

IFMSA Policy Proposal Tobacco Consumption

Proposed by Team of Officials
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Policy Statement

Introduction:

The tobacco consumption epidemic is one of the biggest public health threats, and it has a significant impact on individuals, communities, and the environment, with a huge direct as well as indirect impact on all spheres of health, health systems and the economy, tobacco consumption is a defining challenge in global health. Tackling a problem as complex as tobacco consumption needs well-coordinated joint efforts from all relevant stakeholders.

IFMSA position:

The International Federation of Medical Students' Associations (IFMSA) identifies tobacco consumption as a global problem with a complex nature, which requires a correspondingly multisectoral approach to resolve it. With the ever-rising burden of tobacco consumption affecting individuals and communities in multiple ways, with a higher burden on specific vulnerable groups, addressing the problem with its root causes and determinants are of utmost importance. Hence, coordinated actions locally, nationally, and internationally must be taken to tackle this issue and safeguard the health of every individual. As a federation of future healthcare providers, we firmly believe that addressing tobacco consumption should be emphasised in order to achieve the highest standards of health for all.

Call to Action:

IFMSA calls for

- **The World Health Organisation (WHO) and relevant UN agencies to:**
 - Encourage Member States to implement comprehensive tobacco control strategies aimed at smoking initiation that is outlined in the WHO's Framework Convention on Tobacco Control.
 - Promote international and regional cooperation between State and relevant Non-State Actors on implementing international and regional plans such as Framework Convention on Tobacco Control
 - Acknowledge youth as a major stakeholder in addressing tobacco consumption and engage youth representatives in international dialogues related to harmful tobacco consumption
- **Governments to:**
 - Commit to implementing national strategies that limit tobacco consumption which is in line with the WHO's Framework Convention on Tobacco Control
 - Consider intersectional vulnerabilities while developing policies and strategies to address tobacco consumption.
 - Initiate, sustain, and promote research on the health effects of tobacco consumption
 - Provide technical, logistical and financial support for youth and allow their meaningful engagement in the development of strategies and policies against tobacco consumption
 - Designing and implementing strategies that limit the tobacco industry and their impact on tobacco products promotion and consumption
- **Civil Society:**
 - Develop and sustain advocacy strategies to tackle tobacco consumption on a local, national and international level
 - Foster collaborations between governmental and non-governmental organisations to address tobacco consumption holistically through multidisciplinary actions
 - Participate in and organise initiatives to educate and enlighten society on the harmful effects of tobacco consumption, and the benefits of smoking cessation
- **Educational Institutions to:**
 - Integrate the harmful effects of tobacco consumption into their educational curricula
 - Enforce and maintain smoke-free campuses and monitor the efficiency of such policy on smoking attitudes and behaviours of students.
 - Offer free tobacco cessation programs for students from all professions.
- **Hospitals and Medical Institutions to:**
 - Train current and future healthcare professionals on providing adequate Tobacco Consumption counselling to patients whenever it is needed.



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- Increase referrals to smoking cessation programs after conducting the appropriate tobacco consumption assessment of the patient.
- Evaluate the risk of secondhand smoke, especially among patients who are more vulnerable, and provide counselling to family members of people who consume tobacco products.
- Offer free smoking cessation programs to all groups with a specific focus on vulnerable groups and work on increasing awareness of the issue.
- Establish a smoking cessation program within the hospital for easier and more practical referrals.
- **Social and Mass Media to:**
 - Stop the promotion of tobacco and tobacco-containing products on various (social) media outlets.
 - Increase viewing time of healthcare professionals raising awareness of the dangers of smoking and the importance of cessation.
 - Facilitate the promotion of smoking cessation and quitting programs among their outlets with all the needed details and information.
- **IFMSA National Member Organisations to:**
 - Advocate for addressing tobacco consumption by implementing activities for different target groups, adopting policies and making statements in relevant local and national meetings and discussions
 - Meaningfully engaging in the design, implementation, follow up and evaluation of tobacco control policies on local, national, regional and international levels.
 - Work with relevant stakeholders on local and national levels through sharing of resources, technical knowledge, research and initiatives to address this issue on a holistic level.
 - Implementing and participating in research projects on knowledge, attitudes, and practices among youth and medical students to guide prevention and cessation strategies.

POSITION PAPER

Background information:

Cigarette smoking and other forms of tobacco contribute to a large and growing global public health burden. With more than 8 million deaths per year due to direct tobacco use and 1.2 million deaths of non-smokers per year linked to exposure to secondhand smoke, tobacco kills up to half of the people consuming it. [1] Based on current smoking trends, yearly tobacco deaths are estimated to rise up to 10 million per year by 2030. The 21st century is likely to witness one billion tobacco deaths, with most deaths occurring in low-income countries. For comparison, the 20th century saw 100 million tobacco deaths, of which most occurred in Western countries and in former socialist economies. [2]

Discussion:

Forms of Tobacco Consumption:

