

International Tobacco Control

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Abstract Tobacco use is one of the leading causes of preventable death globally with the burden falling predominantly on middle- and low-income countries. The World Health Organisation (WHO) introduced the Framework Convention on Tobacco Control (FCTC) to reduce the health and economic burden posed by tobacco. In this article, we assess the evidence behind three main measures included in the FCTC: (1) raising the price of tobacco, (2) introducing smoke-free policies and (3) standardised tobacco packaging. We discuss the evidence base for their introduction as well as evidence of the impact of implementation both in industrialised and developing countries, where data are available. A key challenge to the introduction of policies is opposition from the tobacco industry who has a history of challenging such developments. Another key challenge is the introduction of innovative policies which have not been introduced elsewhere, and there is consequentially not yet an evidence base in place. Finally, the advent of alternative nicotine delivery devices such as electronic cigarettes, and the role of the tobacco industry in their production, is posing new challenges for tobacco control.

Keywords Tobacco control · Tax · Smoke free · Plain packaging

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Introduction

Tobacco use is one of the leading causes of preventable death in the world. Each year, an estimated 5.1 million people die from smoking and another 600,000 die from secondhand smoke exposure [1, 2], with nearly 80 % of these deaths occurring in low- and middle-income countries [3]. Tobacco use also exerts a huge economic toll; non-communicable diseases including those attributable to tobacco have been identified by the World Economic Forum as a top global threat to economic development [4]. Policies to address tobacco use have been identified as ‘best-buys’ interventions for preventing non-communicable diseases in lower- and middle-income countries [5, 6].

To address the enormous burden of tobacco use, the Framework Convention on Tobacco Control (FCTC) was adopted by the World Health Assembly under the auspices of the World Health Organisation (WHO); 178 countries are now parties to the convention [7]. The treaty seeks to reduce the burden of tobacco use through key supply and demand measures which are laid out in its articles. Key demand measures are highlighted in WHO’s ‘MPOWER’ report including ‘Monitoring tobacco use and prevention policies’, ‘Protecting people from tobacco smoke’, ‘Offering help to quit tobacco use’, ‘Warning about the dangers of tobacco’, ‘Enforcing bans on tobacco advertising, promotion, and sponsorship’ and ‘Raising taxes on tobacco’ [8].

Addressing tobacco use requires a comprehensive approach which is why the FCTC lays out a series of policies to address the many contributing factors that lead to the uptake and continued use of tobacco [8]. Within this article, we will highlight three tobacco control policies, chosen because a strong evidence base exists for two of the policies and because the third is a newer, innovative approach to tobacco control. We discuss the following: (1) raising taxes to increase the price of tobacco and reduce demand; (2) smoke-free laws,

which are essential to protect people from the health effects of secondhand smoke and which in some countries include non-enclosed public places (e.g., parks, where children can be exposed); and finally, (3) standardised tobacco packaging, also known as plain packaging, a policy that has only been fully implemented in Australia and seeks to restrict the last advertising and promotion tool of the industry—the tobacco packaging itself. We conclude by describing challenges to international tobacco control including trade law cases launched by the tobacco industry against countries that have implemented strong tobacco control policies and the advent of electronic cigarettes.

Raising Taxes on Tobacco

Raising taxes to increase the price of tobacco is an effective policy for reducing tobacco use [9•] and has been shown to reduce tobacco use amongst youth and adults [10, 11]. The WHO's technical manual on tax administration lays out how governments can derive the maximum benefits from tobacco taxes and along with the FCTC recommends that tobacco taxes be raised to make up at least 70 % of the retail price of tobacco [12]; it is extremely important that an appropriate tax structure is implemented that can achieve this. Unfortunately, only 8 % of the world's population live in jurisdictions where tobacco is taxed at the recommended level [8].

Historically, the first taxes on tobacco were not intended to reduce consumption, but to increase government revenues; tobacco was taxed because it was recognised as an unnecessary or 'sinful' product [13]. However, this began to change when the harmful effects of smoking began to emerge, and it was recognised that tax increases could both raise government revenues and reduce the consumption of tobacco [13]. France is an example of one country that successfully halved its tobacco consumption during a short period of time during which tobacco taxes increased by threefold from 1990 to 2005 [14, 15•]. However, recently, tax increases on tobacco have not kept pace in France, and reductions in consumption have stalled [16]. This case illustrates the importance of continuing to raise the price of tobacco through taxation to keep pace with inflation.

