

Online smoking intervention shows cost-effective way to distribute health resources worldwide

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Smoking harms nearly every organ in the body and causes many diseases. Credit: CDC/Debra Cartagena

An online smoking cessation program that offered personalized guidance and support free of charge to smokers worldwide prompted thousands to quit, and should be used as a blueprint for other global health initiatives, according to one of its founders.

Ricardo F. Muñoz, PhD, professor emeritus of psychiatry at UCSF and based at the UCSF-affiliated San Francisco General Hospital and Trauma Center, and director of the Institute for International Internet Interventions for Health at Palo Alto University, said the stop smoking program could be tailored to reach patients with other behavioral and mental disorders, creating a "digital apothecary" available to everyone with Internet access.

In a study published today in the journal *Clinical Psychological Science*, first author Muñoz and colleagues tracked the progress of close to 7,500 smokers who had enrolled in the eight-week program offered in English and Spanish for 18 months. The study expanded upon a previous one that followed smokers for a 12-month period.

The researchers recruited participants through a Google campaign that targeted Internet users searching for information on how to stop smoking. Participants were given several online options including tips on banishing the cues that nudge would-be nonsmokers to light up, a mood-management course, guidance on nicotine replacement and a virtual bulletin board where they could seek advice and offer support to one another.

In the two study periods totaling 30 months, nearly 300,000 people visited the site, which offered a free downloadable [smoking cessation](#) guide developed by co-author Eliseo J. Pérez-Stable, MD, of the UCSF Division of General Internal Medicine. Of the 15,170 enrollees who completed a baseline survey in both studies, 3,479 reported quitting at least once during follow up of up to 12 months. Quitting was defined as seven days of abstinence.

The researchers calculated that a single full-time practitioner using face-to-face counseling would require almost 70 years to successfully treat the same number of smokers as the online intervention, at a cost that would

have been markedly higher than the amount spent maintaining the website. Alternatively it would have cost more than \$3.6 million in nicotine patches to help the same amount of people to stop smoking.

In contrast, the cost of recruiting smokers and maintaining the previously research-tested online program for 30 months was \$200,000, the researchers reported.

While attrition rates were high, the researchers said that the program, called MOOI, massive open online intervention, can serve as a "low-cost resource made available to people everywhere who may lack other relevant health resources" without placing a burden on countries' health care systems. Some 40 percent of the visitors to the English-language site came from India, versus 10 percent from the United States, while the largest markets for the Spanish-language site came from Spain, Argentina and Mexico.

"Our goal is to address the high attrition rate and make MOOIs more appealing, perhaps gleaning the benefits of lessons learned in other fields like marketing, computer science and human-computer interaction," said Muñoz.

A further advantage was that digital interventions are not "consumable," meaning they can be used "again and again by people anywhere in the world," the researchers noted.

"Traditional service delivery models are insufficient to curb the burden of mental illness and behavioral health problems, because they rely on consumable interventions, such as health care providers' time and pharmaceuticals like the nicotine patch. We propose that the [health care](#) field devote organized efforts to create a digital apothecary of MOOIs in order to reduce unnecessary suffering worldwide, by freely sharing and continuing to generate and evaluate, psychological resources for all who

are interested in using them," said Munoz.

The researchers currently are recruiting English and Spanish-speaking participants for a subsequent [smoking cessation study](#).

More information: "Massive Open Online Interventions: A Novel Model for Delivering Behavioral-Health Services Worldwide." *Clinical Psychological Science* 2167702615583840, first published on May 13, 2015 [DOI: 10.1177/2167702615583840](https://doi.org/10.1177/2167702615583840)

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