Cigarette smoking is the most common form of tobacco consumption used globally. Other forms of tobacco products include waterpipe tobacco, various smokeless tobacco products, cigars, cigarillos, roll-your-own tobacco, pipe tobacco, bidis and kreteks. [1] In addition, recently, new alternative forms of tobacco consumption have arisen, such as e-cigarettes. However, much research is still needed on the impact of these vaping devices as, according to current research, e-cigarettes have the potential to benefit some people and harm others. Therefore scientists still have a lot to learn about them, including whether they are effective for quitting smoking. [3] In addition, research so far suggests that vaping is less harmful than combustible cigarettes but can still lead to nicotine addiction and increased risk for addiction to other drugs. In addition, it also exposes the lungs to a number of chemicals, including those added to e-liquids and other chemicals produced during the heating/vaporising process. Therefore, more research is required to decide if vaping nicotine can be as effective as smoking cessation aids already approved by the FDA. [4]

In conclusion, tobacco consumption can take place through smoking, chewing, or sniffing. [5] In addition, if we are to classify tobacco consumption into smokeless and smoking, smokeless would include moist snuff, dry snuff and chewing tobacco, while smoking tobacco includes cigarettes: both roll-your-own and manufactured, in addition to cigars, bidis, kreteks, water pipes, pipes and sticks. [6] Additionally, new forms of tobacco consumption would include electronic nicotine delivery systems (ENDS), heated tobacco products (HTPs) and oral nicotine products (ONPs). Those new forms increased in prevalence as a result of increased promotion by the tobacco industry due to declines in cigarette smoking prevalence in many countries. These new products continue to evolve over time, where some of them are now able to deliver nicotine at levels comparable to cigarettes and may serve as effective alternatives for smokers. However, specific products, especially ENDS, have also appealed to youth and non-smokers, increasing concerns about expanding nicotine use (and possibly nicotine addiction). [7].

Determinants of Tobacco Consumption

The discussion around inequity connected to social, economic, and political variables (such as gender, age, income, governance, and globalisation) constitute the basis of the health impact pyramid. These lead to disparities in tobacco use and impede its cessation and control. [8]

Biological or Genetic Determinants

Nicotine, a psychoactive chemical contained in tobacco products, is regarded to be a primary contributor to tobacco addiction. Most smokers take regular quantities of nicotine from day to day, implying that they titrate their nicotine dose to obtain desired effects. Nicotine is metabolised extensively in the body, chiefly by the cytochrome P450 enzyme CYP2A6 in the liver. Because the rate at which nicotine is removed is regulated by CYP2A6 activity, genetic changes in the CYP2A6 enzyme may have an influence on smoking habit and dependency. Variations in nicotine reward and pleasure circuits are another genetic component that may lead to tobacco addiction. [9]

A number of studies investigated the link between gene variations in neurotransmitter systems and the development of tobacco addiction. Various components of the dopaminergic receptors (i.e., DRD2 and SLC6A3), opioidergic receptors (i.e., OPRM1), nicotinic receptors (i.e., CHRNA4 and CHRN2), and metabolic pathways (i.e., CYP2D6 and CYP2A6;) have been found to be associated. The scientific

literature also contains reports of particular genomic areas linked as smoking susceptibility indicators. Studies reported statistically significant but minor absolute relationships. [9]

Tobacco dependency may also be regulated by gene-environment interactions, according to certain theories. Tobacco addiction, like many malignancies, has complex genetic traits (e.g., gene-gene and gene-environment interactions, as well as phenotypic and genotypic variability). It has been demonstrated that the potential impact on preventing regular tobacco use, depending on the nature of the gene-environment interaction (e.g., additive, multiplicative, or synergistic), can be quite high, providing substantial motivation for the pursuit of an integrative understanding of how genes and the environment interact to increase susceptibility to tobacco use. [9]

Social, Economic and Political Determinants

Compared to people in the upper-income quintiles, people in the lower-income quintiles smoke more. These differences are much more pronounced in lower-middle income countries, which account for over 80% of the world's smokers. Tobacco use is common among low-income people for two reasons: (i) poverty negatively correlates with power and influence in policy formulation, effectively leaving people without a voice; and (ii) unplanned, poverty-driven urbanisation has resulted in the proliferation of slums and other informal settlements, where tobacco use is the norm. [8]

Smoking is far more frequent in males than females above the age of 15, according to global statistics, but gender disparities are less noticeable in adolescents. The key factors related to male adult tobacco consumption include a vicious cycle of poor education and low income, as well as individual and transgenerational social psychology that promotes smoking as a masculinity model. Smoking may be viewed as a way to cope with everyday problems and related discomfort of a person who lacks self-confidence. This feeling of having no control over life, which is founded on collective social disadvantage, may incline males to tobacco beginning and persistence. [8]

At least 40% of children grow up in households where one or both parents use tobacco products. As a result, parental role models continue to reinforce any pre-existing teenage proclivity for tobacco use when parental supervision may weaken during puberty. Despite the fact that the father or other male family members' smoking habits have a bigger association with the smoking habits of their children than maternal smoking habits, public health initiatives, such as anti-smoking social networks and campaigns, must be directed to all family members. [8]

Through corporate social responsibility (CSR), which has the primary goal of creating corporate political engagement inside a country, the tobacco industry affects political decisions and policy making. CSR on health awareness campaigns for HIV, hepatitis, and contaminated water (among others) in low-middle income countries (LMIC) has masked the latter in order to shift attention away from the repercussions of tobacco usage. For example, the tobacco industry has attempted to create an ecologically good image through CSR, which obliged contracted farmers to grow Eucalyptus for their tobacco curing needs in order to avoid further deforestation. However, this tree is a heavy water user, which rapidly diminishes water levels and burns the soil. [8]

