

The influence of tobacco control legislation on smoking rates: A review of empirical research

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Abstract

Smoking is one of the most widespread health risk behaviours worldwide. The Framework Convention on Tobacco Control represents the most successful and inclusive attempt to control the smoking 'epidemic', involving as many as 180 countries worldwide. The convention regulates aspects such as tobacco prices, advertising, smoking in public places etc., having as the ultimate goal the reduction of smoking rates. The present review discusses cross-country empirical evidence on the association between the Convention implementation and overall reduction in smoking rates, while also focusing on the mediator variables involved in the process. It is concluded that apart from legislative enforcement, the consideration of attitudinal and social normative variables is important in achieving the long term goal of reducing smoking rates, especially in countries with very high smoking prevalence (e.g., Albania, Greece). Hence intervention programs addressing mediating variables are necessary in order to boost informal mechanisms of behavioural control.

Keywords: *Framework Convention on Tobacco Control, smoking rates, attitudes, social norms.*

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Health effects of smoking: The need for formal regulation

Smoking behaviour is still listed as one of the major causes of preventable death worldwide; the data are particularly disturbing considering that the negative health effects of this behaviour have been formally acknowledged for several decades now, by both national and international health organizations (Center for Disease Control and Prevention 2017). Different types of research studies including cross sectional, case-control, and cohort studies, have found relationships between smoking and heart disease or different types of cancer Samet (2001). Although causality has been a largely debated issue, this research has provided evidence of both a temporal relationship (smoking before disease appearing) and strength of the association between the behaviour and incidence of the disease. The relationship with lung cancer has been particularly well-established as the 2004, Surgeon General's Report (2004) claimed that smoking caused 90% of all lung cancer deaths in men and 80% in women. More recent estimations of the World Health Organization (2016) suggest figures as high as 6 million smoking associated deaths per year.

Even more concerning is research documenting negative health outcomes of exposure to environmental tobacco smoke (ETS). For almost 40 years now, studies have reported the negative health effects of ETS, especially among women with smoking partners or children living with smoking parents (Trichopoulos et al. 1981). Indeed the World Health Organization (2016) has classified environmental tobacco smoke as a risk factor involved in several respiratory conditions, cardiovascular diseases and several types of cancer. Evidence from a research study involving 192 countries estimated that only in year 2004 diseases associated to ETS exposure resulted in 603 000 deaths (Öberg et al. 2011).

Recent estimates of the World Health Organization (2017) suggest that in the recent years the tobacco epidemic has largely shifted towards low and middle income countries, including south-east European countries. Despite the cross-country differences, smoking behaviour still represents an important public health issue in most countries all over the world. In this context, several efforts at an international level have been made to control the smoking 'epidemic'; the best example is the Framework Convention on Tobacco Control (FCTC), a treaty signed by as many as 180 countries worldwide (WHO 2003).

The Framework Convention on Tobacco Control (FCTC)

The Framework Convention on Tobacco Control (FCTC) addresses the main aspects which are thought to influence the tobacco epidemic including price,

taxation, advertising of tobacco products, packaging, labelling, education, public awareness, sales to minors, smoking in public places etc. (WHO 2003). Two important long-term goals of the treaty include the facilitation of smoking cessation and the promotion of smoking prevention; for instance aspects such as price raises have been found to directly influence smoking cessation rates particularly among smokers of low socio-economic status (Farrelly et al. 2001). On the other hand, regulation of advertising campaigns including total bans from all mass media were suggested to play an important role in terms of smoking prevention, particularly among adolescents (eliminating the exposure/persuasion effects). Moreover, FCTC addresses also the issue of access to tobacco, by prohibiting sales to minors and also enforcing total or partial bans in all public places, workplaces, and public transportation (Wakefield et al. 2000). Finally the obligation to include health warnings on all cigarette packages, does serve as a continuous reminder of all the negative health consequences for both present and future smokers (WHO 2003).

