

APPENDIX C

Literature Review on the Impact of Health Warnings on Women

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Literature Review: Impact of Health Warnings on Women

Summary

1. Health warnings on tobacco packages are an important and cost-effective strategy for reducing tobacco use and increasing awareness of the harms of tobacco.
2. Evidence is clear that large pictorial health warnings with graphic images have the greatest impact and are effective across all sub-population groups, including smokers and non-smokers, males and females.
3. Pictorial health warnings may be especially effective for those of low SES or in LMICs with lower literacy rates; yet many LMICs have not yet implemented large pictorial warnings as recommended by the FCTC.
4. Health warnings with pregnancy-specific images and messages may be an effective intervention for motivating pregnant women not to smoke during pregnancy.
5. Health warnings that align with the FCTC Article 11 guidelines should be implemented on all types of tobacco products, not just cigarettes. However, legislation and enforcement of effective health warnings on other tobacco products such as smokeless tobacco and waterpipe tobacco is lacking in most countries. As a result, many women who are increasingly using these products are not exposed to warnings that could increase their knowledge of the health risks and discourage use.

Background

Article 11 of the WHO FCTC obligates Parties to adopt and implement strong packaging and labeling regulations within three years of ratification. Guidelines for Article 11 call for large, rotating pictorial warnings covering at least 50% (and no less than 30%) of the principal display areas of all tobacco packages. The guidelines also prohibit the use of misleading descriptors such as the terms “light” or “mild” on packages. To date, at least 113 countries or jurisdictions, covering over 50% of the world’s population, have finalized requirements for pictorial warnings.[1,2] However, tobacco industry interference remains a significant barrier in efforts to implement or strengthen tobacco control policies in low- and middle-income countries (LMICs), including tactics to delay and dilute health warning policies.[3] As a result, many LMICs have not yet implemented health warnings or have small warnings that do not meet the Article 11 guidelines.[4]

There is strong global evidence that health warnings on tobacco packages that align with the FCTC reduce tobacco consumption, increase cessation, and raise awareness about the harms of tobacco use.[1,5] It is important to evaluate the impact of health warnings on women in particular, especially in countries where the tobacco industry is increasingly targeting women with marketing strategies and branding on cigarette packs, and in countries where other types of tobacco use (i.e. smokeless tobacco and waterpipe tobacco) is growing among women. However, very few studies thus far have examined gender differences in the impact of health warnings.

Overall impact of health warnings

Health warnings are a cost-effective and highly visible health information intervention. Given their broad reach and frequency of exposure among both smokers and non-smokers, it may be expected that health warnings should impact both male and female smokers equally. Indeed, among the studies that have evaluated gender differences in warning impact, most have found

no significant differences. For example, surveys from Canada and Latin American countries have found the following:

- Canada was the first country to introduce pictorial warnings (on 50% of the front and back of packages) in 2000. A survey of adult smokers in the province of Ontario conducted 9 months after the introduction of the new pictorial health warnings found that greater cognitive processing of the warnings was associated with intentions to quit, and there was no effect of gender on this association.[6] Furthermore, greater cognitive processing predicted future quitting behaviors at a follow-up survey three months later, demonstrating the effectiveness of large graphic warnings as a smoking cessation intervention.
- Data from ITC surveys in Canada (in 2005), where pictorial health warnings were in place, and Mexico (2006), which had text-only warnings at the time of the study, showed that female smokers in both countries reported greater label salience in bivariate analyses; however, there were no significant gender differences in the multivariate regression analyses adjusting for country, sociodemographic variables and smoking status.[7]
- ITC data from Brazil, Uruguay, and Mexico showed no significant gender differences in warning impact, as measured by warning salience, cognitive impact (thinking about the harms or about quitting because of the warnings), and behavioural impact (forgoing a cigarettes because of the warnings) in all three countries – despite the variance in warnings across countries (i.e. text warnings in Mexico, pictorial warnings on 50% of the front and back of packs in Uruguay, and pictorial warnings on 100% of the back of packs in Brazil).[8]

Analyses of data from the Global Adult Tobacco Surveys (GATS) across several countries shows some variation between males and females in the impact of health warnings on certain measures, although there were generally no gender differences in countries with pictorial warnings:

- An analysis of GATS data from five LMICs surveyed in 2011-12 (Argentina, Indonesia, Malaysia, Nigeria, and Romania) examined gender differences in noticing health warnings, thinking about quitting because of the warnings, and quit attempts in each country.[9] Rates of noticing warnings were highest (over 90%) in those countries that had pictorial warnings in place before the time of the survey (Romania and Malaysia), and there was no difference in noticing between males and females in Romania (Malaysia did not have a large enough sample of female smokers to examine differences by gender). In countries without pictorial warnings already in place, there was some variation in whether males or females were more likely to notice warnings and think about quitting due to warnings. For example, in Argentina (where pictorial warnings were implemented during the survey period), males were less likely to notice warnings (80% vs 89%) but more likely to think about quitting (43% vs 35%) than females. In Indonesia (where text warnings were in place), male smokers had higher noticing (76% vs 50%), but there was no gender difference in thinking about quitting (37% vs 37%).
- An analysis of GATS data from 14 countries surveyed during 2008-2010 showed higher smoking rates among males compared to females in all countries and higher rates of noticing health warnings among males overall – over 90% of men in 12 of the 14 countries noticed warnings whereas only 7 of 12 countries with female smokers had

rates of noticing of over 90%.[10] However, in the countries that had pictorial warnings at the time of the survey (Brazil, Thailand, Uruguay), there were generally no differences in noticing between male and female smokers. Among those who noticed warnings, the percentage who reported thinking about quitting was higher among females than males in the majority of countries (8 out of 12) and was equal in two countries.

Evidence from experimental studies conducted in China have demonstrated the weak impact overall of the Chinese text warnings in comparison to warning labels in many other countries, particularly those with pictorial warnings. In these experimental studies, similar results of this weak impact were found among both males and females:

- An experiment conducted among Chinese smokers and non-smokers in 2008, just after new text warnings were announced (from the sides of packs only to 30% of the front and back of packs), asked participants to rate various warning labels according to several criteria. The findings demonstrated that the Chinese warnings were consistently rated as least effective among both males and females compared to pictorial warnings from other countries.[11] Females were more likely overall than males to report that warnings made them less likely to give cigarettes as gift, although both males and females rated the Chinese warnings as least likely to stop them from gifting cigarettes compared to warnings from other countries. Males and females also rated the Chinese text warnings that appeared on side of packs only up until 2009 as the least likely to motivate them to quit. However, females were more likely than males to think about quitting as a result of both the pictorial warnings and the Chinese text warning that was implemented in January 2009 (on 30% of the front and back of packs). However, it should be noted that the majority of the females surveyed were non-smokers who were asked whether they would want to quit 'if they were a cigarette smoker'.
- Fong et al. surveyed adult smokers, non-smokers, and youth in four cities in 2009 and found that that pictorial warnings were consistently rated as more effective than the Chinese text warnings on measures including motivating smokers to quit and preventing youth from smoking.[12] Further analyses showed that there were no gender differences in the ratings.

As with other tobacco control policy evaluation studies, an issue in evaluating the impact of health warnings is that they are often implemented in conjunction with other tobacco control measures, for example, as part of a comprehensive law or amendment. Therefore, it can be difficult to isolate the effects of warnings from other policies. For example:

- A pre-post evaluation of Taiwan's 2009 tobacco control law amendment showed an impact on both males and females two months after the law took effect.[13] The new law strengthened previous legislation by extending smoke-free areas, implementing a total ban on tobacco advertising, and introducing graphic health warnings (covering 35% of the front and back) on tobacco packages. The findings showed an increase in thoughts about the harms of smoking and thoughts about quitting among smokers after the law, with no significant gender differences. For example, the percentage of smokers who thought about the health hazards of smoking increased from 68% before the law to 85% after the law among females; and from 64% to 89% among males. Thoughts about quitting due to the new law increased from 18% to 47.5% among females, and from 32% to 52% among males. Thoughts about quitting due to the warnings specifically increased overall from 30% to 43%, but gender differences on this measure were not examined.

These findings demonstrate that comprehensive tobacco control legislation that combines stronger warnings with other measures such as smoke-free laws is effective in raising awareness of the harms of smoking and motivating smokers to quit.