Governments of tobacco-producing nations have a harder time limiting the negative impact of the tobacco industry since their foreign profits are so intimately linked to it, and many of their citizens work in this industry. If all factors such as farmer debt, impaired health, and environmental aggravation are (cumulatively) taken into account, global advocacy proponents and economists should aid governments in becoming more aware of the net cost generated by the tobacco business. Crop diversification, regulatory enforcement, and compliance with obligatory tobacco control and preventive measures all require urgent political push and help from international agencies.[8]

Tobacco Consumption and Vulnerabilities

Determinants associated with smoking status

Tobacco consumption is more prevalent amongst certain groups which are considered more vulnerable to starting smoking. [10] Smoking disproportionately affects more vulnerable groups such as the

socioeconomically disadvantaged, the homeless, racial minorities, the LGBTQIA+ community and those suffering from mental illness and substance use disorders, according to the Smoking Cessation Leadership. [11]

Lower Socio-economic Status

The higher prevalence of smoking among low socioeconomic status (SES) groups demonstrates the correlation between the social context and health behaviour. [12][13][14] This higher prevalence can be attributed to an amalgamation of factors, including the tobacco industry's targeted marketing, positive norms towards smoking within the social contexts of individuals, the relatively easy access to cigarettes, higher nicotine dependence, life stressors, psychological differences, and lower adherence to smoking cessation treatments. [15] Low SES smokers might also be less likely to quit if their social network has a higher prevalence of smokers as well, which aims to reinforce positive norms surrounding smoking. [16][17][18]

LGBTQIA+ Community

Smoking prevalence amongst lesbian, gay, bisexual, and transgender (LGBTQIA+) individuals is considerably higher than in the general population, according to several studies which investigated the prevalence of risky behaviors among the LGBTQIA+ community. This health disparity likely begins during the adolescence period of individuals belonging to a sexual minority, when smoking initiation arises earlier. It also continues at higher degrees when compared to their heterosexual peers. This prevalence can be attributed to several factors, the most prominent of which is victimisation. Victimisation, such as verbal or physical harassment due to an individual's LGBTQIA+ status, was found to be correlated with smoking status. LGBTQIA+ youth suffering from high victimization levels had increased smoking levels and other health risk behavior compared to their heterosexual peers. Interviews with LGBTQIA+ youth about tobacco consumption have highlighted the perceived benefit of smoking in coping with stressors and managing stress reactions. A larger supportive social environment for LGBTQIA+ individuals was found to be correlated with reduced tobacco use. Such environments included the presence of gay-straight alliances and school nondiscrimination policies specifically protecting LGBTQIA+ students. [19]

Vulnerabilities increased by Tobacco Consumption

Smoking risks play a substantial role in increasing other health disparities. Multiple studies reported that tobacco caused about two-thirds of the difference in risk of death across the social class in males aged 35–69 years. Moreover, tobacco consumption is responsible for nearly twice as many cancer-related cases in lower income groups compared to higher income groups. There are great disparities among socio-economic and racial groups in the prevalence of tobacco-related cancer incidences and mortality, as well as access to and quality of cancer treatment. Even though the predominance of smoking is decreasing over time, its consequences on inequalities have slightly risen. This is caused by the high prevalence of smoking among the lowest socio-economic groups and its intense effects on the health of these communities. It is estimated that tobacco consumption will increase socioeconomic disparities in all-cause mortality in the United States until at least 2045 for males and later for females as well. [20]

Vulnerable groups to Tobacco Consumption

Children

Children are among the groups who are at increased vulnerability, especially when exposed to secondhand smoke (SHS). [21] Evidence collected from different countries has shown that children living with smokers are at heightened risk of premature death and disease from exposure to SHS. [22] Children with comorbidities were also shown to be affected to a higher degree by SHS exposure. Studies demonstrated that asthmatic children subjected to SHS in have greater asthma severity and more frequent asthmatic exacerbations which can be life threatening, [23] with some studies suggesting an increased risk of asthma in children with smoker mothers [24] among other pulmonary conditions including bronchitis and pneumonia. [25]

Pregnant Women

Studies showed that smoking and/or exposure to secondhand smoke, in the prenatal period, can negatively affect the development of the foetus where SHS exposure in utero appeared to be an important risk factor to global cognitive functioning impairment and delayed neurodevelopment over the first few years of life. Given the large number of children affected by SHS exposure worldwide, these deficits may have a substantial overall impact on the wider population. [26] A number of studies have demonstrated strong, dose-related associations between maternal smoking and infant death. The clearest correlations were observed when the mother was a smoker during pregnancy as well as in the postnatal period and maternal smoking increased the danger for sudden infant death syndrome in most studies. [27][28]

Tobacco Consumption Advocacy

Health Prevention and Promotion

Effective population-based preventive interventions on tobacco control include but are not limited to increase in tobacco price, anti-tobacco mass media campaigns and smoke-free policies. It has been shown that the implementation and enforcement of these strategies, both individually and as part of a comprehensive tobacco prevention and control effort, can effectively contribute to a reduction in smoking initiation and consumption among different generations. [29]