To summarize, the long term goal of FCTC is that of reducing smoking rates and consequently the negative health effect related to this behaviour. Empirical evidence on the association between successful FCTC implementation and reduction in smoking rates across countries is discussed in the following section.

FCTC, smoking rates, and mediating variables: Cross-country evidence

Research findings have suggested that the proper implementation of FCTC is associated with several positive outcomes. For instance, studies examining the effectivity of workplace bans have reported that smokers in companies with strongly enforced bans were 2.3 times more likely to quit smoking as compared to smokers working in environments with no bans (Bauer et al. 2005). Moreover, smoking bans in workplaces or other public places seem to positively influence behaviour at home; indeed smoke-free homes are an important determinant of success in quitting smoking (Ferketich et al. 2016). Furthermore, ex-smokers report very positive effects of legislation on their behaviour; for instance, data from Ireland in 2006 reported that 80% of quitters identified new legislation as an incentive to quit smoking; even more, 88% reported that the bans served as an important deterrent, preventing them from starting again (Fong et al. 2006).

Nonetheless, an important question to address refers to the psychosocial mediating variables through which smoke-free policies ultimately produce a reduction of smoking rates. Studies suggest that these variables might include attitudes (towards policies, health consequences etc.) as well as social norms. For instance, countries where successful implementation of smoking bans has been associated

with a reduced prevalence of the behaviour, have also provided evidence of high levels of knowledge and agreement with the health consequences of active and passive smoking in the general population; these results were found for both non-smokers and smokers (Kurtz et al. 2003). Evidence from one of the countries with the strongest anti-smoking policies in the world, the United States, suggests that as early as 2003, almost 90% of smokers and 97% of non-smokers actually accepted and agreed with the health consequences of both active and passive smoking (McMillen et al. 2003).

Moreover research has shown that smokers who acknowledge the health consequences of ETS also report stronger intentions to quit smoking (Mullenburg, Legge & Burdell 2010). The present findings have been replicated not only across different countries but also across different age groups; indeed, more recent data from the Global Youth Tobacco Survey suggested that support for smoke free policies was best predicted by knowledge/acceptance of health consequences of smoking also among adolescents, who represent the highest risk target group for starting smoking (Koh et al. 2011).

Conversely, studies from countries with poor implementation of tobacco control policies have reported poor agreement with the health consequences of passive smoking; the International Tobacco Control Survey conducted in China in 2010, reported that only 50% of smokers actually believed that exposure to ETS causes lung cancer (Li et al. 2010). Even studies among Chinese health professionals have shown remarkably low levels of agreement with the health consequences, especially of ETS (Jiang et al. 2007). Indeed China is still the number one country for cigarette consumption, with still very high rates of cigarette smoking and a death toll up to one million yearly related to this behaviour (World Health Organization 2017).

Another important variable to consider refers to socio-cultural norms, which seem to affect both implementation success and the relationship between policies and reduction of smoking rates. Greece, for instance has shown considerable resistance towards the implementation of smoke-free policies, as evident in the negative attitudes towards policies and the high non-compliance rates (Lazuras et al. 2009a). Attempts to explain these findings have provided explanations involving cultural meanings of smoking behaviour; a cross-cultural qualitative study with British and Greek smokers found considerable differences in levels of support and respective perceptions of smoke-free policies (Louka et al. 2006). In this study, British participants seemed to perceive smoking as a legitimate target for intervention and regulation and were quite supportive of smoke-free policies. On the other hand Greek participants had a negative attitude towards policies because they reported associations between smoking behaviour and individual freedom (i.e., the smoker should have the choice and right to smoke). Indeed

the high social acceptability of smoking behaviour in Greece has been strongly associated with high non-compliance rates particularly as regards smoking bans in public places (Lazuras et al. 2009a; Lazuras et al. 2009b). In terms of smoking rates, prevalence of this behaviour in the country is still among the highest in Europe (World Health Organization 2017).

