Probing ways to convince young women not to use indoor tanning

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Messages with images depicting the harsh realities of melanoma are more powerful than the text-only warning required by the U.S. Food and Drug Administration in persuading women to reconsider indoor tanning. This is according to a new study by Georgetown Lombardi Comprehensive Cancer Center researchers.

The study, published in the *American Journal of Public Health*, is the first to examine use of persuasive messaging and graphic imagery for indoor tanning device warnings—the source of thousands of skin cancer cases, including melanoma, each year.

"In terms of a public health issue, indoor tanning is a perfect storm—young people, primarily women, indoor tan, which raises their risk of potentially deadly skin cancer. Yet, there are few prevention efforts targeting young adult women," says the study's lead investigator, Darren Mays, PhD, MPH, an assistant professor of oncology at Georgetown Lombardi Comprehensive Cancer Center in Washington.

Research shows that nearly 30 percent of young U.S. non-Hispanic white women use indoor tanning machines annually, and half of these women tan 10 times or more every year.

"The stakes are really high because indoor tanning is a source of cancer that is entirely preventable," says Mays. He points out that the U.S. Surgeon General released a report last year that found skin cancer is the most common malignancy in the U.S. with nearly four million cases diagnosed each year costing consumers $8 billion annually in treatment, lost work time and other costs.

Indoor tanning accounts for an estimated ten percent of these cases, Mays says. Melanoma, the most deadly form of skin cancer, is among the most commonly diagnosed cancers among young women under the age of 40, he adds.

In 2014, the U.S. Food and Drug Administration published a new rule changing indoor tanning machines to class II devices. These devices are now required to display a text-only warning reading: "Attention: This sunlamp product should not be used on persons under the age of 18 years."

"But that warning likely does little to convince women 18 or older not to use these machines," Mays says.

To find messages that might work, Mays used Amazon Mechanical Turk (AMT), a crowdsourcing Internet marketplace, to enroll into his study 682 non-Hispanic white women ages 18-30 who tanned indoors at least once in the past year.

He then showed the participants five messages in random order. One was text only and based on FDA warnings for indoor tanning devices. Two of the messages were "gain-framed" warnings—those highlighting the benefits of avoiding indoor tanning. One showed the pale yet peachy face of an attractive young woman. Part of the text said, "Avoiding indoor tanning will help keep your skin healthy. If you avoid indoor tanning, you can reduce your risk of skin cancer, one of the most common forms of cancer among young women."

Two other messages were "loss-framed" because they emphasized the risks of indoor tanning. One depicted five images of melanoma, with the words: "Indoor tanning causes skin cancer, including deadly forms of skin cancer. Every time you tan, you increase your risk of skin cancer, one of the most common forms of cancer diagnosed in young women."

Mays found that loss-framed messages were more effective than gain-framed warnings in decreasing the tanners' intention to continue tanning. But both loss- and gain-framed messages were more effective than the FDA-based text in increasing women's intentions to quit tanning.

Provided by Georgetown University Medical Center