Health Education

Health education reflected its effectiveness in peer-led educational interventions that aimed to prevent smoking uptake in secondary schools. It has been evident that due to the success of peer education programs in achieving a sustainable reduction in uptake of regular smoking in adolescents for 2 years after their delivery, it is crucial to consider relevant factors before implementation. These factors include selection, training, supervision, type of intervention, and the relationship between peer educators and the target groups. This arises from the fact that the right environment and motivation of peer educators are necessary for successful implementation. [30]

Role of Youth

Each day, approximately three thousand 12- to 17- year-olds become regular smokers and thus become the next generation of adult smokers. [2] Factors contributing to youth smoking include cultural traditions, tobacco's easy accessibility and moderate pricing, peer and family influences, and tobacco companies' advertisements and promotional activities. [31] Hence, efforts to prevent youth smoking have focused primarily on reducing either youth supply (the public health approach) or youth demand (the health psychology approach), with some evidence suggesting that supply-side interventions may be more cost effective. [30]

Role of Media

A systematic review by Bala et al., has assessed the effectiveness of mass media interventions in decreasing smoking among adults. The results of this review have shown that comprehensive tobacco control programs, including mass media campaigns, can be effective in modifying smoking behaviour in adults. In addition, it has been shown that the intensity and duration of campaigns may also influence effectiveness. [30]

Tobacco Consumption in Medical Education

Training medical students in tobacco consumption prevention and cessation skills is needed to ensure the presence of competent generations of physicians who are empowered to address the high levels of morbidity and mortality associated with tobacco consumption. For example, a curriculum on tobacco consumption could improve relevant knowledge, attitudes and self-confidence and can be applied in students' early clinical years' experiences. The existing lack of physicians' attention to risky and unhealthy behaviours, the high mortality and morbidity associated with tobacco consumption, and the lack of data to support the traditional curricular model reflect the importance of implementing training on promoting behaviour change at the early stage of medical curricula. [32]

Tobacco Consumption and the spheres of health

Physical Health

Tobacco use is the leading cause of preventable disease, disability, and death worldwide. It has been linked to cardiovascular disease, multiple cancers, lung diseases, and other illnesses as well. Smokers are exposed to a toxic mix of more than 7,000 chemicals when they inhale cigarette smoke; the effects of which can threaten the physical health of a person in multiple ways. [33]

More than 50 years of epidemiological studies on smoking-related diseases have led to three key messages for individual smokers worldwide

- The eventual risk of death caused by smoking is high, with about one-half to two-thirds of long-term smokers eventually being killed by their addiction.
- These deaths involve a substantial number of life years affected. About half of all tobacco-related deaths occur between the age group of 35 to 69, resulting in the loss of around 20 to 25 years of life, in comparison with the life expectancy of nonsmokers.
- Those adults who quit before middle age avoid almost all the harmful effects of long-term smoking. [34][35]

Globally around 80 percent of deaths among the 2.7 billion adults over 30 years of age involve cardiovascular, respiratory, or neoplastic disease. Smoking is associated with an increase in the frequency of many of these diseases, although important differences do seem to exist between and across populations. [36]

Cigarette smoke contains more than 7,000 compounds, of which at least 60 of which are known carcinogens. [37] Approximately more than 600 compounds are mixed with tobacco to enhance the flavour or absorption of nicotine. Upon inhaling this mixture of chemicals through smoke, there is induction of tissue injury and changes in the cellular environment that facilitate cellular proliferation and transformation into cancer cells. Notable, the compounds found in tobacco smoke also have the potential to silence tumour suppressor genes that prevent tumour growth in normal circumstances. [38] Nicotine and activation of systemic nicotinic acetylcholine receptors by various products that are found in tobacco are known to trigger cell survival pathways that prevent the death of mutated cells. Several studies demonstrate the capability of nicotine to increase cancer proliferation, angiogenesis, migration, and invasion, and decrease the effectiveness of conventional cancer treatments such as chemotherapy and/or radiotherapy. [39][40]

Smoking is responsible for at least 30 percent of all cancer deaths and 80 percent of deaths caused by lung cancer. Lung cancer, for which tobacco consumption in the form of smoking is the major risk factor, is the leading cause of cancer death in both males and females. Moreover, smoking is known to increase the risk of up to 18 types of cancers including leukaemia, head and neck cancers, cancers of the oesophagus, bladder, pancreas, kidney, liver, stomach, cervix, and ovaries and the uterus. Apart from that, smoking also worsens cancer outcomes. Worse survival among cancer patients who smoked or continue to smoke is seen in various types of cancers. There is also an increased risk of developing secondary malignancies in cancer patients who resort to smoking or other forms of tobacco consumption. [41][42]

