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Pakistan Journal of Chest Medicine

Official journal of Pakistan Chest Society



China's Tobacco Smoking Epidemic: Prevalence, Illness Load, Obstacles, and Future Plan

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Article History:

Date Received: Feb 06, 2024
Accepted: Jun 20, 2024
Published: Sep 02, 2024

Author Contributions:

ARK conceived idea, GJ SB drafted the study, SB LL collected data, FLU ARK critical reviewed manuscript. All approved final version to be published.

Declaration of conflicting interests:

The authors declare that there is no conflict of interest.

How to cite this article:

Khoso AR, Jintu GU, Bhutto S, Li L, Ujuagu FL. China's Tobacco Smoking Epidemic: Prevalence, Illness Load, Obstacles, and Future Plan. Pak J Chest Med. 2024;30(03):165-171.

ABSTRACT

China accounts for almost one-third of worldwide tobacco production and consumption, and despite current tobacco control efforts, the smoking rate remains frighteningly high, with 350 million smokers and 740 million passive smokers. Alarming, more young people and women are becoming smokers. With 1.2 million fatalities linked to tobacco use each year, the related mortality rate is startling, and estimates indicate that number will rise to 2 million by 2025. The tobacco industry's strong opposition, sociocultural factors that encourage smoking start, a lack of public knowledge about the dangers of smoking, and insufficient government backing are all blamed for the ineffectiveness of the present tobacco control policies. Government commitments are required in order to carry out effective and urgent intervention activities. It is imperative to take comprehensive action at several levels, such as lowering the availability of tobacco products, raising taxes on tobacco products, improving public health education, restricting tobacco advertising, lowering secondhand smoke exposure, and offering strong support for quitting smoking. To address this important public health issue, the healthcare community should take the lead in anti-tobacco initiatives and actively participate in smoking cessation programs.

Keywords: Smoking Epidemic; Prevalence; Diseases

Introduction

China, which is acknowledged as the biggest producer and user of tobacco in the world, has a lot of difficulties when it comes to the health risks and prevalence of tobacco use.¹ Approximately 2.66 million tons of tobacco leaves are produced in the nation each year, making up one-third of the world's total production.² Furthermore, China consumes around 30% of the world's smokes. This puts the country in a critical position to confront the significant threats tobacco smoking poses to public health.³ China is now dealing with a significant tobacco smoking pandemic characterized by a high prevalence, a significant burden of sickness, and ongoing difficulties. With over 300 million smokers living in the nation, it is home to the world's highest smoking population, with dire effects for public health.⁴ The epidemic of tobacco use has resulted in a marked rise in illnesses associated with tobacco use, including respiratory problems, cardiovascular disease, and lung cancer.⁵ Progress in the fight against smoking is hampered by a number of issues, such as cultural norms, a lack of knowledge, and the tobacco industry's financial interests. China is developing comprehensive plans for the future that take a multifaceted approach to addressing this urgent public health issue.⁶ These plans include stricter tobacco control laws, public awareness campaigns, and more funding for healthcare facilities to address the significant negative effects of smoking on both individuals and society as a whole.⁷ The epidemiology of smoking, its effects on morbidity and mortality, the state of tobacco control initiatives in China, related issues, and potential solutions are all included in this paper using diverse search engines including, Google scholar, Science Direct, PubMed, Different reports of WHO.

Aspects of China's Smoking Epidemic

The general persistently high rate of smoking

One noteworthy aspect of China's smoking pandemic is the country's persistently high smoking prevalence.⁸ Throughout spite of continuous efforts to reduce tobacco use, smoking is still quite common throughout the nation. There were an estimated 250 million smokers in China in 1984, with 61% of males and 7% of women smoking. The number of smokers has increased to almost 350 million by 2020.⁹ In China, a startling 72% of people over 15 have been exposed to tobacco, including secondhand smoke (SHS).¹⁰ According to the Chinese Center for Disease Control and Prevention's, (2010) China Global Adults Smoking Survey (GATS), 53% of males who are 15 years of age or older now smoke.

