


# Targeting Nonsmokers to Help Smokers Quit: Features of a Large-scale Intervention

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**ABSTRACT:** Smoking continues to be a major public health problem, despite a substantial decline in prevalence rates over the last decades. Quit smoking interventions typically target smokers, whether through individual or group treatment or through broader public health campaigns. Yet, nonsmokers represent a vast and largely untapped resource to help smokers quit. This article describes an innovative approach that targeted nonsmokers through a media-style campaign with repeated reminders about smoking cessation. We tested the nonsmoker intervention in a large randomized trial and showed it to be effective in helping smokers quit. Components of the intervention included repeated mailings with relevant cessation messages over a 10-week period, 2 brief check-in telephone calls, and access to a study Web site. In this article, we discuss details of the intervention development, content, and implementation.

**KEYWORDS:** Smoking cessation, social support, materials intervention, health messaging

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## Introduction

Smoking continues to be the most preventable cause of mortality and morbidity in the United States despite an impressive reduction in the prevalence there over the last decades.<sup>1,2</sup> Yet, medical treatment for people with smoking-related illnesses still accounts for significant costs to an already overstrained healthcare system.<sup>3</sup> Moreover, the once striking reduction in adult smoking prevalence in the United States appears to have slowed in recent years.<sup>1,2</sup>

Tobacco control professionals still puzzle over how to reduce smoking prevalence. The primary focus of smoking cessation programs has not changed significantly over time. There is a long tradition of viewing cessation from the perspective of tobacco users.<sup>4</sup> Most cessation programs focus on increasing motivation for change and relapse prevention interventions for smokers, such as individual or group behavioral counseling and pharmacotherapy.<sup>5–9</sup> An alternative approach is to focus more on nonsmokers and the changing social norms around smoking and smoking cessation.<sup>10–13</sup> As there are many more nonsmokers than there are smokers in the United States, nonsmokers represent a vast, yet largely untapped, group for changing social norms around smoking. As a rule, nonsmokers are the primary advocates behind policies to restrict smoking in public places and to raise taxes on cigarettes.<sup>14,15</sup> Some tobacco control experts have argued that antismoking policies such as these are as critical in reducing smoking prevalence as treatment programs that directly intervene with smokers.<sup>16</sup>

Another way nonsmokers can help reduce smoking prevalence is to exert their social influence on smokers to quit; the attitudes and actions of nonsmokers can motivate smokers to

make a quit attempt.<sup>17</sup> Specifically, nonsmokers can take a proactive stance, encouraging smokers to quit and assisting them in the process. Examples include banning smoking in the home or obtaining quitting aids such as nicotine patches for smokers.

Support from nonsmokers is positively correlated with quitting behavior among smokers.<sup>11,18,19</sup> However, when it comes to quit attempts and sustained cessation in particular, interventions encouraging nonsmoker support for smokers have not shown consistent results,<sup>20–22</sup> and evidence for effective ways to activate nonsmokers to intervene and to provide appropriate support is scant.<sup>11,23</sup> In fact, some actions by nonsmokers such as “nagging” can decrease cessation efforts by smokers, producing the opposite effect from that intended.<sup>24,25</sup> Most smokers say that quitting is difficult. Indeed, many people in recovery from other substance use disorders report tobacco as the hardest substance to quit.<sup>26</sup> It is not surprising that for family members or friends, just having the desire to help a smoker quit is often insufficient. Nevertheless, with proper knowledge and guidance on motivational strategies for cessation, nonsmokers could be a valuable asset. For example, Patten and colleagues<sup>11,27</sup> demonstrated that a support-person intervention is effective in increasing smoker utilization of a quitline (telephone-based service for tobacco cessation); use of quitline counseling is associated with successful tobacco cessation.<sup>28</sup> Targeting the social support system of a smoker is a viable way to increase the reach of quitlines and other stop-smoking programs.<sup>10,29</sup>

## Materials and Methods

In this article, we provide details of a successful intervention protocol used in a large randomized controlled trial, conducted by