Due to low current taxes on tobacco in many low- and middle-income countries, there is still enormous potential to address the burden of smoking through taxation. For example, a recent analysis showed that in Bangladesh, increases in tax could lead to significant reductions in tobacco use and that the poor would be more likely to cut their tobacco consumption. It was estimated that increasing tobacco taxes to 70 % of the retail price could lead 7 million smokers to quit, prevent 6 million premature deaths and raise 15.1 billion extra taka (200 million USD) in excise revenue [17, 18].

Experiences of countries to date, such as Turkey, show that increasing the price of tobacco as part of a comprehensive

tobacco control programme is associated with reductions in tobacco use [19, 20]. In 2010, Turkey implemented its Special Consumption Tax on Tobacco, which was followed by an increase in the average price paid for cigarettes, a 13.6 % decline in cigarette sales and a drop in smoking prevalence from 30.1 % in 2008 to 25.7 % in 2012, a 15 % relative change [19, 20].

Despite the advantages of increasing taxes on tobacco, the implementation of tobacco taxes is often challenging and has been met by political opposition and tobacco industry arguments that raising taxes will increase smuggling [21, 22]. However, it has been shown that the relationship between taxation and smuggling is very weak and that in some cases it is the tobacco industry itself that is involved in smuggling [23]. For example, in the UK, it has been demonstrated that introducing a comprehensive strategy to combat smuggling, including greater enforcement, intelligence sharing, tax stamps etc., can reduce the use of illicit tobacco [24]. Programmes to reduce the demand of illicit tobacco can also contribute to increasing negative attitudes towards illicit tobacco and decrease demand [24].

There are also often concerns that raising tobacco taxes may put the burden on the poor and most vulnerable who are more likely to smoke than higher socioeconomic groups in most countries [25]. However, research has shown that the poor are the most responsive to price increases and are more likely to quit [9•]. Still, raising the price of tobacco through taxation should always be accompanied by offering smokers support for smoking cessation, including effective pharmacotherapies, with special attention to vulnerable smokers.

In addition to raising taxes to increase the price of cigarettes, it is important that other policies are passed to prevent cheaper cigarettes from entering the market such as bans on single cigarette sales, small packs of cigarettes, coupons/discounts and restrictions on cross-border purchasing.

It is also important that countries adopt appropriate tax structures. For example, there is evidence that in some countries the tobacco industry adjusts their pricing to keep the price of their discount brands of cigarettes low ('ultra-low price'), thereby enabling the poorest smokers to continue to smoke [26]. Indeed, a recent analysis showed that in Britain, the use of cheap tobacco products, including ultra-low price tobacco, is increasing amongst young and disadvantaged smokers and may be contributing to inequalities in smoking [27]. More research is still needed to investigate how other vulnerable groups, including the mentally ill, and those with comorbid drug use, respond to increases in the price of tobacco [28, 29].

Smoke-free Laws

Second-hand smoke (SHS)—also known as environmental tobacco smoke, tobacco smoke pollution or passive smoking

—is made up of mainstream smoke, the smoke exhaled by smokers, and sidestream smoke, the smoke emitted from the burning end of cigarettes [30]. The health effects of SHS exposure are significant. Examples include cardiovascular disease, lung cancer, lower respiratory tract infection, asthma and low birth weight in the babies of non-smokers [31–34]. Legislation to restrict exposure to SHS (smoke-free legislation) aims to mitigate these health harms in two ways. First, by protecting non-smokers from tobacco smoke and second to support smokers who are trying to quit.

Calls to introduce policies to address SHS exposure became more prominent in the mid 1980s when the US Surgeons General's Report and the National Research Council stated that lung cancer in non-smokers could be attributable to SHS [35, 36]. Restrictions were gradually introduced after that point, with the first US state to introduce a law prohibiting smoking in the workplace, restaurants and bars being California in 1998.

Other jurisdictions followed and measures to provide protection from SHS were subsequently included in the Framework Convention on Tobacco Control. Article 8 of the FCTC sets out guidelines for restricting exposure to SHS in indoor workplaces, indoor public places, public transport and, as appropriate, other public places. These guidelines were adopted by the Conference of Parties for the FCTC in 2008, with a 5-year timeline set for Parties to achieve comprehensive protection from exposure to SHS in enclosed public places [30]. Findings from the most recent WHO [37] Global Tobacco Control Report found that 120 Parties had implemented measures to protect their residents from SHS.¹

In terms of impact, an international evidence base now exists that documents the effectiveness of smoke-free policies in relation to a reduction in tobacco consumption; exposure to SHS; and hospital admissions for heart attacks, amongst other outcomes [36, 38, 39]. Recent reviews identified 13 studies that explored tobacco consumption before and after smoke-free policies were introduced [36, 39]. All studies (except one) reported a reduction in consumption after policies were put in place. Hargreaves et al. [40] found that smoke-free legislation reduced consumption amongst smokers because of the potential inconvenience of going outside, and their increased visibility as a smoker which they perceived led to public disapproval. Studies have also found that the introduction of smoke-free legislation leads to reductions in exposure to SHS in the workplace, restaurants, bars and public places. For example, 12 studies in a range of countries used biomarkers to measure exposure rates and found reductions which ranged from 39 to 89 % [36]. A secondary outcome of smoke-free legislation has been a shift in social norms, with some studies reporting that smoking is viewed less positively

and more negatively following the introduction of legislation [41, 42].

