

Smoking status and interventions among children and adolescents in China

Yiheng Bi

Hainan Medical University, Hainan province, 570100, China

2225446049@qq.com

Abstract. Tobacco use is the leading cause of preventable death globally. China is the World's large tobacco-producing and consuming country, and the burden of death and disease caused by tobacco use will continue to increase. The "Healthy China 2030" Planning Outline proposes to reduce the smoking rate of the population over the age of 15 to 20% by 2030. Taxation and price measures are recognized as the single most effective tobacco control policy measures. A variety of interventions are needed for adolescents, including China can carry out tobacco control according to the comprehensive tobacco control policy of WHO MPOWER (monitor, protect, offer, warn, enforce, raise), smoking ban in public places, cigarette sales to minors, prohibiting advertising promotion, raising the tobacco tax, adding health warnings to the cigarette packaging, use new media to expand coverage.

Keywords: Children smoking hazards Smoking rate Intervention strategy.

1. Introduction

The Tobacco cultivation and smoking originated in Central and South America. Later, due to the arrival of the "Columbus Exchange" era, tobacco was introduced to the Philippines in 1571, and gradually spreading throughout Asia. In China, tobacco smoking became popular nationwide from the middle and late 16th century to the mid-18th century. Today, tobacco has become one of the most widely planted cash crops, growing in more than 120 countries. Tobacco has become an important crop widely spread worldwide after the tremendous geographical discovery and has had a profound impact on the development of world history[1]. In addition to tobacco's important role in the global economy, it is also a significant public health problem for the world. Nowadays, countries all over the world are making efforts to control the smoking rate.

2. Tobacco's dangers to children:

2.1. *The dangers of prenatal smoking for children*

The World Health Organization has listed tobacco use as the world's leading preventable cause of death[2] and included it in the top 5 risk factors for global disease burden[3]. Children have always been a vulnerable group with much attention in tobacco control activities. However, mothers' prenatal smoking, children's exposure to secondhand smoke, and smoking all affect children's health[4]. Study shows the relationship between prenatal tobacco exposure and telomere length in children[5]. The results showed that children exposed to prenatal tobacco had significantly shorter telomere lengths than

unexposed children[5]. This is a dose-response relationship, which means that the amount of time the mother smoked during pregnancy is related to the length of the child's telomeres; the longer the mother smokes, the shorter the child's telomeres. However, shortening of telomeres can lead to many adverse health outcomes, including cancer, cardiovascular disease, type 2 diabetes and early mortality[5]. Notably, secondhand smoke also hurts children's health.

2.2. Harm of secondhand smoke to children

Secondhand smoke exposure increases lung disease incidence, prevalence, and severity, including asthma, cough, phlegm, wheezing, breathlessness, lower respiratory illnesses, lung function, middle ear disease, and nasal irritation [6]. Moreover, children's secondhand smoke can cause cardiovascular disease, obesity, a variety of tumors, and also affect brain development[4]. It can be seen that smoking is harmful to children's physical and mental health.

3. The status of smoking population in China

China is the largest tobacco victim in the world, with more than 300 million smokers. Nearly 1.4 million people die from smoking-related diseases, and over 100,000 people die yearly from secondhand smoke exposure. 740 million non-smokers suffer from second-hand smoke, of which 180 million are children and adolescents[7]. In 2014, China released the first national report on the special youth tobacco survey, and the results showed that the current use rate of tobacco among teenagers aged 13 to 15 was 6.9 percent, higher than 6.3 percent in the 2010 Report on Smoking Control in China[8]. Male (11.2%) was higher than female (2.2%), rural (7.8%) was higher than urban (4.8%), and 82.3% of adolescents who tried smoking reported trying smoking at age 13 years or before[9]. This means that the smoking rate of young people in China is increasing yearly and showing a trend of younger age. To accelerate the process of tobacco control in China and the prevention and treatment of chronic diseases, the "Healthy China 2030" plan calls for reducing the smoking rate of people over 15 to 20 percent by 2030. There is evidence that most smokers start smoking behavior in adolescence, and do not smoke before the age of 20[10-11]. Therefore, preventing and encouraging adolescents to quit smoking is the key to reducing the adult smoking rate.