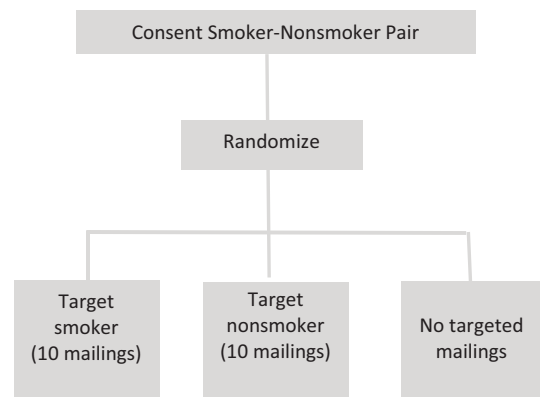
California's quitline, the California Smokers' Helpline (CSH). The study used a 3-group randomized design with 3110 smoker-nonsmoker pairs and evaluated at 3 and 7 months. Participants were from California and Oklahoma and recruited through 2-1-1 health information services. After participants provided informed oral consent, we randomly assigned smoker-nonsmoker pairs in the same household to 1 of 3 conditions; (1) series of 10 mailings targeting the smoker; (2) series of 10 mailings targeting the nonsmoker; and (3) no targeted mailings, which served as a control condition. See Figure 1 for a depiction of the study design.

The repeated mailings were meant to mimic a media-style campaign, one that exposed the intervention groups to materials with consistent cessation messages over time. Participants could access these materials in digital form as well, from study Web sites created for each of the 2 intervention conditions. In addition, the CSH study staff (counselors) attempted to conduct 2 brief check-in calls with participants in each of the intervention groups to determine whether mailings arrived as intended and to answer any study- or cessation-related questions. Also, we provided participants with a dedicated toll-free phone number to call with any questions or concerns.

Study outcomes for both intention-to-treat and complete case analyses included quit attempt rates (quit for at least 24 hours) and self-reported point prevalence quit rates at 3 and 7 months after study enrollment. It should be noted that biochemical validation is not generally used for large public health trials.<sup>30</sup> In addition, for this study, we could verify smoking status using support partner corroboration, which provided an added degree of confidence in the outcomes.<sup>31</sup> The trial showed that cessation messages targeting nonsmokers effectively increased smokers' quitting behaviors, without the program intervening directly with smokers.<sup>32</sup> This study demonstrated how targeting nonsmokers could effectively put into practice a large-scale intervention, namely a media-style campaign, as a new avenue for tobacco control efforts.

### Guiding principle

The guiding principle for the intervention was to deliver effective cessation messages repeatedly over time to all participants in the intervention conditions. We were particularly interested in seeing whether there was any effect on cessation among smokers in the condition targeting nonsmokers. As discussed earlier, targeting nonsmokers to help smokers is not a new idea in itself.<sup>19</sup> However, intervening with nonsmokers to support non-treatment-seeking smokers, with repeated reminders of available help, is novel. That is, rather than teach nonsmokers how to help smokers already in cessation programs, this intervention provided recurrent cessation messages to nonsmokers in households where smokers may not have even been considering quitting, messages designed to encourage quitting behavior. To accomplish this, we identified a set of cessation messages and attempted to optimize their intensity level through multiple, repeated mailings and 2 brief phone calls. We tried to



**Figure 1.** Project BEST study design. BEST indicates *Bring an End to Smoking—Together*.

provide a balance of strong, coherent messages repeatedly, without becoming aversive or saturating, and without having the reverse effect of being insignificant and underwhelming. We designed the messages to be unambiguous and consistent. Specifically, we conveyed that it often takes multiple attempts to quit for good<sup>33</sup> (and therefore multiple attempts to help someone quit). The key message for smokers was, “Quitting takes practice. Keep trying.” For nonsmokers, we asserted, “Quitting is hard. You can help.” Our hope was to remove the fear of quitting (and of helping) by normalizing this process. In addition, the name of the project itself, Project BEST (*Bring an End to Smoking—Together*) communicated the idea that through a collaborative effort between smoker and nonsmoker, the probability of quitting would increase.

### Intervention components

**Mailings.** The primary intervention of the study was repeated mailings. There were several goals for the mailings. First, as there was no guarantee that participants would open their mail and view all materials, it was necessary to create stand-alone intervention pieces. That is, each mailing functioned independently with all pertinent target messages and resource information, in case participants looked at only one of the intervention pieces during the course of the study. For participants who provided email addresses, we also emailed digital versions of the intervention pieces.

Second, the materials contained themes that were relevant to both smokers and nonsmokers. Materials for participants in the smoker condition, such as the introductory pamphlet, stop-smoking booklet, and psychoeducational DVDs and CDs, emphasized effective strategies like building motivation to change,<sup>34</sup> developing cessation skills,<sup>35</sup> normalizing multiple quit attempts,<sup>33</sup> and reviewing lessons learned from ex-smokers.<sup>36</sup> For those in the nonsmoker condition, the introductory pamphlet, help-a-smoker quit booklet, and psychoeducational DVDs and CDs focused more on topics like understanding the challenges of quitting, decreasing discouragement while helping, communicating effectively during the quitting process,<sup>21,37,38</sup>

