

APPENDIX A

Literature Review on the Impact of Smoke-free Policies on Women

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Literature Review: Impact of Smoke-Free Policies on Women

Summary

1. Women are particularly vulnerable to the harms of tobacco smoke, especially in LMICs, where they often lack control over their environments and may face additional risks from other types of disadvantage such as low income and education.
2. Besides being exposed to SHS in public places, women are at high risk of SHS exposure in private spaces that are not typically covered by smoke-free laws, such as homes and vehicles. This is especially important for women of lower SES.
3. There is a lack of studies evaluating the long-term impact of smoke-free policies in LMICs; the impact of smoke-free laws on women's smoking behavior and exposure to SHS; and the ways in which gender intersects with SES to influence the impact of smoke-free laws.
4. There is a lack of research on the impact of smoke-free policies on other types of tobacco products that are used by women, such as smokeless tobacco and waterpipe, particularly in countries where social norms against female smoking are strong.
5. Evidence from countries where smoke-free laws apply to waterpipe show the need for stronger waterpipe-specific smoke-free laws and development of strategies to improve compliance with the laws and reduce the health impact of waterpipe tobacco use and exposure.
6. Smoke-free policies may be strengthened by educational campaigns targeting both males and females in order to raise awareness of the harms of smoking and the importance of implementing smoke-free laws in public places and in homes.
7. Evidence suggests that both males and females are equally supportive of strong smoke-free laws, and that support increases after smoke-free legislation is implemented.

Background

It is well-known that exposure to secondhand tobacco smoke (SHS) causes significant harms to the health of all men, women, and children, including increased risk of premature death and disease. [1–3] However, women in particular face additional health risks from SHS exposure. For example:

- Evidence suggests that SHS exposure increases the risk of breast cancer and complications during pregnancy [4–6]
- Non-smoking women may have a greater risk of developing respiratory diseases from SHS exposure compared to men [5]

The benefits of smoke-free laws have been clearly established. For example, comprehensive smoke-free laws: [6,7]

- Have been shown to greatly reduce or eliminate SHS in public places;
- Lead to improved population health outcomes, such as fewer respiratory problems and lower rates of hospital admissions for coronary events;
- Can also lead to an increase in the adoption of home smoking bans

However, most of the evidence on the impact of smoke-free legislation comes from high-income countries, where such laws have become increasingly widespread. In addition, most research considers the impact of smoke-free laws on the population as a whole rather than examining differences by sex. There is a lack of studies on gender differences in SHS exposure and impact of smoke-free policies, especially among low SES groups and those living in low- and middle-income countries (LMICs), where women tend to have lower levels of empowerment (i.e. power over economic resources and decision-making).[8]

SHS exposure among women

In many countries — particularly in LMICs, the norms against smoking are stronger for females than males, contributing to much lower smoking rates among women. [9] Yet women have higher rates of exposure to SHS than men — globally, it is estimated that one-third of females and one-fifth of men were exposed to SHS in 2016. [1]

SHS in the home

The predominant source of SHS exposure in many LMICs is in the home, where women — especially in rural areas — tend to spend most of their time, thus placing them at increased risk of SHS exposure from members of their household who smoke. Indeed, studies have found higher rates of SHS exposure among women in the home compared to men in countries such as Bangladesh [9], India [10], China [11], and Taiwan. [12]

Gender difference in home SHS exposure may also vary by smoking status — an analysis of GATS data in 14 countries (mainly LMICs) found that among smokers, males were significantly more likely to be exposed to SHS in the home than females in 6 of the 14 countries; whereas among non-smokers, females had significantly higher exposure in the majority (10 out of 14) of the countries. [13]

SHS in workplaces and other public places

On the other hand, men are generally more likely to be exposed to SHS than women in public places outside of the home, such as the workplace. [14] Sex differences in workplace SHS exposure have been found in several LMICs, with data from the GATS and other surveys showing higher rates among men in all countries surveyed [3,15], including India [16], Bangladesh [17], China [18], and Taiwan [12]. This inequality in workplace SHS exposure may be due to differences in the types of occupations and sectors of the economy that women and men are likely to be employed in. For example, in Europe, women are less likely to be in paid employment than men overall, and are more likely to work in the hospitality industry or in the home, where SHS exposure is more common. [5,6]