4. Intervention in Youth Smoking Policy

Firstly, China can formulate a tobacco control policy that aligns more with national conditions based on the WHO's MPOWER comprehensive tobacco control policy. Only in this way can the smoking rate of children be effectively controlled. To help countries implement the provisions of the WHO Framework Convention on Tobacco Control on reducing tobacco consumption, the WHO introduced a comprehensive tobacco control policy called "MPOWER" in 2007 based on summarizing the experience of tobacco control policies of various countries. These include: monitoring tobacco use and prevention policies (Monitor), protecting people from the hazards of tobacco smoke (Protect), providing smoking cessation assistance (Offer), warning of tobacco hazards (Warn), banning tobacco advertising, promotion and sponsorship (Enforce), and raising tobacco taxes (Raise). Each of the MPOWER measures has been proven effective in reducing tobacco use, and these policy measures can complement and enhance each other (World Health Organization, 2008). Among them, the four measures of POWER are the non-price measures, and the last measure R is the price measure, which is also recognized as the most effective measure. MPOWER Comprehensive tobacco control policy has provided guidance and technical support for tobacco control in countries, greatly promoting the global tobacco control process. By 2019, nearly 5 billion people (about 65% of the world's population) were covered by at least one MPOWER measure at the highest level of implementation. From 2016 to 2018, 36 countries adopted one or more MPOWER measures and reached the highest implementation level (World Health Organization, 2019)[12].

Secondly, Smoking ban in public places can help provide a smoke-free environment for teenagers to live, study and play. At the same time, it can also reduce the "list" effect of adult smoking on teenagers. Caroline MF et al. from the United States, Canada, Australia, Germany, and other places of 26 studies

meta-analysis shows that the adoption of all smoking legislation will reduce the public smoking rate by 3.8%, and can make each smoker daily smoking by 3.1, the combined effect of the two can reduce the total tobacco consumption by 29%. It has also been shown that a smoke-free environment can reduce the smoking rate, and adolescents who study or work are 68% more likely to smoke in a smoke-free environment[13]. A study comparing the effects of environments with broad smoking bans and no smoking bans on youth smoking behavior and the results showed that adolescent smoking rates were 2.3% and 46.0%, respectively[14].

Third, cigarette sales to minors are prohibited. Studies showed that policies banning cigarette sales to minors reduced smoking rates and willingness to smoke[15]. Cummings et al in 1992-1996 in 12 communities in Erie County, New York on the relationship between tobacco retailers' compliance rate of this decree and adolescent smoking behavior, showed that adolescents with high compliance rates of tobacco retailers are more dependent on cigarettes from non-commercial access. However, researchers also observed a slight effect on the adolescent smoking rate, especially the decline of frequent smoking[16]. However, some studies believe that although this policy makes it easier for teenagers to buy cigarettes, it does not affect the smoking rate, and teenagers get cigarettes from other non-commercial channels, which is almost impossible[17]. Researchers with different views believe that although such policies cannot affect the average smoking rate of teenagers, they are still valuable because it has more advantages than an indoor smoking ban or media anti-smoking propaganda, which can mobilize public power and help facilitate the convergence of various tobacco control measures.

Fourth, prohibit advertising promotion. Research data from various countries show that a total ban on all tobacco advertising, promotion, and sponsorship could reduce tobacco consumption by an average of about 7 percent. In some countries, tobacco consumption fell by as much as 16 percent[18]. The World Health Organization sees banning tobacco advertising and promotion as a powerful means to reduce tobacco use, but to achieve the desired results, all forms of marketing campaigns, such as sponsoring events, must be banned up to scratch.