Rising incidence among young adults, adolescents, and women

In the past, smoking rates among women and youth in China were lower, but there has been an alarming change. Over the past ten years, there has been a decline in the average age at which smoking begins and an increase in the prevalence of smoking among Chinese women.¹¹ According to a recent poll, 20% of women between the ages of 14 and 24 reported having ever smoked.¹² In 1988, smoking was reported sometimes by 34% of male junior high school students and 4% of female students in China. Compared to other school categories, vocational/technical high schools had a greater smoking rate, especially in lower-class southwestern cities.¹³ Many social and cultural reasons might be blamed for the rise in smoking rates among women, adolescents, and young adults. First of all, smoking is mistakenly seen as a sign of charisma, independence, and personal freedom. This misconception is furthered by marketing and advertising. Second, smoking has become a custom in Chinese social relations, where it is customary to gift cigarettes as a token of friendship, which promotes smoking initiation.¹⁴ Thirdly, smoking start is influenced by social shifts and stressors related to urban migration, especially for migratory workers from rural to urban areas.¹⁵ Taking these sociocultural aspects into account is essential for developing focused tobacco prevention programs.

Second Hand Smoke

Secondhand smoke (SHS) rates have been steadily rising in China due to conditions such as small living spaces, dense population, inadequate ventilation, and unenforced smoke-free laws. The country's 273 public sites were analyzed, and 91% of them contained airborne nicotine. This finding emphasizes how frequently SHS is exposed in public spaces.¹⁵ That between 50 and 72 percent of China's nonsmokers are exposed to secondhand smoke on a daily basis is concerning. It was projected that 740 million nonsmokers were exposed to secondhand smoke in 2010 alone. In a cross-sectional countrywide study of 15,540 Chinese individuals, it was found that between 2000 and 2001, 51.3% of female and 12.1% of male non-smokers had exposure to secondhand smoke at home, again would increase in 2050.¹⁶ Furthermore, SHS exposure was reported by 26.2% of female and 26.7% of male non-smokers in their places of employment.¹⁷ Women and children are more vulnerable to SHS, which is a cause for concern. Large cities like as Beijing, Shanghai, and Chengdu saw a staggering 82.5% of non-smoking women had SHS. Seventy-eight percent of the women surveyed in two urban cross-sectional studies reported having been exposed to secondhand smoke at work, home, or in other public places.

Remarkably, an estimated 180 million youngsters are exposed to SHS, highlighting the critical need for comprehensive tobacco control measures.¹⁸

Elevated frequency within the medical field

In China, the incidence of smoking among medical personnel is remarkably comparable to that of the general populace. According to recent surveys, between 31.9% and 38.7% of male physicians now smoke, with a greater incidence shown in surgical units as compared to other departments.¹⁹ On the other hand, although not insignificant, the prevalence of smoking is significantly lower among nurses. According to a 2003 poll, 2% of registered nurses currently smoked. The high rates of smoking among medical professionals can be a major obstacle to attempts to quit smoking and reduce tobacco use by spreading false information to the broader public.²⁰ Healthcare workers' smoking habits need to be addressed for both their personal health and because of their significant influence on the public's attitudes and smoking-related behaviors.

Implications of Tobacco Smoking on Health in China

Mortality linked to smoking

China has an alarmingly high smoking prevalence, and the accompanying fatality rate is rising. According to a countrywide prospective cohort research, smoking was a contributing factor in almost 673,000 fatalities among Chinese people in 2005.²¹ The most common causes of death were respiratory diseases (66,800), cardiovascular disease (146,200), and cancer (268,000) (Sun et al., 2020). In China, the number of fatalities linked to tobacco usage has increased to 1.2 million per year. By 2025, the number of tobacco-related fatalities in China might rise to 2 million annually, according to the World Health Organization.²² An estimate of RMB 22.9 billion, or around \$US 3.6 billion, was made for the direct hospital expenditures associated with addressing smoking-related morbidity and death.²³ This amounts to 6% of China's overall medical costs. Liu et al., (2011) conducted a statewide retrospective analysis and found that among male smokers between the ages of 35 and 69, the rates of excessive mortality from respiratory illnesses, vascular fatalities, and cancer were 31%, 15%, and 51%, respectively. The risks of lung cancer and respiratory disorders associated with smoking were almost the same for women as for males.²⁴ These findings were corroborated by a major statewide prospective research by Niu et al., (1989), which showed that smokers had a higher overall mortality rate (risk ratio