A rather more complex case, particularly in terms of the contradictory research findings is that of Albania. Although the country has signed the FCTC more than one decade ago (year 2006), smoking rates are still very high as compared to other European countries. Moreover, implementation difficulties have been present ever since, particularly as regards smoking behaviour in public places (Zaloshnja 2010). However, studies assessing attitudinal variables particularly as regards smoke-free policies have reported findings which are very different from Greece; for instance the GTSS Collaborative Group (2006) reported an overall positive attitude towards tobacco control policies particularly among Albanian youth. This finding has been replicated in an extensive study, comprising 100 countries worldwide (Koh et al, 2011); in this study Albanian youth were classified at the top of the list, in terms of level of support for smoke-free policies. Melonashi (2014) also reported similar findings (i.e., positive attitude towards tobacco control policies) among Albanian youth and also in specific target groups such as teachers and healthcare professionals. Conversely, this same study found high rates of smoking and noncompliance with smoke-free policies in public places, among all groups investigated.

These findings clearly indicate an important attitude-behaviour inconsistency, which suggests that smoking behaviour in Albania might not have the deep personal meaning it has in Greece (freedom, choice etc.). Hence, smoking behaviour in Albania seems to be more driven by external social mechanisms, rather than internal constructs such as attitudes; indeed Melonashi (2014) reported descriptive social norms (i.e., perception of the extent to which 'others' engage in the specific behavior) as particularly relevant in understanding smoking behaviour and non-compliance with policies. Thus, in contexts of strong descriptive social norms individuals might engage in behaviours which might be incoherent with their attitudes; most important the social acceptability of the behaviour increases even further in the process (if everybody is doing it, it cannot be that wrong") (Melonashi 2014). Even so, the good news is that a positive attitude (theoretically speaking) might serve as a basis for changing perceptions of social norms; this process obviously requires exposing individuals to information which contradicts their perceptions, and comes from reliable sources (e.g., research data on actual smoking/non-compliance rates, actual attitudes of smokers/non-smokers etc.). Therefore, differently from Greece, intervention programs in Albania need a major focus on perceptions of normative behaviour (i.e., reduce perceptions of social acceptability) rather than attitudinal variables (the usual target for intervention).

Indeed, findings from other countries have found associations between low social acceptability of smoking behaviour on the one hand and higher rates of compliance with smoking bans (Niederdeppe, Kellogg, Skurka & Avery 2017); smoking rates in these countries have declined considerably and several authors have explained these findings in terms of the social control mechanisms enacted (Hamilton, Biener & Brennan 2008). Most important, it should be also mentioned that proper enforcement of policies also produces a shift in levels of social acceptability of the behaviour; for instance, the strong enforcement of Norwegian anti-smoking law in 1988 produced major shifts in social norms regarding smoking in the following decade (as well as reduction of smoking rates overall) (Nyborg & Rege 2003). Hence on the one hand, favourable social norms are important in ensuring compliance with the law and reduction of smoking rates, while on the other hand, law enforcement itself influences in the long term social norms and ultimate behavioural outcomes.

Conclusions

To conclude it could be said that the Framework Convention on Tobacco Control as well as other national level policies have been successful in reducing smoking rates either through promoting quitting among smokers or preventing this behaviour altogether, across several countries. However, studies suggest that psychosocial variables such as awareness, attitudes or socio-cultural norms related to smoking behaviour need to be considered as relevant mediator variables in understanding the process. This aspect is particularly important in those countries, which still have very high smoking rates, despite formally having smoke-free legislations for years now (e.g., Eastern Europe). Even so, research suggests that variation at the level of mediating variables is present (e.g., as illustrated above with the example of Greece vs. Albania), and should be taken into account when designing country-specific programs. In fact, while proper policy enforcement remains important, educational and promotional campaigns acting at the awareness, attitudinal or social normative level (thus boosting of informal social mechanisms of behavioural control) seem to also be crucial in achieving the long term goal of reducing smoking rates.

About the author

Erika Melonashi holds a PhD in Psychology from the University of Sheffield, UK and is currently Associate Professor in Psychology at the Department of Education, European University of Tirana. Her research interests are within the

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