Fifth, raise the tobacco tax. For governments worldwide, raising the price of tobacco by imposing an excise tax is the most effective and cost-effective tobacco control program. Evidence from countries of various income levels suggests that raising cigarette prices effectively reduce smoking needs, especially for adolescents and people experiencing poverty[19]. Higher tobacco excise tax can lead to higher tobacco prices. Rising tobacco prices can have three effects: ① Many smokers reduce smoking; ② Some smokers begin to consider quitting; ③ The proportion of adolescents who try to become regular smokers decreased[20]. A study in adults showed that a 10% increase in tobacco prices reduced tobacco consumption by 4% in high-income countries and by 8% in low-and middle-income countries. Some researchers believe that adolescents are more sensitive to the price of tobacco than adults. This kind of tax system to play the maximum effect, must cooperate with strong tax administrative management, for example, advanced monitoring, tracking and tracking system, including the use of high-tech printing, and flower tax ticket, to participate in tobacco products production and sales of all parties, license, at the same time take appropriate law enforcement measures quickly to offenders with severe punishment.

Sixth, add health warnings to the cigarette packaging. Cigarette packaging is a common platform used by tobacco manufacturers to enhance brand loyalty. Adding health warnings and even warnings to cigarette packaging, pictures can reduce this marketing effect and encourage smokers to recognize the health risks posed by smoking. The measure has two advantages: ① ensures that information can be delivered to every smoker; ② requires little government input[21]. In addition to spreading health information, studies have shown that cigarette box health warnings can further change the smoking intentions of smokers and non-smokers. Related studies found that more than half of smokers can change their mood, and smokers are willing to quit or reduce the number of smokers[22].

Finally, use new media to expand coverage. The new scientific and technological revolution has pushed human society from the traditional era of TV, radio, and newspaper to a new information era, that is, the new media era of WeChat, Weibo, online shopping, online video, and network live broadcast. It has become the focus of tobacco control publicity work to use the new media as an information dissemination platform, seize the "fragmented" time to positively influence the public, grasp the

initiative of information dissemination, release the core information of tobacco control, and deepen the public's in-depth understanding of tobacco control knowledge. Local health education departments can make full use of WeChat, Weibo, and other media, set up public accounts, create official Weibo, combine public opinion hotspots, make tobacco control health knowledge into easy-to-understand pictures, animations, and short videos, and make them popular among the crowd widely disseminated. Experts in smoking control can also be invited to give special lectures on the hazards of smoking and introductions on smoking cessation skills, and broadcast live through the webcast platform so that the public can receive health education on smoking control by using their mobile phones in their spare time. At the same time, online quizzes on tobacco control knowledge in the live broadcast can further stimulate the public's enthusiasm for participation.

5. Conclusion

Although many countries have made substantial progress in tobacco control, much work remains to be perfected. We must expand the success already achieved so that everyone in the world is fully protected from the dangers of tobacco use. Continued progress in tobacco control will prevent millions of people from dying from preventable tobacco-related diseases each year and save hundreds of billions of dollars in healthcare spending and lost productivity costs. The healthy growth of children and adolescents has an inevitable connection with the long-term and stable development of China and the happy life of residents. At the same time, it is also to achieve the "Healthy China 2030" tobacco control target plan. Thus, Intervention for youth tobacco control is necessary.

References

- [1] Cui Shipeng, Zhong Weimin. From the globalization of China in the Ming and Qing Dynasties from the introduction of tobacco [J]. Journal of Nanjing University (Philosophy, Humanities, Sciences and Social Sciences), 2023, 60(03): 133-146+159-160.
- [2] WORLD HEALTH ORGANIZATION. Report on the global tobacco epidemic, 2011 the MPOWER package Geneva, WHO, 2011.
- [3] OFFICE OF THE SURGEON GENERAL OF THE U.S. SMOKING AND HEALTH, The health consequences of smoking, a report of the Surgeon General [M], Atlanta, Centers for Disease Control and Prevention 2004.
- [4] Peterson LA, Hecht SS. Tobacco, e-cigarettes, and child health. Curr Opin Pediatr. 2017 Apr; 29(2): 225-230. doi: 10.1097/MOP.0000000000000456. PMID: 28059903; PMCID: PMC5598780.
- [5] Ip P, Chung BH, Ho FK, et al. Prenatal tobacco exposure shortens telomere length in children. Nicotine Tob Res 2017; 19: 111-118.
- [6] U.S. Department of Health and Human Services. The health consequences of smoking: 50 years of progress. A report of the surgeon general. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014.
- [7] YANG G, WANG Y, ZENG Y, et al. Rapid health transition in China, 1990 - 2010: findings from the global burden of disease study 2010 [J]. Lancet, 2013, 381(9882): 1987-2015.
- [8] The Chinese Center for Disease Control and Prevention. 2010 Global Recognition of the Tobacco Survey China Report [M]. Beijing: China Three Gorges Press, 2011.
- [9] The Chinese Center for Disease Control and Prevention. 2014 Chinese Youth Tobacco Survey Report [R]. Beijing: The Chinese Center for Disease Control and Prevention, 2014: 38, 56-57.
- [10] WARREN CW, JONES-NR, ERIKSEN MP, et al. Patterns of global tobacco use in young people and implications for future chronic disease burden in adults [J]. Lancet, 2006, 336(9512): 749-753, DOI: 10.1016/S0140-6736(06)68192-4