1.19) than non-smokers, meaning that by 1990, smoking was responsible for around 12% of deaths among middle-aged Chinese males.

A prospective observational research conducted in metropolitan Shanghai in the 2018 found that smoking was responsible for 20% of middle-aged men's all-cause death.²⁵ Additionally, males who began smoking before the age of 25 had a about twice greater rate of excessive mortality, which was substantially correlated with the quantity of cigarettes smoked.

Although smoking causes different diseases in different parts of China, smoking poses a significant and rising danger throughout. Smoking-related diseases account for more than half of the death rate in America and Britain, and a similar trend is expected in China. By 2030, smoking is expected to account for almost 33% of all deaths among Chinese middle-aged people if present trends continue.²⁶ Essentially, of the 300 million Chinese men between the ages of 0 and 29, over 100 million are thought to die from diseases associated with tobacco use in their middle or later years.

Diseases aligned with smoking

The main contributing factor to the pathophysiology of chronic obstructive pulmonary disease (COPD) has been determined to be smoking.²⁷ Cigarette smoke exposure and COPD have a well-established dose-response association that has been shown in China and across the world. Compared to their male counterparts, female smokers are more likely to develop COPD. While there is ongoing debate over the association between second-hand smoke (SHS) and the development of COPD, there are signs in Guangzhou that imply a favorable dose-response relationship between SHS exposure and respiratory symptoms. According to estimates, SHS may be to blame for 1.9 million additional COPD deaths among never-smokers.²⁸

Studies of case-control done in major Chinese cities consistently show a strong correlation between smoking and the incidence of lung cancer. Smokers had a lung cancer risk that was around three times greater than that of non-smokers among people aged 35 to 69. Furthermore, smoking has been linked to a number of different cancers, such as those of the pancreas, esophagus, stomach, bladder, and mouth cavity.²⁹ In China, smoking also increases the risk of cardiovascular illnesses. Studies using cross-sectional surveys with a sample of people 65 years of age and older have shown a significant correlation between dementia, Alzheimer's disease, and vascular dementia and a history of tobacco smoke exposure.³⁰ The numerous health hazards linked to smoking highlight the pressing need for all-encompassing tobacco control policies in order to lessen China's high public health burden.

Second hand Smoke and Health hazards

An estimated 22,000 fatalities from lung cancer and 33,800 deaths from ischemic heart disease were attributed to secondhand smoke (SHS) in 2002.³¹ Furthermore, SHS was responsible for the lung cancer deaths that claimed approximately 230,000 years of life. Roughly 80% of the illness burden associated with SHS is carried by women. A research conducted by Wang et al., (2021), that in Shanghai with more than 72,000 participants showed that nonsmoking women whose spouses smoked had a nearly 40% higher chance of dying. Additionally, this group showed an increased risk of heart disease and lung cancer. In Chinese children, a link has been shown between elevated respiratory symptoms and SHS exposure. Dong et al., (2007) documented a higher incidence of respiratory disorders and symptoms in children in northern China as a result of SHS exposure. Boys who were exposed to household smoking (≥ 10 cigarettes per day) had a higher chance of experiencing asthma symptoms throughout the workday (adjusted odds ratio: 2.04; 95% confidence interval: 1.01–3.89), and there was a 2.76 (95% CI: 1.06–9.58) risk of having asthma symptoms at that time. Additionally, this study showed a correlation between SHS during pregnancy and a number of respiratory problems in children, such as wheezing, asthma without phlegm, persistent cough, and asthma symptoms³¹. Larger research have confirmed these connections. Furthermore, it has been demonstrated that exposure to ambient tobacco smoke amplifies the impact of allergens in triggering respiratory symptoms and intensifying asthma attacks.