Evidence also suggests that males are more likely to be exposed in restaurants and bars — venues that are typically visited more often by males than females in LMICs. For example, ITC data from 2008-2010 in Uruguay found that SHS exposure decreased after the comprehensive smoke-free law was implemented in 2006, but males were still significantly more likely to be exposed to SHS in restaurants and bars overall than females, suggesting difficulties with compliance and enforcement among males who frequent public venues in Uruguay. [19]

SHS in cars

Besides the home, another private space where women and children may be at greater risk of SHS exposure is in cars, particularly in countries where smoke-free laws do not cover private vehicles.

- Evidence from high income countries (HICs) (Canada, US, UK, and Australia) has shown that most smokers do not smoke in their car with non-smokers present (i.e less than half of smokers in the four countries in 2007), but that males were more likely to smoke in cars than women. [20] Those living in places without a comprehensive smoke-free law and those without a home smoking ban were also more likely to smoke in cars with non-smokers.

The role of SES in SHS exposure

Evidence from many studies shows that socioeconomic status (SES) influences SHS exposure, with lower education and income being associated with lower knowledge of the harms of SHS as well as greater risk of SHS exposure in homes and public places among both men and women. [1,3,9,15,21] Moreover, gender may intersect with other vulnerabilities such as low education and income to increase risk of SHS exposure and its harms even further for women.

- For example, a study from the US found that SHS exposure among nonsmoking women in the workplace was associated with sociodemographic factors as well as type of occupation, with those of lower SES and those working in accommodation or food services industries more likely to be exposed regularly. [14] Other studies have also shown that lower education increases the likelihood among women of being exposed to SHS at work. [22]
- In Bangladesh, the likelihood of having a home smoking ban is lower among women, the illiterate, and those with low income. [23]
- A study among Asian-American women in California found no difference in the prevalence of home smoking bans between women of low and high education. However, those with lower education were more likely to report other people smoking in their home, had more household members who smoke, and were less likely to be in charge of setting the rules on smoking in their home, compared to women of higher education — suggesting a socioeconomic disparity in enforcement of home smoking bans. [22] Lower education was associated with greater SHS exposure at home even after controlling for home smoking policy, smoking status, and presence of other smokers in the home.

Evidence on the impact of smoking bans

Impact of smoke-free laws on smoking behaviour

Evidence for the impact of smoke-free laws on actual smoking behavior as opposed to SHS exposure is somewhat mixed. For example:

- A recent systematic review of the evidence on the impact of smoke-free legislation found inconsistent evidence for an impact on smoking behavior, although some

studies from HICs did find decreases in smoking consumption and prevalence among both men and women or among men only. [24]

- Another recent study evaluating the impact of smoking bans in the UK (2006 in Scotland and 2008 in England) also found a limited short-term effect on smoking prevalence, with the greatest decrease in consumption found among male and female heavy smokers. [25]

However, the global evidence base supports the positive impact of smoke-free laws on smoking behavior overall. Smoking bans in workplaces have been shown to reduce smoking consumption and increase cessation among employees, thereby reducing SHS exposure among non-smokers as well. [26,27] Among studies that have examined gender differences in the impact of workplace smoking bans:

- Longitudinal data from Finland demonstrates that national smoke-free legislation covering workplaces had a positive impact on both males and females. After their national tobacco control law was amended to prohibit smoking in all workplaces (except restaurants and bars) in 1995, smoking prevalence among employed men and women decreased, whereas smoking rates among women employed in other sectors not covered by the ban increased. [28]
- A similar pattern of decreased smoking prevalence among both male and female hospital workers was found in Spain after the passage of smoke-free laws in 2005 (effective January 2006) and 2010, although the decrease was greater among women after the second more comprehensive law (which included hospitality venues and some outdoor areas). [29] This may be related to increased cessation training efforts among nurses during that time in Spain, the majority of whom are female.