There are a number of concerns expressed about the introduction of smoke-free laws, including the impact that they may have on the hospitality industry [39]. Another is that smoke-free laws may displace smoking into the home, thus increasing exposure to SHS for the families of smokers. In contrast, the studies that have looked at this issue have found the opposite [43–45]. A recent Cochrane review identified 15 studies that measured SHS exposure in the home. Overall, these studies detected no change in exposure at home following the implementation of smoke-free legislation, with three finding that exposure levels in the home reduced [36].

In addition, there can be measureable health benefits following the introduction of smoke-free legislation. Evidence from 10 studies (five in the USA, three in Italy, one in Canada and one in Scotland) showed a significant reduction in number of hospital admissions for myocardial infarctions following the introduction of the legislation. Finally, it is important that smoke-free policies are properly implemented and enforced. Poorly implemented policies have been found to be less effective with fewer measurable health gains [46]. The WHO has provided guidance on how to effectively implement smoke-free policies, although uptake of this has been mixed [47].

Plain Packaging of Tobacco Products

The last decade has seen a significant shift in the marketing of tobacco in many countries, with laws introduced to restrict the ways that tobacco products can be promoted and sold. Research over a number of decades has illustrated that tobacco promotion influences smoking uptake and continued consumption [48, 49]. This research informed articles 11 and 13 of the FCTC that recommends controls to the packaging and labelling (article 11) and advertising, promotion and sponsorship (article 13) of tobacco products [7•]. In addition, the 2003 European Union (EU) Tobacco Advertising Directive which banned cross-border advertising (such as press, radio or internet) and sponsorship has also played an important part in diminishing opportunities to promote tobacco products in the EU [50].

By 2009, these measures led to relatively comprehensive restrictions on tobacco marketing in 26 countries. However, until recently, these laws have not applied to the design and branding of tobacco packaging [51]. The introduction of 'plain' or standardised packaging would entail putting tobacco products in drab, purposefully unattractive packaging devoid of branding or promotional information (other than the brand name and variant in a standard typeface); restricting designs on the product itself, eg., no branded designs on cigarettes; and including large pictorial health warnings to inform people

¹ Note that findings are based on a report received from 126 of the potential 176 Parties who signed up to the FCTC.

about the dangers of tobacco [52]. Figure 1 provides an example of a standardised pack.

Research suggests that plain packaging could contribute to efforts to reduce smoking prevalence and prevent smoking uptake. There are three key arguments to support this. First, plain packaging will reduce the appeal of smoking thus reducing its attractiveness to potential new smokers and weakening the association that some current smokers have with particular brands. Several studies have examined how plain packaging will affect consumer perception of the attractiveness of plain packaging. These have shown that adults and young people find plain packs to be less appealing, less attractive and of poorer taste and quality in comparison to branded packs [53–55].

The second argument is that plain packaging will increase the salience and effectiveness of health warnings. This argument centres around the premise that branded packaging detracts people's attention away from the health warnings on the pack and that removing branding will make warnings more prominent. For example, a recent experimental study by Maynard and colleagues [56] found that non-smokers and those experimenting with smoking showed more eye movements towards cigarette health warnings packaged on plain compared to branded packaging.

The last argument is that plain packaging will reduce people misperceptions about the harmfulness of tobacco products. For example, the false belief that some brands or types of tobacco are healthier than others, which can be conveyed by the colour of packaging or terminology on the pack. A recent study by Borland and Savvas [57] found significant differences between perceptions of tar and nicotine delivery between plain and branded packaging.