China's Smoking Cessation

Yang et al., (2005) articulated that, China still has very low rates of smoking cessation; surveys from 2005 and 2010 showed that 74% and 84% of smokers, respectively, did not say they wanted to stop or had never thought about it. Just 11% of smokers were able to effectively stop, with just 20% to 25% having made at least one attempt and over half of those attempts ending in relapse. One startling finding is that in China, around 80% of those who had ever smoked tobacco continued to smoke after the age of 65. Family pressure, financial concerns, current disease, and the desire to avoid future illness were common reasons for stopping. Notably, a higher chance of quitting was linked to higher levels of schooling³². China's consistently low smoking quitting rates are a result of the sociocultural issues already described, as well as a lack of knowledge about the negative consequences of smoking and the false belief that smoking dangers can be reduced via "reasonable" use. There aren't many clinical trials on quitting smoking in China, but one research from Lin et al., (2020) found that behavioral

intervention with medication therapy worked better than clinical consultation, traditional Chinese medicine therapy, or independent education programs.

China's medical community has not contributed enough to the fight against tobacco use. According to a poll conducted among nurses, hardly two-thirds acknowledged smoking as a primary cause of avoidable deaths and believed that quitting smoking was the most economical solution. Moreover, just thirty-three percent of these nurses regularly helped patients give up smoking. Inadequate tobacco control measures were revealed by a recent survey, which found that over 60% of smokers did not have their smoking habits questioned during professional appointments, and roughly 67% did not receive assistance on how to stop smoking.³³ The observed poor cessation rates in China can be attributed to a number of factors, including a lack of hospital clinics, insufficient assistance for quitting smoking, and inadequate training for medical personnel in counseling and cessation techniques.³⁴ Furthermore, one of the biggest obstacles to the success of anti-smoking campaigns is the high rate of smoking among physicians.

China's tobacco control measures and obstacles

Through initiatives coordinated by non-governmental groups, the Chinese Center for Disease Control and Prevention, and the Ministry of Health, China has started its fight against tobacco use. These programs, which are frequently supported externally by organizations like the Bloomberg Initiative and the Bill & Melinda Gates Foundation, include the printing of health warnings on cigarette packages, tobacco control campaigns, and the adoption of smoke-free laws.³⁵ China ratified the Framework Convention on Tobacco Control (FCTC) in 2003, two years after it was signed by the World Health Organization (WHO) and pledged to uphold its terms.

In China, warnings about health hazards on cigarette packages that cover more than 30% of the surface have been mandatory since 2008. Furthermore, it is illegal to advertise tobacco products in periodicals or on billboards. China's Ministry of Health has enforced smoking prohibitions in hospitals, schools, kindergartens, and locations frequented by children.³⁶ Hong Kong also imposed a ban on smoking in public in 2007. Proactive campaigns to ban smoking were also launched in conjunction with significant occasions like the 2008 Beijing Olympics and the 2010 Shanghai Expo.³⁷

Notwithstanding these initiatives, China's tobacco control policies still lag well beyond what the FCTC mandates. China scored badly on the FCTC's implementation, and the country's current smoking ban legislation and regulations are not strictly implemented.³⁸ Despite FCTC restrictions, tobacco advertising, promotion, and

sponsorship continue to be commonplace, and laws and regulations against smoking are not consistently implemented. There is comparatively little public knowledge of the health risks associated with tobacco use and secondhand smoke (SHS). There are still misconceptions, such as the idea that some cigarettes - especially those marketed to women - are safer than others. Social norms like providing cigarettes to visitors increase the exposure of smokers to the environment and make it more difficult to enforce smoke-free laws.³⁹