Role of SES on health warning impact

A problem with most health communications is that they typically have lower reach among lower SES groups, even though this is the target population most in need of more health information – particularly for awareness of the harms of smoking.[14,15] Health warnings, however, have broad reach and are an effective means of communicating the risks of smoking for all population groups, regardless of SES and gender. There are limited studies on how health warning impact may vary across sociodemographic groups, particularly in LMICs.[8] However, some evidence does suggest that health warnings may have even greater impact among lower SES groups and may be effective in reducing health disparities across SES groups.[4,14]

The influence of SES on health warning impact may depend on the type and content of the warnings:

- Some research suggests that warnings with graphic imagery are more effective for smokers with lower education, whereas the impact of text warnings or symbolic images does not vary by SES.[16]
- An experimental study among adults and youth in Mexico City and Uruguay evaluated different message themes and types of warnings (i.e. text or pictorial).[14] The findings showed that overall among the adult respondents, graphic warnings were rated as more effective than text warnings, and that warnings depicting a graphic health effect were more effective than symbolic warnings or depictions of lived experience. Among sub-groups, females rated warnings higher than males, and those with lower education in Mexico rated the warnings as more effective. There were no interactions between sociodemographic factors and message theme, indicating that the same warnings are viewed as effective across a range of subgroups, including gender.
- Another field experiment in Mexico found no gender differences in ratings of warning credibility, relevance, and impact. However, there were some differences according to educational status – those with higher education rated pictorial warnings with didactic text messages as more effective than the same images with testimonial text, whereas those with lower education rated both equally.[16] There were no differences across education level in ratings of warnings depicting diseased organs compared to human suffering, as all participants rated the graphic images of diseased organs as more effective. These findings suggest that pictorial warnings with graphic imagery and didactic text content are most effective across all sociodemographic groups.
- Analyses of data from ITC surveys in Mexico, Uruguay, and Brazil showed that text warnings in Mexico were more salient among males and females with higher education, but there were no educational differences in salience in the other two countries that had pictorial warnings.[8] Gender was not a significant predictor of warning salience, or cognitive and behavioral impact of the warnings in any country.
- A cross-sectional study conducted among women in Brazil in 2010 found that the majority (91.7%) reported noticing the warnings (which included graphic images on 100% of the back of packs) and 61.7% reported thinking about quitting because of the warnings.[17] The impact of warnings on quit intentions was stronger among women

with lower education compared to those with higher education. As males were not included in the study, gender differences could not be examined.

In addition to education level, age may influence the impact of health warnings among females:

- An analysis of trends in smoking among women by education level and age cohort in Spain found that exposure to pictorial warnings (which were introduced in 2010) was negatively correlated with smoking among women overall. There were some differences by education level and age: the impact of pictorial warnings was strongest for women with no formal education, and for those in the younger generations (born after 1965).[18]

Impact of warnings on pregnant women

Even though the health risks of smoking during pregnancy are well-established, some women continue to smoke during pregnancy. Prevalence rates of smoking during pregnancy vary widely across countries, with estimates of around 10% of women in the U.S. and up to 23% in Canada and Lebanon.[19,20]

Health warnings on cigarette packages represent a potentially effective method of communicating the risks of smoking in order to motivate women to quit during or before pregnancy. Warnings can also be used to promote cessation resources for pregnant women. There is some evidence suggesting that health warnings – particularly pictorial warnings specific to pregnancy-related health effects – may be effective in motivating quitting among pregnant women:

- Evidence from Canada, U.S., Australia, and Mexico suggests that graphic health warnings depicting smoking-related pregnancy risks may be especially effective for women of reproductive age.[19] Women under age 40 rated pregnancy-related warnings as more worrisome and were more motivated to quit compared to men and women over age 40. In addition, warnings with more graphic imagery (in Australia and Mexico) were more effective than symbolic imagery (used in Canadian warnings).
- A longitudinal analysis of the impact of several different tobacco control measures in Uruguay on pregnant female smokers over the period of 2007-2013 found that compared to provider-level interventions and tax increases, non-price policies (warnings and marketing) had the strongest impact on cessation, as measured by quitting during pregnancy and infant birth weight.[21] However, the study was unable to differentiate between specific policies related to warnings, as their implementation overlapped. For instance, pictorial warnings covering 50% of the front and back of cigarette packs were first mandated in 2005, with subsequent rounds of new warnings implemented in 2007, 2009, 2010, 2012, and 2013. The 2009 law (effective February 2010) also increased the size of warnings to 80% of the front and back of the pack.