Tobacco dependence and chronic diseases are highly prevalent and each is the top cause of morbidity and mortality globally. [43] Tobacco use is also proved to be a modifiable risk factor for many chronic diseases which include cardiovascular disease, diabetes, and inflammatory diseases. [44] Compared to nonsmokers, current and former smokers were 5.5 times a higher risk of developing chronic lung disease, 2.8 times more likely to have heart disease, 1.7 times more likely to have diabetes, 1.3 times more likely to develop hypertension, 1.2 times more likely to have hypercholesterolemia, and 1.4 times more likely to have cancer. [45] Over the past three decades, various national and international researchers have deemed cigarette smoking one of the leading risk factors for developing coronary heart disease. [46] Smoking cigarettes is the main cause of Chronic Obstructive Pulmonary Disease, with around 85–90% of COPD cases attributable to consumption of tobacco through smoking. [47] Smoking is also known to double the risk of stroke for adults (both men and women) compared to non-smokers. [48]

Smoking is also known to affect fertility. Studies prove that smoking can contribute to impotence and erectile dysfunction in males. [49] Smoking during pregnancy is also known to cause harm to the foetus.

[50] They include preterm birth, associated health problems with premature birth (such as damage to the developing lungs and brain), birth defects, and increased risk for sudden infant death syndrome. [51]

Mental Health

The World Health Organisation (WHO) defined mental health as the “state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. [52]

Individuals with substance abuse disorders (SUD) (including harmful tobacco consumption) are also diagnosed with mental health disorders and vice versa. SUD can also co-occur at an extremely high level with mental health issues like depression, bipolar disorders as well as attention-deficit hyperactivity disorder (ADHD). Moreover, patients with schizophrenia are usually at a higher level of alcohol, tobacco and drug use disorders compared to the general population. [53] Substance use, including tobacco, is highly related to a broad range of negative influences on the young group's mental and physical health and also on their short and long-term well-being. The reason why smokers are more likely than nonsmokers to experience depression, anxiety, and other mental health conditions is uncertain, there is a surprising lack of research in the behavioural domain, and more research is needed for the same. However, existing evidence shows that tobacco-related medical illness may be the leading cause of death in the population living with mental health and addictive disorders. [54]

Efforts against Tobacco Consumption on Global and National Levels

Tobacco consumption in its various forms is a worldwide problem that needs international collaboration in order to put in place measures that will successfully regulate and eventually eliminate the current pandemic. [55]

Global Efforts

The World Health Organisation's Framework Convention on Tobacco Control (WHO FCTC) is the first international treaty drafted by WHO and endorsed by 180 countries. The World Health Assembly approved it on May 21, 2003, and it went into effect on February 27, 2005. It has now become one of the most universally accepted and ratified treaties in UN history. [55][56]

The World Health Organisation's Framework Convention on Tobacco Control (WHO FCTC) was created in response to the globalisation of the tobacco epidemic and is an evidence-based convention that emphasises everyone's right to the best possible health. [56]

The treaty's aim is to offer the essential tools for supporting effective tobacco-control legislative changes. The pact addressed both demand and supply, including provisions for tobacco product price and taxes, as well as education and awareness. Much focus was placed on tobacco advertising and sponsorship in order to reduce tobacco dependency and protect passive smokers in public and at work from the hazards of secondhand smoke. [55]

National efforts

The WHO FCTC strongly suggests that every Party shall create and sufficiently fund a national tobacco control programme (NTCP) or coordinating structure capable of building capacity to execute effective and sustainable policies to reverse the tobacco epidemic. Strategic tobacco control planning and policy making should be led by the ministry of health or an equivalent government body, with other ministries or agencies reporting to this centralised authority. Tobacco control programmes should be linked into larger health and development plans. [57]

In nations with federal political systems, where governing powers are divided between centralised and regional political entities, subnational tobacco control implementation is critical, since it allows for more flexibility in policy formation and programme implementation. NTCPs should also guarantee that policies and programmes aimed at eliminating socioeconomic disparities may successfully target demographic segments with disproportionately high rates of tobacco use. Tobacco control requires active participation from civil society, excluding The tobacco industry and its allies as they cannot be legitimate stakeholders

in tobacco control initiatives. Therefore, NTCPs require continual support from partners inside the government as well as other elements of civil society. [57]

One out of every four nations has a national agency responsible for tobacco control targets with at least five full-time equivalent staff members. Because many of these nations have big populations, an organisation like this benefits almost two-thirds of the world's population. A further 120 nations (representing 34% of the global population) have an official agency tasked with tobacco control initiatives, although with less or unknown employees. There are only 15 countries without a national agency. [57]

Anti-smoking legislation has resulted in significant decreases in secondhand smoke exposure. Nonsmokers living in nonsmoking families in Scotland have seen their mean cotinine concentrations drop by 49% . Nonsmokers living in smoking families, on the other hand, saw a minimal drop. Smoke-free housing laws might be a good way to reduce secondhand smoke exposure in these people. [55]

An original attempt in Spain to protect workers from secondhand smoke by allowing employers to designate smoking spaces was only partially successful. Nonsmoking staff at pubs and restaurants where smoking was permitted were exposed to secondhand smoke at levels equivalent to those before the ban. Cotinine levels, on the other hand, reduced by 56% in workplaces where smoking was completely forbidden. Further changes to the law have resulted in a 40-50 percent reduction in cigarette usage. [55]

