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Research Aims to Answer Court Concerns
on 'Emotional' Cigarette Warning Labels

PHILADELPHIA – A new study of cigarette warning labels finds that "emotional" images proposed by the government to complement text warnings are more believable and provide greater motivation to quit smoking than equally emotional but irrelevant images or text warnings alone.

The study addresses concerns raised by the U.S. Court of Appeals for the District of Columbia, which rejected the Food and Drug Administration's proposed cigarette labels in part on the grounds that the FDA-selected images were merely emotionally aversive. The court ruled in 2012 that the proposed labels "do not convey any warning information at all" and were "unabashed attempts to evoke emotion (and perhaps embarrassment) and browbeat consumers into quitting."

Researchers at the Annenberg Public Policy Center (APPC) of the University of Pennsylvania found that emotionally equivalent images to the ones selected by FDA – but which had nothing to do with smoking – were significantly less effective than the FDA-proposed warnings. The warnings with irrelevant images were less memorable a week later and less likely to encourage reductions in smoking over that time.

"The Importance of Relevant Emotional Arousal in the Efficacy of Pictorial Health Warnings for Cigarettes" was published online in Nicotine & Tobacco Research in December.

"Placing emotionally upsetting images on cigarette packs does more than just make the pack unpleasant to look at," said Dan Romer, APPC's director of research and a co-author of the study. "If the images reinforce the health message by showing the adverse effects of smoking, they are more memorable and more convincing than if they merely arouse unpleasant emotions."

In the study, smokers were randomly exposed to one of three types of warning labels: warnings that contained the text and images proposed by the FDA; warnings with images that were equally emotionally upsetting but had nothing to do with smoking; or warnings that contained only the text mandated by Congress. A week later, the smokers were asked to recall the warnings they had seen and report on how many cigarettes per day they had smoked in the intervening time. Smokers who were exposed to the FDA warnings were more likely to recall the health messages and report less smoking in the interim.

The results are consistent with other research showing that emotionally arousing images on cigarette packs convey more information than warnings that contain only text and encourage smokers to consider quitting to a greater degree than text-only warnings. However, the findings

also show that not any images will be effective. The images must help to reinforce the health message rather than to distract from it.

Since the court decision, considerable evidence has accumulated showing that warnings with emotionally arousing images are more effective than warnings with only text. But the FDA has not proposed new warning labels to meet the court's First Amendment objections that pictorial warnings merely serve to debase cigarette packaging rather than serve a public health objective.

The study involved 320 participants who were recruited in September of 2014 via Amazon Mechanical Turk and who completed the experiment one week after their exposure to the warnings. Among the images they viewed were the original ones proposed by the FDA, including a smoker with a tracheotomy and a cancerous lung. Emotionally equivalent non-relevant images included depictions of snakes and a decapitated animal.

Should the FDA pursue the use of graphic warnings for cigarettes, the pictures chosen should be screened to be as consistent as possible with the text messages, the researchers said. "Our study shows that pictures without a strong connection to the warning will only inhibit the effectiveness of the warning," Romer said.

To date, more than 70 countries have adopted pictorial or graphic warning labels for cigarettes. In 2009, Congress passed the Family Smoking and Tobacco Control Act, which mandated the use of nine text messages, some of which have information that has never appeared on cigarette packs in the United States (for instance, smoking can kill you). In addition, the act required the FDA to place "graphic images that illustrate the risks of smoking" covering 50 percent of the front and back of cigarette packs.

Although rates of smoking have declined overall in the U.S., there are still more than 36 million adult smokers, according to the Centers for Disease Control and Prevention (CDC). In 2015, about 1 in 4 high school students used some type of tobacco product, according to the CDC.

Besides Romer, the APPC research team included former APPC postdoctoral fellows Zhenhao Shi and An-Li Wang, now at the Perelman School of Medicine at the University of Pennsylvania; and Lydia F. Emery, now at Northwestern University, and Kaitlin M. Sheerin, now at the University of Missouri.

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