- [11] SYEDS, HAMMONDR. Tobaccoandtherightsofthe child [EB/OL]. [2018-01-08]. http://apps.who.int/i-ris/bitstream/handle/10665/66740/WHO_NMH_TFI_01_Rev.1.pdf;jsessionid=C473BC5962F36A3AAAA1.B435F B 0 7 1E474sequence=1.
- [12] Zheng Rong, Cui Feng. The realization of the "Healthy China 2030" tobacco control goal and the reform path of tobacco consumption tax [J]. international taxation 2022,No.111(09):57-64.DOI:10.19376/j.cnki.cn10-1142/f.2022.09.008.
- [13] Hu Peijin, Zhang Wenjing, Ma Yinghua. Intervention strategies for smoking behavior in adolescents [J]. Health care and medical research and practice,2018,15(05):4-9+2.
- [14] L FICHTENBERGCM, GLANTZSA. Effectofsmoke-.freeworkplaceson smokingbehavior:systematicreview[J], BMJ, 2002, 325 (7357);188.
- [15] BOTELLO-HARBAUM MT. HAYNIE.DL. IAN-NOTTIRJ, e tal. Tobaccocontrolpolicyaandadoloes centcigarettesmokingstatusinthe U n i t e d States [J].Nicotine& TobaccoResearch, 2009,11 (7):875.4
- [16] CUMMINGSKM, HYLANDA, PERLAJ,etal.Is theprevalenceofyouthsmokingaffectedbyefforts.toincreaseretailercompliancewithami nors' access.law [J]. Nicotine&TobaccoRe searchO f f i c i a l J o u r - n a l o f t h e S o c i e t y f o r R e s a r c h o n N i c o t i n e . & T o - b a c c o , 2 0 0 3 , 5 (4) : 4 6 5 - 4 7 1 . 2
- [17] KUIPERS MA, BRANDHOFSD, MONSHHOUW-ERK, etaL. ImpactoflawsrestrictingthesalLe ofto-baccoto·minorsonadolescentssmokingand.per-ceivedobtainabilityofcigaarettes,anintervention-controlpre-poststrudyof19EuropeanUnioncoun-tries [J].Addiction,2017, 112 (2); 320-329, DOI; 10, 1111/add.13605
- [18] Who calls on tobacco paperback: making boxes without advertising [EB/OL]. (2016-05-29) [2018-01-08]. http://newsifeng.com/a/20160529/48871047_0.shtml.WORLD HEALTH ORGANIZATION. WHO ActionTobacco Free is committed to the global fight against the tobacco epidemic[R]. Geneva:WHO,2015.
- [19] .DUKEJC, ALLENJA, PEDERSON LIL,etal, Re-reportedExposureto Pro-Tobacco·Messagesinth eMedia, TrendsAmongYouthintheUnitedStates, 2000-2004 [J]. AmJ-HealthPromot, 2009,23 (3): 195-202. DOI: 10.4278/ajhp.071130126,4WORLD.HEALTH.ORGANIZATION, Reporton.theglobaltobaccoepidemic, 2011the MPOWERpackage[R]Geneva.WHO, 2011,
- [20] HAMMOND D, FONG GT, MCDONALD PW, et al. ImpactofthegraphicCanadianwarninglabelsson a dults mokingbehaviour [J].TobaccoContro51, 2003 12 (4):391-395