Tobacco Consumption Policies and laws

Tax hikes are one of the most effective ways to reduce cigarette demand and thereby limit smoking. Controlling tobacco pricing through taxes, it is said, minimises the number of premature deaths attributable to tobacco use while also reducing expenditures. The funds might be used to fund anti-smoking campaigns and cover health-care expenditures. Only 33 nations have imposed taxes equal to or greater than 75% of the product's value. Only 29 nations have outlawed all tobacco promotion, and one-third of WHO FCTC treaty signatories have no limits at all or only impose minimal ones. [55]

Smoke-free legislation is in force in 55 nations, affecting about 1.5 billion people, or 20% of the global population. In low- and middle-income nations, progress has been particularly impressive: since 2007, 35 low- and middle-income countries have enacted complete smoke-free legislation encompassing all kinds of public venues. However, implementing smoke-free laws may be difficult. Only 22 (40 percent) of the 55 nations with comprehensive smoke-free legislation have strong compliance. Smoke-free legislations are particularly difficult to enforce in cafés, taverns, and bars. Smoke-free laws enforcement should be simple and cost-effective. WHO recommends simple steps such as mass media campaigns, a professional, dedicated, and independent enforcement agency, the establishment of fines for violators, and frequent monitoring of new legislation. [55]

Health warning labels

Large visual health warning labels protect more individuals than any other method to monitor tobacco use and prevention policies (MPOWER-Monitoring, Protect, Offer help, Warn about dangers, Enforce regulatory interventions, and Raise taxes). For about 3.5 billion people in 78 countries (nearly half of the world's population), strong, graphic warnings on tobacco product packets are in place (47 percent). However, this policy intervention is a victim of its own success in certain ways. The tobacco industry often threatens governments with legal action because these warning labels contain vivid visuals that effectively warn about the hazards of cigarette use. To avoid or delay implementation, the sector presents a variety of misleading assertions regarding the expense and impact of the law, as well as trademark rights, and utilises them to try to oppose robust health warning legislation. [57]

Plain packaging

Plain packaging (also called standardised packaging) is defined as a measure “to restrict or prohibit the use of logos, colours, brand images or promotional information on packaging other than brand names and product names displayed in a standard colour and font style”. Plain packaging decreases the appeal

of tobacco products, removes the impact of tobacco packaging as a form of advertising and marketing, limits the use of false product description language, and improves the efficacy of health warnings. [57]

Bans on tobacco advertising, promotion and sponsorship

Tobacco advertising, promotion, and sponsorship (TAPS) bans can greatly limit the tobacco industry's capacity to market its products, protecting both new tobacco users and current tobacco users who wish to stop. These prohibitions, however, must be extensive and thoroughly implemented in order to be effective. Because incomplete bans prompt the tobacco industry to focus its efforts and financial resources on marketing and promotion activities that are permitted or for which prohibitions are not well enforced. [57]

References:

1. World Health Organization. (n.d.). Tobacco. World Health Organization. Retrieved July 1, 2022, from <https://www.who.int/news-room/fact-sheets/detail/tobacco>
2. Jha P, Chaloupka FJ, Moore J, et al. Tobacco Addiction. In: Jamison DT, Breman JG, Measham AR, et al., editors. Disease Control Priorities in Developing Countries. 2nd edition. Washington (DC): The International Bank for Reconstruction and Development / The World Bank; 2006. Chapter 46. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK11741/> Co-published by Oxford University Press, New York.
3. Centers for Disease Control and Prevention. (2021, July 12). Electronic cigarettes. Centers for Disease Control and Prevention. Retrieved July 1, 2022, from https://www.cdc.gov/tobacco/basic_information/e-cigarettes/index.htm
4. U.S. Department of Health and Human Services. (2022, February 10). Vaping devices (electronic cigarettes) DrugFacts. National Institutes of Health. Retrieved July 1, 2022, from <https://nida.nih.gov/publications/drugfacts/vaping-devices-electronic-cigarettes>
5. Cigarettes and other tobacco products drugfacts [Internet]. National Institutes of Health. U.S. Department of Health and Human Services; 2022 [cited 2022Jul19]. Available from: <https://nida.nih.gov/publications/drugfacts/cigarettes-other-tobacco-products#:~:text=People%20can%20smoke%2C%20chew%2C%20or,snuff%20can%20also%20be%20sniffed>
6. Guide for the slipta in the African region - who [Internet]. [cited 2022Jul19]. Available from: <https://www.afro.who.int/sites/default/files/2017-06/guide-for-the-slipta-in-the-african-region0711115.pdf>
7. O'Connor R, Schneller LM, Felicione NJ, Talhout R, Goniewicz ML, Ashley DL. Evolution of tobacco products: Recent history and Future Directions [Internet]. Tobacco Control. BMJ Publishing Group Ltd; 2022 [cited 2022Jul19]. Available from: <https://tobaccocontrol.bmj.com/content/31/2/175>
8. Mentis AF. Social determinants of tobacco use: towards an equity lens approach. Tobacco Prevention & Cessation. 2017;3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7232809/>
9. Feiler BK, Caron L, Illes J, Cheng LS. Environmental and Genetic Determinants of Tobacco Use: Methodology for a Multidisciplinary, Longitudinal Family-Based Investigation1. Cancer Epidemiol Biomarkers Prev. 2003 Oct;12(10):994-1005. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2587265/>
10. Hughes, J. R. (2020). An update on hardening: a qualitative review. Nicotine and Tobacco Research, 22(6), 867-871.
11. Vulnerable populations. Smoking Cessation Leadership Center. (2020, May 15). Retrieved July 1, 2022, from <https://smokingcessationleadership.ucsf.edu/vulnerable-populations>
12. Cavelaars AE, Kunst AE, Geurts JJ, Crialesi R, Grötvedt L, Helmert U, Lahelma E, Lundberg O, Matheson J, Mielck A, Rasmussen NK. Educational differences in smoking: international comparison. Bmj. 2000 Apr 22;320(7242):1102-7.
13. Huisman M, Kunst AE, Mackenbach JP. Educational inequalities in smoking among men and women aged 16 years and older in 11 European countries. Tobacco control. 2005 Apr 1;14(2):106-13.
14. Jarvis MJ, Wardle J. Social patterning of individual health behaviours: the case of cigarette smoking. Social determinants of health. 1999;2:224-37.
15. Hiscock R, Bauld L, Amos A, Fidler JA, Munafò M. Socioeconomic status and smoking: a review. Annals of the New York Academy of Sciences. 2012 Feb;1248(1):107-23.
16. Hiscock R, Judge K, Bauld L. Social inequalities in quitting smoking: what factors mediate the relationship between socioeconomic position and smoking cessation?. Journal of public health. 2011 Mar 1;33(1):39-47.
17. Jarvis MJ. Why people smoke. Bmj. 2004 Jan 29;328(7434):277-9.
18. Kotz D, West R. Explaining the social gradient in smoking cessation: it's not in the trying, but in the succeeding. Tobacco control. 2009 Feb 1;18(1):43-6.
19. Burkhalter, J. E. (1970, January 1). Smoking in the LGBT community. SpringerLink. Retrieved July 1, 2022, from https://link.springer.com/chapter/10.1007/978-3-319-15057-4_5#ref-CR51

