

Picture-based health warning labels (HWLs) on cigarette packages are an essential component of a national strategy to reduce tobacco use.

Globally, over 100 countries have finalized requirements for pictorial HWLs printed on packages of cigarettes<sup>1,2</sup>. China currently uses text-only health warning labels. With the largest number of cigarette users in the world, China has tremendous opportunity to improve public health with the adoption of effective HWLs.

This study was conducted in 4 cities across China to test different HWL designs.

This research will help support the design of effective cigarette HWLs to ensure the pictures and text work together to educate smokers about the harms of smoking and encourage cessation.

### Key Findings:

- HWLs that included messages about the effects of secondhand smoke on others were rated more effective than HWLs that communicated the health consequences for smokers
- Pictures that portrayed clinical effects of smoking on the body, such as a diseased lung, were more effective than images of individuals suffering

### Study Details

#### Health Warning Label Design Elements Tested:

This study showed adult smokers different HWLs and asked them to rate each based on how effective they thought the label would be at supporting their cessation.

In total, the study tested the perceived effectiveness of 32 different HWLs. Different health effects were portrayed in the pictures, including, asthma, blindness, heart attacks, lung cancer, mouth cancer, pulmonary disease, and stroke. Text was either written as a fact detailing the effects of smoking cigarettes or as a statement detailing the personal effects of smoking or secondhand smoke exposure. Text features also differed according to who was being impacted by smoking, i.e., the smoker, or exposure to secondhand smoke, i.e., others. Pictures were either clinical in nature, showing the pathological effects of smoking, or portrayed individuals suffering, such as a person sick in bed.

**Translation:** Smoking causes blindness.



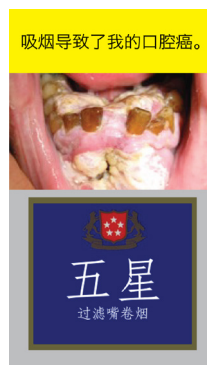
**Health effect:** blindness  
**Who impacted:** the smoker  
**Text:** factual  
**Image:** clinical<sup>3</sup>

**Translation:** Smoking causes asthma in others.



**Health effect:** asthma  
**Who impacted:** others  
**Text:** factual  
**Image:** personal suffering<sup>4</sup>

**Translation:** Smoking caused my mouth cancer.



**Health effect:** mouth cancer  
**Who impacted:** the smoker  
**Text:** personal effects  
**Image:** clinical<sup>5</sup>

**Translation:** My smoking caused her lung cancer.



**Health effect:** lung cancer  
**Who impacted:** others  
**Text:** personal effects  
**Image:** clinical<sup>6</sup>

**Methods:**

This study used a cross-sectional randomized experimental survey design. The data were collected during November 2016 in the following cities: Beijing, Shanghai, Wuhan, and Kunming. Approximately 400 adult (18+) residents from each city were recruited via street intercept to participate in our 25 minute tablet-based survey.

Participants were assigned to one of four groups, and each group included HWLs with either health impacts on the smoker or secondhand smoke impacts on an “other” and either personal effects or factual text. All participants were shown eight different HWLs, which included four images that were clinical in nature, i.e., pathological effects, and four images portraying individuals suffering. HWLs were rated based on participants’ perception of how “effective” the label was. Rating questions were conducted using a 10-point scale, with 10 being the most effective.



Data collectors in Beijing learn survey protocols.

**Results:**

A total of 1,612 adult smokers participated in the survey. The sample included 1,447 men and 165 women. Table 1 results are from participants who were daily smokers and completed all perceived effectiveness questions (n=1,592).

Study participants rated Group 4 HWLs the highest, which was statistically significantly different than all other groups, followed by Group 2 HWLs. Group 3 and Group 1 HWLs were similarly ranked and were not significantly different from each other.

**Table 1. Average (mean) rating of HWL effectiveness reported by smokers (n=1,592)**

	Mean Score (out of 10)
Group 4 – HWLs – health impact from secondhand smoke on an ‘other’, with personal effects text	7.0 (n=386)
Group 2 – HWLs – health impact from secondhand smoke on an ‘other’, with factual text	6.8 (n=404)
Group 3 – HWLs – health impact on the smoker, with personal effects text	6.5 (n=407)
Group 1 – HWLs – health impact on the smoker, with factual text	6.4 (n=395)

**Discussion:**

The evidence from this study indicates that HWLs that focus on impacts of secondhand smoke on others were rated higher than HWLs that communicate health effects on the smoker.

Most countries’ HWLs focus on the health consequences of smoking for the smoker and present factual text.<sup>7</sup> In China these HWLs were the lowest rated labels.

**References**

- <sup>1</sup>Campaign for Tobacco-Free Kids. Essential Components of Effective Labels. [http://global.tobaccofreekids.org/en/solutions/international\\_issues/warning\\_labels/](http://global.tobaccofreekids.org/en/solutions/international_issues/warning_labels/)
- <sup>2</sup>Canadian Cancer Society. Cigarette Package Health Warnings: International Status Report. October 2016 (Fifth Edition).
- <sup>3</sup>© Commonwealth of Australia
- <sup>4</sup>© Her Majesty the Queen in Right of Canada, represented by the Minister of Health (2013).
- <sup>5</sup>By Bionerd (Own work) [CC BY 3.0 (<http://creativecommons.org/licenses/by/3.0/>)], via Wikimedia Commons
- <sup>6</sup>Courtesy of Action on Smoking and Health Foundation Thailand
- <sup>7</sup>Institute for Global Tobacco Control. State of Evidence Review: Health Warning Labels on Tobacco Products. Baltimore, MD; JHSPH; October 2013.

The work was supported with funding from Bloomberg Philanthropies’ Bloomberg Initiative to Reduce Tobacco Use ([www.bloomberg.org](http://www.bloomberg.org)).