Impact of health warnings on non-smokers

There is little research examining the impact of health warnings on non-smokers, although they may be effective in raising awareness of the harms of tobacco use among non-smokers, preventing smoking uptake, and discouraging smoking among family and friends. This is especially important in LMICs, where women are more likely to be non-smokers and have higher rates of SHS exposure than men.

- A study of ITC data from China examined the impact of China's text warnings on non-smokers. The study found low salience overall of the warnings (only 12% of non-smokers said they noticed warnings 'often') and high levels of support for strengthening warnings in China (about 65% thought cigarette packages should have more health information and 80% agreed that warnings should include pictures).[22] There were no significant differences between males and females on any of these outcomes. However, non-smokers who had a smoking spouse were more likely to notice the warnings and more likely to support adding pictures to warnings. These findings suggest that stronger health warnings may be even more effective among non-smoking women with a smoking spouse in China.

Impact of health warnings on other tobacco products

Overview

The WHO FCTC calls for tobacco control policies to be applied to all tobacco products, not just cigarettes. This is especially true for health warnings. Guidelines for Article 11 as well as policy statements produced by the Conference of the Parties of the WHO FCTC specifically recommend that health warnings be implemented on all tobacco product packaging, including smokeless tobacco packages and waterpipe tobacco packaging and accessories. [23,24] The Guidelines also state that different health warnings and messages should be used for different tobacco products.

However, in comparison to cigarettes, progress in implementing policies such as health warnings on other tobacco products has been slower, as smokeless tobacco and waterpipe tobacco are often exempt from legislation or lack enforcement of existing legislation. [25,26]

- In 2016, only half of FCTC Parties (51%) had laws requiring health warnings on smokeless tobacco, compared to 77% that had laws requiring warnings on cigarette packages. Moreover, only 27% of Parties had health warnings covering at least 50% of smokeless packages and only 20% had pictorial warnings.[27]
- Turkey is the only country to require pictorial health warnings on waterpipe tobacco apparatuses (covering 65% of the principal display areas on waterpipe bowls).[28]

A challenge with developing effective health warnings on other types of tobacco products is that such products come in different forms and are not always sold or encountered in packages of a standard size or shape that are amenable to uniform regulations for health warnings. For example, smokeless tobacco comes in a variety of forms including powders and loose tobacco. Therefore, even in countries that do have laws requiring health warnings for smokeless or waterpipe products, the legislation is not always clear or specific enough in terms of required size and placement of the warnings, or does not include a range of images and messages.[27] In addition, waterpipe tobacco is typically used in homes or cafés where users may not see the packs themselves as it is already prepacked or set up by staff.[29,30]

As a result, there is very little research examining the impact of health warnings on products such as smokeless tobacco and waterpipe, and even less research examining gender differences in warning impact for other types of tobacco products.

Importance of health warnings for increasing knowledge of the harms of other types of tobacco

Most of the world's smokeless tobacco users – especially female smokeless users – live in the South East Asia region.[31] While the types of smokeless products used in this region vary widely, they are known to cause significant health harms including cancer. However, knowledge of the health risks of smokeless products tends to be low, especially in rural areas.

Similarly, waterpipe tobacco is highly addictive and associated with known health risks comparable to cigarettes; yet many users are not aware of the specific health effects and misconceptions that waterpipe tobacco is less harmful than cigarette smoking are common.[20,26]

- For example, a study among pregnant women in Lebanon, where rates of cigarette and waterpipe smoking are high among women, found that knowledge of the harmful ingredients in tobacco products and the harmful effects on the fetus and newborn was lower overall for waterpipe than cigarettes. Less than half (45%) of respondents believed that waterpipe is addictive, compared to 69% for cigarettes.[20]

It is therefore important to raise awareness of the harms of all tobacco products through health communications such as warning labels.[32,33]

Evidence from LMICs on smokeless health warnings

While there is limited research on the impact of smokeless health warnings in LMICs, there is some evidence suggesting that health warnings may have a similar impact across different cultural environments with different histories of tobacco use and tobacco control. For example:

- In an experimental study in India and Bangladesh, smokeless tobacco users were shown a series of different health warnings found that, consistent with studies on the impact of cigarette health warnings, pictorial warnings were rated as more effective than text warnings, and that graphic images were more effective than symbolic or testimonial pictorial warnings.[34] However, gender differences were not examined.
- A focus group study conducted among students in the UK (85% male) in which participants viewed existing waterpipe tobacco packages (with either no health warning or non-compliant warnings in both Arabic and English) and packages with text or graphic warnings of different sizes added found that larger graphic warnings in line with FCTC recommendations were perceived to be more effective. Packages with larger health warnings and with plain packaging were viewed as less attractive and more likely to deter waterpipe use. However, as this was a qualitative study, gender differences were not examined.