20. Tobacco in Australia. (n.d.). . Tobacco in Australia. Retrieved July 1, 2022, from https://www.tobaccoinaustralia.org.au/chapter-9-disadvantage/9-3-contribution-of-smoking-to-health-inequality#_ENREF_24
21. U.S. Department of Health and Human Services. The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2006
22. Wipfli H, Avila-Tang E, Navas-Acien A, Kim S, Onicescu G, Yuan J, Breyse P, Samet JM. Secondhand smoke exposure among women and children: evidence from 31 countries. *American journal of public health*. 2008 Apr;98(4):672-9.
23. Chen R, Clifford A, Lang L, Anstey KJ. Is exposure to secondhand smoke associated with cognitive parameters of children and adolescents?-a systematic literature review. *Annals of epidemiology*. 2013 Oct 1;23(10):652-61.
24. Martinez FD, Cline M, Burrows B. Increased incidence of asthma in children of smoking mothers. *Pediatrics*. 1992 Jan;89(1):21-6.
25. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014
26. Chen R, Clifford A, Lang L, Anstey KJ. Is exposure to secondhand smoke associated with cognitive parameters of children and adolescents?-a systematic literature review. *Annals of epidemiology*. 2013 Oct 1;23(10):652-61.
27. Dybing E, Sanner T. Passive smoking, sudden infant death syndrome (SIDS) and childhood infections. *Human & experimental toxicology*. 1999 Apr;18(4):202-5.
28. Liebrechts-Akkerman G, Lao O, Liu F, van Sleuwen BE, Engelberts AC, L'Hoir MP, Tiemeier HW, Kayser M. Postnatal parental smoking: an important risk factor for SIDS. *European journal of pediatrics*. 2011 Oct;170(10):1281-91.
29. CDC(2022) Tobacco Control Interventions: Health Impact in 5 Years. Health System Transformation. <https://www.cdc.gov/policy/hst/hi5/tobaccointerventions/index.html>
30. Golechha M. (2016). Health Promotion Methods for Smoking Prevention and Cessation: A Comprehensive Review of Effectiveness and the Way Forward. *International journal of preventive medicine*, 7, 7. <https://doi.org/10.4103/2008-7802.173797>
31. Prokhorov, A. V., Winickoff, J. P., Ahluwalia, J. S., Ossip-Klein, D., Tanski, S., Lando, H. A., ... & American Academy of Pediatrics Center for Child Health Research. (2006). Youth tobacco use: a global perspective for child health care clinicians. *Pediatrics*, 118(3), e890-e903.
32. Pati, S. (2014). Putting tobacco cessation and prevention into undergraduate medical education. *International journal of preventive medicine*, 5(1), 69.
33. U.S. Department of Health and Human Services (USDHHS). A Report of the Surgeon General: How Tobacco Smoke Causes Disease: What It Means to You (Consumer Booklet). Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2010
34. Doll R., Peto R., Boreham J., Sutherland I. Mortality in Relation to Smoking: 50 Years' Observation on Male British Doctors. *British Medical Journal*. 2004;328(7455):1519–28.
35. Peto, R., A. D. Lopez, J. Boreham, and M. Thun. 2003. *Mortality from Smoking in Developed Countries*. 2nd ed. Oxford, U.K.: Oxford University Press.
36. Gajalakshmi, C. K., P. Jha, K. Ranson, and S. Nguyen. 2000. "Global Patterns of Smoking and Smoking-Attributable Mortality." In *Tobacco Control in Developing Countries*, ed. P. Jha and F. J. Chaloupka. Oxford, U.K.: Oxford University Press
37. HHS. How tobacco smoke causes disease: The biology and behavioral basis for smoking-attributable disease. A Report of the Surgeon General. Atlanta, GA: Office on Smoking and Health; 2010b.
38. Takeshima Y, Seyama T, Bennett WP, Akiyama M, Tokuoka S, Inai K, Mabuchi K, Land CE, Harris CC. p53 mutations in lung cancers from non-smoking atomic-bomb survivors. *Lancet*. 1993;342:1520–1521