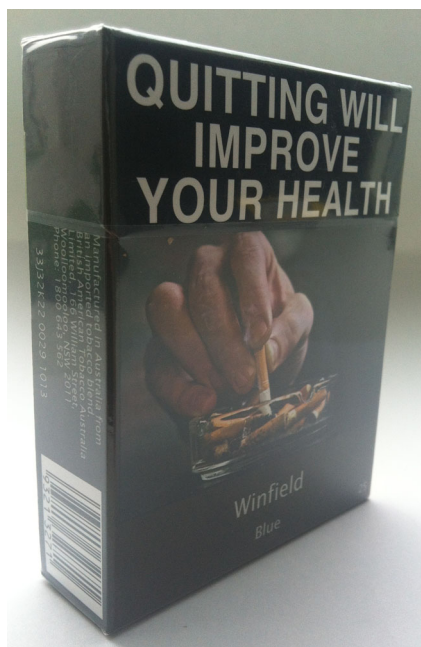


Fig. 1 Image of Australian plain pack

Limited evidence exists on the impact of plain packaging on smoking uptake or smoking behaviour. Indeed, one of the key criticisms of plain packaging was that, because no country has it in place, there is no evidence to demonstrate a link with smoking behaviour. However, in 2012, Australia became the first country to introduce plain packaging, and there is now a programme of research underway to evaluate its impact. Some early results have already emerged. For example, a recent cross-sectional survey of smokers who used branded and non-branded packs during the period of their introduction found that those who smoked from plain packs perceived their cigarettes to be less satisfying and of poorer quality and were more likely to support the policy and consider quitting [58•]. A number of other countries intend to implement plain packaging. For example, in August 2014, following two stages of consultation and review of the evidence [52, 59•], the UK Government made a commitment to support the introduction of plain packaging. Ireland has also committed to plain packaging, and other countries that are considering implementing plain packaging include Finland, France, New Zealand and Turkey.

Challenges for International Tobacco Control

There are a number of ongoing and emerging challenges for international tobacco control. First, although good evidence exists about the most effective policies and interventions to reduce smoking, these are still not in place in many countries. The FCTC has served as a catalyst to action and the number of countries and states that are now signatories illustrates how a global treaty of this type can be used to tackle public health issues. However, a number of prominent developed countries such as the USA and Switzerland have not signed the treaty, and in low- and middle-income countries in particular, the recommended policies are not yet in place. Secondly, even when changes are introduced, there is often an implementation gap where partial application or inadequate enforcement undermines the intentions of the tobacco control policy, with the patchy implementation of smoke-free laws in some states serving as a good example [46]. Third, there are a growing number of legal challenges that have been launched by the tobacco industry against countries that have implemented tobacco control laws over the last few years. Cases have been launched against Australia for implementing plain packaging; Norway for banning the display of tobacco in shops [60]; and Uruguay for implementing large pictorial warning labels amongst others [61]. The industry has consistently used legal challenges as a tactic to delay and/or weaken tobacco control policy, although their challenges are almost inevitably unsuccessful. However, the cost and time involved in fighting industry legal challenges does act as a deterrent to governments contemplating the introduction of new measures. When entirely new measures are being introduced

such as plain packaging, this poses new difficulties in that an existing evidence base for the impact of implementation is clearly not in place.

New developments are also posing challenges for international tobacco control, most notably, the advent of electronic cigarettes. These devices, also known as ‘vapourisers’, are battery operated and aim to simulate combustible cigarettes. They do not contain tobacco but operate by heating nicotine and other chemicals into a vapour that is inhaled. Nicotine is the addictive substance in tobacco, but it is the many other chemicals in cigarettes that are responsible for smoking-related diseases. For this reason, a number of regulatory agencies have suggested that using these devices is less harmful than continued smoking [62, 63], and this is supported by recent reviews of the evidence [64].

However, e-cigarettes have caused some confusion amongst tobacco control advocates and those developing tobacco control policies. This is primarily because of concerns about potential youth uptake and paths into tobacco smoking from the use of e-cigarettes and because of the tobacco industry’s role in producing and marketing some of these devices. Differences of opinion also exist about the merits of using nicotine-containing products like e-cigarettes for cutting down rather than quitting and as a longer term substitute for smoking. As a result of these concerns different countries have approached e-cigarettes in different ways with a number of regulatory frameworks emerging. Whether and in what form e-cigarettes will be included in the FCTC is currently being debated as well as the evidence base [65]. The longer term contribution of e-cigarettes to reducing tobacco smoking is currently unknown. However, evidence from the UK, where there are comprehensive and up-to-date survey data on smoking available, indicate that during a time when e-cigarettes have increased in popularity, reductions in smoking have continued, suggesting no negative impact of their availability.

Conclusion

In summary, there are key evidence-based supply and demand side measures that can reduce smoking, some of which have been reviewed in this article. It is important that these are implemented and enforced, as quickly as possible, particularly in those countries where the burden of tobacco use is highest. Innovative tobacco control strategies, including harm reduction measures, should also be explored alongside comprehensive surveillance and monitoring to ensure no unintended consequences.

Compliance with Ethics Guidelines

Conflict of Interest Fiona Dobbie, Sara Hitchman, Ann McNeill and Linda Bauld declare that they have no conflict of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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