and reviewing lessons learned from family and friends who had helped a smoker quit.<sup>36</sup> The DVD for those in the nonsmoker condition entitled “Timing, Tone & Trash Talk; How to Talk with Someone About Quitting Smoking” exemplified our main approach with nonsmokers. In short, the DVD showed that to help a smoker quit, it is important to consider when to bring up the topic so that there are no distractions (Timing), how to bring up the topic in a respectful and supportive manner (Tone), and what kind of words (eg, put-downs) to avoid to minimize defensiveness in the smoker (Trash Talk), all ideas consistent with a motivational interviewing and humanistic approach to helping.<sup>34,39</sup> We called these strategies the 3Ts. Although targeted to group, we included cessation topics and resources that would be useful to smokers and nonsmokers alike, in case the person opening the mail shared the materials with others in the household.

Third, the materials displayed a call to action such as “Call for more information.” All materials listed a phone number for participants and a Web site address for their respective intervention group. Fourth, the materials had a low literacy demand. We wrote text that was at or below a sixth grade level, minimized the number of words, maximized “white space,” and used pictures whenever possible.<sup>40</sup> Fifth, we wanted the materials to have visual appeal. We tried to make the smoker and nonsmoker materials equally appealing with similar mediums, formats, and images. We offered free materials in a variety of formats (eg, postcard, poster, greeting card, picture-frame magnet, coupon, DVD, CD, fact sheet, stickers) to increase the likelihood that at least 1 format would catch the eye of participants. See Figure 2 for examples of the targeted materials. Furthermore, we personalized all packages and envelopes with handwritten names and addresses in blue ink, to reduce the chance that participants would mistake the mailings as junk mail and to increase the chance that they would open them.

*Telephone calls.* The CSH study counselors made up to 7 attempts to complete each of two 3- to 5-minute check-in calls after enrollment to participants in the targeted mailing conditions, at 3 weeks and again at 6 weeks. We used the check-in phone contacts to determine whether the intervention mailings arrived as intended and whether participants had reviewed any of them. We also used these short calls to reinforce cessation messages highlighted in the mailings. They also provided an opportunity to answer any study- or cessation-related questions, to explore which materials were most memorable, to remind participants of the free offers, and to provide cessation help to smokers or helping tips to nonsmokers if interested.

*Web sites.* We developed separate Web sites for each of the 2 intervention groups, with content specific to that condition. Each site housed quit smoking information such as electronic versions of cessation booklets and fact sheets on a range of related topics, as well as tips on quitting smoking or helping someone quit. In addition, on the Web site for those in the

smoker condition, there were psychoeducational videos on the processes of quitting and testimonials from smokers who had quit. On the Web site for those in the nonsmoker condition, there were videos on helping considerations, as well as testimonials from people who had helped smokers quit. Each site also offered the free items highlighted in the group-specific intervention mailings. The main goal of the Web site was to have a central location for participants in the intervention conditions to access cessation-related materials and any of the information and resources offered in the mailings.

### *Material development*

Before the main study began, we did field testing to help determine best choices for materials and best procedures for mailing. In-house cessation experts created a set of materials for each condition, targeting either smokers or nonsmokers. We then consulted outside experts with experience in media-type cessation interventions and members of the target population for feedback. After reviewing all comments, reaching consensus through interactive dialogue between internal and external experts, and integrating relevant feedback, we hired marketing and media consultants to revamp the materials and to create additional audio and video recordings. One theme from the pilot feedback, for example, was that it was difficult to distinguish between materials targeted for smokers and those for nonsmokers. In our next round, we made changes with this feedback in mind. For instance, we color-coded the pieces by condition and, where possible, used group-specific images such as couples or families for the nonsmoker condition and individuals for the smoking condition. We provided content and image suggestions for the materials and wrote scripts for all of the videos. Through an iterative process, the marketing agency produced the final products.

### *Intervention schedule*

We designed the intervention schedule to mimic a media-style campaign that would last for 10 weeks. Specifically, we exposed participants to repeated messages through the mailed materials, much like a schedule of ads in a multimedia campaign.<sup>41,42</sup> In addition, we offered free nicotine patches to eligible smokers (a desirable incentive) early in the process to help generate a sense of goodwill and positive feelings toward the program. All materials matched the target group based on randomized condition. Table 1 shows the mailed intervention sequence for Project BEST, including the live calls, by the target group.

### *Quality assurance and supervision*

We established and maintained quality control through daily reports that provided numbers on recruitment, intervention mailings, and intervention calls. For the mailings, once we randomized participants into their respective conditions, we matched them with the appropriate materials. We color-coded



Introductory pamphlet cover and back page (Smoker)

**Project BEST Helpline**  
All services are free.

**Quitting Takes Practice. Keep Trying.**

The Helpline is here for you. Our experienced staff can help you set up your personal plan for quitting.

