluntary Health Association of India, HealthBridge, Salaam Mumbai Foundation, CPAA-Cancer Patients Aids Association, The Indian cancer society, SEEDS- socio-economic and educational development society, HRIDAY-SHAN, and others. Healis is actively involved in an excellent tobacco control study. Furthermore, it engages in public education, workshops for various stakeholders, scientific conferences as well as meetings at the national and international levels, and media mobilization for tobacco control [36].

Conclusion

The Indian government and MoHFW have implemented many laws and taken several steps to limit the usage of tobacco. However, the efficacy of these measures is largely based on public perception and accessibility. The monetary burden of medical expenses as well as lost productivity related to smoking highlighted how urgent it is to solve this public health emergency. An additional 160 million smoking deaths worldwide are predicted to occur by 2050 consequently of a shortage of cessation assistance. To combat smoking effectively, key strategies include enhancing tobacco control legislation, increasing funding for cessation programs, expanding digital public awareness campaigns, investing in research to monitor trends, and fostering global collaboration to share successful strategies. As public health professionals, particularly in the dental field, it is an ethical obligation of the clinician and public health dentist to promote awareness regarding tobacco cessation as well as to support individuals who are motivated to quit this habit.

Statements and Declarations

Conflicts of interest

The authors declare that they do not have conflict of interest.

Funding

No funding was received for conducting this study.

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