Two major obstacles to tobacco control are the Chinese tobacco monopoly's opposition and the government's lack of support. The national economy may be harmed by tobacco control measures, according to certain officials, which is why retail tobacco taxes are reluctant to be implemented.⁴⁰ Research goals are influenced by the tight relationships that the Chinese tobacco industry has with academic institutions. There is a growing recognition of the economic cost of smoking, indicating that the health risks outweigh the profits made by the tobacco industry.⁴¹ In the Chinese market, the tobacco industry—including international cigarette companies—actively markets its brands. The industry's power is increased by its sponsorship of athletic and cultural events as well as by the custom of giving cigarettes as gifts to people in order to establish social standing and form relationships.⁴² Associating smoking with independence, creating flavored cigarettes, and utilizing culturally themed packaging during festivals are among strategies used to target women and youth. In conclusion, despite attempts to reduce tobacco use in China, there are still many obstacles to overcome, such as the tobacco industry's opposition, low public awareness, inadequate government backing, and poor implementation of current laws. It is imperative that these issues are resolved if the nation is to have successful tobacco control.

Obstacles to Tobacco Control: Approaches and Remedies

Effective tobacco control in China requires a focus on multisector collaboration and government leadership. Clinical physicians, public health specialists, and health-care economists should present the central government with compelling data to support the need for tobacco control laws and regulations.⁴³ Tobacco control concerns need a range of actions, including restrictions on the supply of tobacco products, higher taxes on tobacco products, measures to prevent smuggling, public awareness campaigns, advertising laws, lowering the exposure to secondhand smoke (SHS), and assistance in quitting.⁴⁴ Public knowledge of the health risks connected with tobacco smoking should be increased by long-term initiatives such as mass media campaigns, community activities, and education programs offered in schools.⁴⁵

Making use of modern methods like social networking sites on the Internet and phones, which are well-liked by younger demographics, might also be explored. It is determined that the most economical method of tobacco control is central government taxation. According to studies, China might avoid premature deaths and drastically lower the number of smokers by raising the tobacco tax.⁴⁵ It is supported by tax simulations and empirical economic research that greater taxes would result in a decline in smoking rates and save lives.

Conclusions and Recommendations

In conclusion, smoking is still quite common in China even with some tobacco control policies in place. Long-term issues include elevated secondhand smoke (SHS) exposure among women and children, as well as persistent smoking rates, especially among women, adolescents, and young people. This circumstance gives rise to worries over future increases in preventable fatalities. Inadequate public knowledge of the risks associated with smoking, sociocultural variables, a lack of official backing, and strong opposition from the tobacco industry are seen as the main roadblocks to the advancement of tobacco control. It will need swift action and efficiency to overcome these obstacles. The research further concludes that, Cigarette warning labels need to be improved, notably with more potent visual warnings, in order to raise public awareness, especially among lower-class and rural populations. Improving warning labels can support tobacco control initiatives, and cigarette packaging has a significant impact on how each individual smokes.

In order to reinforce current legislation, influence anti-tobacco policy, and encourage the construction of smoking cessation programs across the country, cooperation between anti-tobacco workers and the Chinese government is essential. Health care providers are asked to take the lead in anti-tobacco initiatives, oppose tobacco marketing, support laws prohibiting smoking, and seek to lower the number of tobacco-related illnesses that affect Chinese citizens. Overall, to significantly advance tobacco control in the nation, a thorough and coordinated strategy incorporating many societal sectors is required.

It is recommended that the medical community take the lead in tobacco control and smoking cessation. Promoting smoke-free healthcare facilities and hospitals, integrating tobacco control into nursing and medical curriculum, and offering easily accessible and efficient smoking cessation programs are some of the initiatives. In healthcare settings, the need of education, training, and feedback systems is emphasized as crucial elements of effective smoking cessation programs. To close the gap between the need and the scarcity of smoking cessation

services in China, sustained efforts are required.

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