India was the first country to require pictorial warnings on smokeless tobacco packages starting in 2009; however, the warnings were small (40% of the front of packages) and used symbolic images that were shown to be weak and poorly understood.[35] The smokeless warnings were changed in 2011 to include more graphic images. Longitudinal analyses of data from the ITC India Survey¹ showed that this change did not lead to any significant increases in measures of warning impact.[33] Female smokeless users were less likely overall to be aware of warnings on

¹ In India, the ITC survey is referred to as the “TCP India Survey” to avoid confusion with the India Tobacco Company.

smokeless packages compared to males; which may be because females were less likely to report using specific types of smokeless products that had mandated health warnings.

These findings demonstrate the need to develop more effective standardized warnings for smokeless tobacco packages, especially in South Asian countries where smokeless packages can vary widely in shape, size, and design.

Some countries in the South East Asia region have recently introduced stronger health warnings on smokeless tobacco packages. For example, in May 2015, Nepal implemented pictorial warnings covering 90% of the front and back of both cigarette and smokeless tobacco packages. In April 2016, India implemented larger pictorial health warnings covering 85% of the principal display areas of all tobacco products including smokeless tobacco. Although there are not yet any published studies evaluating the impact of these new warnings, unpublished experimental evidence from India suggests poor compliance with the new regulations:

- Researchers collected 54 smokeless packs from cities across India in 2016 and examined whether they met the requirements for size, position, language, and graphics. Only one pack met all the requirements and only 2% of packs met the size requirement of 85% of the package. In addition, the quality and size of the graphic warning image varied across packs, and many packs were still using the old warnings.[36]

Evidence from HICs on smokeless health warnings

Smokeless tobacco use is not very common in high-income countries (HICs). However, the few existing studies evaluating health warnings on smokeless tobacco products in HICs have suggested that pictorial health warnings may have a similar impact for smokeless tobacco as those for cigarettes. For example:

- There is some experimental evidence that graphic warnings may increase perceptions of harm of snuff among non-smokers in the US;[37] and reduce the appeal of smokeless products and increased perceived risks among Canadian smokers. [38] However, gender differences were not reported in these studies.

Evidence on waterpipe health warnings

While there is limited evidence on the implementation and impact of health warnings on waterpipe tobacco, studies have found:

- Evidence from Lebanon suggests a lack of effective health warnings for waterpipe tobacco that comply with the FCTC Article 11 guidelines.[30] At the time of the study, text warnings were required on the front and back of all tobacco product packages in Lebanon; however, the law was unclear as to the size of required warnings and thus warnings remained small (15% of the package). Researchers collected 39 waterpipe tobacco packs from Lebanon and found that while 90% had health warnings on the outer packages, all were text only and covered an average of only 3.5% of the surface area of the package. In addition, because the law only specified one warning, the text warning messages on waterpipe packages were the same as those used for cigarettes, rather than having different messages for different products focusing on the specific health

effects related to each product, as recommended by the Article 11 guidelines.² Most of the waterpipe accessories (i.e. filters, mouthpieces) did not have any warning labels.

Issues to be considered in the development of health warnings for waterpipe tobacco include placement of the warnings on the various components and accessories; size; type of messaging; and point of exposure - for example, warnings could also be placed on the apparatus or accessories that are used in cafes or elsewhere in the premises, where users are more likely to notice them (vs. on the package only).[29,30] In addition, because of the lack of data and the lack of a compelling framework or theory that would suggest differences by gender, there has been no discussion of gender in recommendations for health warnings for waterpipe tobacco products.

² Note that since this article was published, new regulations were passed in Lebanon (effective September 2012) requiring larger text health warnings (40% of the package) with specific health messages for on waterpipe tobacco.[39] However, implementation of the new rules was delayed and as of 2017, have not been implemented.[40]

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