The impact of smoke-free laws on smoking behavior may be stronger in the short term, as studies evaluating national smoke-free laws in Spain and Italy have found a stronger impact immediately following the ban compared to long term.

- In Spain, there was a short-term increase in cessation among smokers following the 2005 law that banned smoking in most public places, but only among low-education women, suggesting an impact of SES; whereas the long-term impact was maintained among men but not women. [30]
- Similarly, in Italy, there was an increase in quit ratios among both men and women immediately after their 2005 smoking ban, and this effect was stronger for women of lower education. [31]

The weaker long-term impact of the laws in Spain and Italy may be due to declines in compliance over time, a lack of effective cessation services, and relapse among smokers who quit immediately after the ban. In addition, the law in Spain was not comprehensive as it did not include hospitality venues.

Impact of smoke-free laws on SHS exposure

In contrast to the somewhat inconsistent evidence of the impact of smoke-free laws on reducing smoking consumption and prevalence, there is strong and consistent evidence that smoking bans improve health outcomes through reduced SHS exposure, especially among pregnant women, children, and non-smokers. [24] Few studies have examined gender

differences, but a longitudinal study evaluating the impact of Taiwan's 2009 tobacco control law amendment that strengthened smoke-free legislation found the following: [12]

- There was a significant reduction in SHS exposure among non-smoking men and women in both homes (from 29% to 15% overall) and workplaces (33% to 18%).
- However, the impact was greatest in the first year after the ban and decreased in subsequent years.
- Although SHS exposure decreased among both men and women, the law did not reduce gender inequalities in exposure, as men continued to be more likely than women to be exposed to SHS at work, and women were more likely to be exposed at home both before and after the ban.
- SES differences were also found, as those with lower education were more likely to be exposed at both work and home, although educational inequities in home SES exposure were reduced following the ban.

Impact of smoke-free laws on home smoking bans

Contrary to arguments by tobacco control opponents that smoke-free laws will result in displacement of smoking to the home, evidence suggests that smoke-free laws are actually associated with increased likelihood of implementing a smoking ban at home. [32–34] There are limited studies that have examined sex differences in the implementation of home smoking bans in relation to smoke-free laws; however, evidence has shown the following:

- Longitudinal data from four European countries in the ITC Project (Ireland, France, Germany, and the Netherlands) found that male smokers were more likely overall to implement a home smoking ban following smoke-free legislation. [33]
- Cross-sectional data from the US and India have also shown an association between the presence smoke-free legislation in public places and workplaces and having a smoke-free home:
 - In the US, those living in counties with a comprehensive smoke-free law were more likely to have a smoke-free home (60.9% vs 53.3%), and among households with at least one smoker, males were more likely to report having a smoke-free home than females. [35]
 - A similar pattern was found in India — where a higher proportion of those working in smoke-free workplaces also had a smoke-free home (64% vs. 41.7% overall), and men were more likely to live in a smoke-free home than females. [10]

Positive impact of home smoking bans

The impact of smoke-free laws on increasing the prevalence of smoke-free homes is important as home smoking bans not only reduce SHS exposure among non-smoking members of the household, but they are also associated with increased cessation rates and reduced cigarette consumption among smokers, as well as decreases in relapse among quitters. [36–38] Furthermore, because home smoking bans tend to be voluntarily imposed, they may have an even stronger impact than workplace smoking restrictions.[36]

- A longitudinal study among older females (mean age of 64 at the latest survey wave in 2009) in the US found higher levels of self-control (i.e. the extent to which one feels their life is under control, as measured by a five-item scale) among those with a home

smoking ban.[39] Those women who had a smoking ban in the home or car in 2009 also had higher cessation rates (as measured by smoking status at the latest wave).

- A longitudinal study conducted in the US found an overall increase in the implementation of smoke-free homes from 2001 to 2005. [40] Home smoking bans were more likely to be implemented by males, those with higher income, lower cigarette consumption, and those with no other smokers in the home. Moreover, those with a home smoking ban in 2001 were more likely to have made a quit attempt or to have quit, and less likely to relapse by the follow-up survey in 2005.