39. Warren GW, Rangnekar VM, McGarry R, Arnold SM, Kudrimoti M. Pathways of Resistance: Potential Effects of Nicotine on Cancer Treatment Response. *International Journal of Radiation Oncology Biology Physics*. 2008;72:S715
40. Warren GW, Romano MA, Kudrimoti MR, Randall ME, McGarry RC, Singh AK, Rangnekar VM. Nicotinic modulation of therapeutic response in vitro and in vivo. *International Journal of Cancer*. 2012c;131(11):2519–2527.
41. ACS. Cancer facts & figures 2012. 2012. [August 21, 2012]. <http://www.cancer.org/acs/groups/content/@epidemiologysurveillance/documents/document/acspc-031941.pdf>
42. Secretan B, Straif K, Baan R, Grosse Y, El Ghissassi F, Bouvard V, Benbrahim-Tallaa L, Guha N, Freeman C, Galichet L, Cogliano V. A review of human carcinogens—Part E: Tobacco, areca nut, alcohol, coal smoke, and salted fish. *Lancet Oncology*. 2009;10(11):1033–1034.
43. World Health Organization. *Global Status Report on Noncommunicable Diseases 2010*. Geneva: World Health Organization; 2011.
44. U.S. Department of Health and Human Services. *How Tobacco Smoke Causes Disease: The Biology and Behavioral Basis for Smoking-Attributable Disease: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2010
45. Simpson, J., & Despain, L. (n.d.). Tobacco and chronic disease. Wyoming Tobacco Prevention Control Evaluation. Retrieved July 1, 2022, from <https://wysac.uwyo.edu/wyomingtobacco/2019/09/19/tobacco-and-chronic-disease-2/>
46. Roger, V. L., Go, A. S., Lloyd-Jones, D. M., Adams, R. J., Berry, J. D., Brown, T. M., ... Wylie-Roset, J. (2011). Heart disease and stroke statistics. *Circulation Journal of the AHA*. 123, E18-e209. <http://circ.ahajournals.org/content/123/4/e18.full.pdf+html>.
47. American Lung Association. (2013b). Trends in COPD (chronic bronchitis and emphysema): Morbidity and mortality. <http://www.lung.org/assets/documents/research/copd-trend-report.pdf>
48. National Stroke Association. (2013). Tobacco use & smoking. <http://www.stroke.org/site/PageServer?pagename=smoking>
49. U.S. Department of Health and Human Services. *Let's Make the Next Generation Tobacco-Free: Your Guide to the 50th Anniversary Surgeon General's Report on Smoking and Health*. pdf icon[PDF – 795KB]external icon Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014
50. National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. *Reports of the Surgeon General. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General*. Centers for Disease Control and Prevention (US); 2014.
51. National Cancer Institute. *Smoking, Labor, & Delivery: It's Complicated*: <https://women.smokefree.gov/pregnancy-motherhood/quitting-while-pregnant>
52. World Health Organization. (n.d.). Mental health: strengthening our response. World Health Organization. Retrieved July 1, 2022, from <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response#:~:text=Mental%20health%20is%20a%20state,to%20his%20or%20her%20community>
53. U.S. Department of Health and Human Services. (2021, April 13). Part 1: The connection between Substance Use Disorders and mental illness. National Institutes of Health. Retrieved July 1, 2022, from <https://nida.nih.gov/publications/research-reports/common-comorbidities-substance-use-disorders/part-1-connection-between-substance-use-disorders-mental-illness>
54. Mackowick, K.M., Lynch, M.J., Weinberger, A.H. et al. Treatment of Tobacco Dependence in People With Mental Health and Addictive Disorders. *Curr Psychiatry Rep* 14, 478–485 (2012). <https://doi.org/10.1007/s11920-012-0299-2>
55. Perez-Warnisher MT, de Miguel MP, Seijo LM. Tobacco use worldwide: legislative efforts to curb consumption. *Annals of global health*. 2018;84(4):571. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6748295/>
56. World Health Organization. (n.d.). *Who framework convention on tobacco control overview*. World Health Organization. Retrieved July 1, 2022, from <https://fctc.who.int/who-fctc/overview>

57. Monitoring tobacco use and prevention policies - who. (n.d.). Retrieved July 1, 2022, from <https://apps.who.int/iris/bitstream/handle/10665/255874/9789241512824-eng.pdf>