Impact of smoke-free laws on waterpipe smoking

Most global smoke-free legislation applies to cigarette smoking only. However, with an increase in the prevalence of waterpipe tobacco use in several countries, there is a growing need to adapt existing legislation or adopt new legislation to specifically address or restrict the use of waterpipe tobacco in public places. This is especially important from a gender perspective as women are more likely to smoke waterpipe in many Middle Eastern countries. For example, in Saudi Arabia, over half (52%) of female tobacco users smoked waterpipe in 2011, compared to only about one-third (34%) of male tobacco users.[1]

Currently, waterpipe tobacco use is exempt from smoke-free legislation in several HICs including the US and European Union. [1] A 2015 review of legislation covering waterpipe tobacco identified only four countries with waterpipe-specific smoke-free laws: Costa Rica, Israel, Turkey, and Ukraine. [45] In most countries, waterpipe was included under a generic description of tobacco in the law, and in 8 countries, it was defined as a tobacco product.

There are a limited number of studies evaluating the impact of smoking bans on waterpipe tobacco use, but evidence from the UK, India and Pakistan suggests difficulties with enforcement and compliance. [45] Among certain cultural groups, smoke-free legislation may have a different impact due to social norms around smoking. For example, qualitative research from the UK suggest that the 2007 smoke-free law (which banned any tobacco smoking, including waterpipe in enclosed public places) had a stronger impact on Somali women, for whom it is socially unacceptable to smoke. [46] After the smoking ban, they could no longer smoke waterpipe in private rooms of cafes, and adapted their behavior by smoking privately in the home or in illegal venues.

Strategies for effective smoke-free policies among women in LMICs

The WHO FCTC calls for strong, comprehensive smoke-free laws covering all public places and workplaces in order to fully protect the public from the harms of SHS. However, another important area of focus for efforts to reduce SHS exposure among women is in private spaces, such as homes and vehicles, where non-smoking women – particularly those of lower SES — are most likely to be exposed to SHS. This can be done through educational or media campaigns and programs to help raise awareness of the importance of smoke-free homes and cars. Evidence from successful smoke-free policies in Europe demonstrates the benefits of educational campaigns for smoke-free laws, especially for those of lower SES:

- A study using ITC data in four European countries (Ireland, Netherlands, Germany, and France) found greater impact of smoke-free laws in bars (as indicated by higher support for smoking bans, greater awareness of the harms of smoking to others, and greater decreases in smoking in bars) in those countries that implemented

educational campaigns along with smoke-free legislation to raise awareness of the purpose of the law.[44]

- The influence of harm awareness on decreasing smoking in bars in Europe after the implementation of smoke-free laws was stronger among those with lower education.[44]

Evidence on the intersection of gender with SES suggests that smoke-free efforts can be further strengthened by strategies to empower women, especially those of lower SES, as a means of enhancing the ability of vulnerable groups to take control of their own health and their home environment.(i.e. [22]) Another strategy could be to target male smokers in educational efforts to increase rates of home smoking bans, as studies have shown that males are more likely to report implementing a home smoking ban. This is especially important in countries where women have less decision-making and economic power or among low-income women who may not have the necessary support and resources to implement smoke-free policies themselves.[5,9]

Support for smoking bans

While global evidence indicates that the majority of the public is supportive of smoke-free laws,[41] there is mixed evidence on differences in support between males and females:

- Among smokers in the 2006 ITC China Survey, females were more likely to support a complete smoking ban in workplaces and restaurants, but there were no sex differences among non-smokers. [42]
- Data from the ITC Surveys in Canada, US, UK, and Australia conducted in 2002 found that female smokers were significantly less likely to support complete smoking bans in restaurants than male smokers. [43] However, this pattern was only found among those who reported that there was not a complete ban already in place. There were no significant sex difference in places that had a complete ban, or for bars.
- Similarly, after smoke-free laws covering hospitality venues were implemented in Malaysia and Thailand, ITC data showed there were no differences in support for complete bans between men and women in either country. [43]

These findings, along with evidence from other studies, suggest that public support for complete smoking bans increases after they are implemented, and that both males and females are equally likely to support bans once they are implemented.[3]

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