**You can quit!**  
"I didn't want to call at first, but I'm glad I did. My quitting coach gave me a lot of good ideas. Now I've been quit for almost a year and I feel great."  
-Joe, age 43

**Service Hours:**  
Monday-Friday 7 am-9 pm (PT), 9am-11pm (CT)  
Saturday 9 am-1 pm (PT), 11am-3pm (CT)  
1-800-987-2921



**Call us NOW**  
**1-800-987-2921**



[www.endtosmoking.org](http://www.endtosmoking.org)

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Introductory pamphlet cover and back page (Nonsmoker)

**Project BEST Helpline**  
All services are free.

**Quitting is hard. You can help.**

The Helpline is here for the smoker in your life. Our experienced staff can help them set up a personal plan for quitting.

**You can help!**  
"I told my husband to call Project BEST. He never did, so I called. They sent me a booklet to give him. I wasn't sure how he'd take it. But he actually read it and called for himself! He's been quit for almost a year. Even though he hasn't said so, I know he's glad I didn't give up on him."  
-Brenda, age 47



**Service Hours:**  
Monday-Friday 7 am-9 pm (PT), 9am-11pm (CT)  
Saturday 9 am-1 pm (PT), 11am-3pm (CT)  
1-800-987-2921

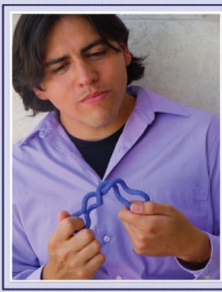

**Call us NOW**  
**1-800-987-2921**



[www.helpasmoker.org](http://www.helpasmoker.org)

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Tangle offer – card front & back (Smoker)

Once you pick it up, it's hard to put it down!

It twists and moves into all kinds of shapes. Even better, it can help with stress and with quitting smoking.

Call 1-800-987-2921 for a free Tangle.



Quitting takes practice. Keep trying.  
[www.endtosmoking.org](http://www.endtosmoking.org)

**It's a Tangle!**

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Tangle offer - card front (Nonsmoker)



**It's a Tangle!**

Last chance offer – card front & back (Smoker)



**Call 1-800-987-2921 and ask for the items you want.**



Nicotine Patches



Talking Pedometer



Tangle



Picture-Frame Magnet



Quitting takes practice. Keep trying.  
[www.endtosmoking.org](http://www.endtosmoking.org)

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Last chance offer – card front & back (Nonsmoker)



**Call 1-800-987-2921 and ask for the items you want.**




Nicotine Patches



Talking Pedometer



Tangle



Picture-Frame Magnet



Quitting is hard. You can help.  
[www.helpasmoker.org](http://www.helpasmoker.org)

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Figure 2. (Continued)

DVD cover  
(Smoker)DVD cover  
(Nonsmoker)

**Figure 2.** Project BEST—example intervention materials. BEST indicates *Bring an End to Smoking—Together*.

mailings to differentiate groups and to avoid sending the wrong materials. We also conducted weekly checks to make sure we sent all materials correctly, according to randomized group.

For counseling staff, supervisor-facilitated weekly counselor meetings and daily opportunities for individual consultation provided a forum to discuss study-related issues as appropriate. Research and clinical staff also met monthly to discuss study implementation and data gathering procedures. Finally, the project manager for study staff held bimonthly update meetings. During these meetings, staff discussed case scenarios and reviewed best practices.

Another check on the quality of the intervention was the information collected at the time of evaluation (3 and 7 months after enrollment). Evaluation staff, who were not part of the intervention team, called participants and asked about overall satisfaction with the program along with questions on usefulness of the materials. Results showed that most nonsmokers who received the targeted nonsmoker materials were satisfied with Project BEST (>80%). Nearly all (90%) remembered receiving the intervention materials, and of those, over three-quarters reported viewing some or all of them, and 95% rated the materials as helpful. The nonsmoker DVD testimonials were seen as particularly useful. In addition, more than 90% of nonsmokers reported that they gave the free nicotine patch invitation to smokers, indicating a strong willingness to offer quit smoking resources to smokers. Most (80%) nonsmokers in the nonsmoker target condition reported the number of mailed materials they received as just right.

## Discussion

In this article, we described the details of a successful intervention that targeted nonsmokers to increase cessation among smokers. This is the first intervention to our knowledge where targeting nonsmokers increased quit attempts and cessation among smokers, without intervening directly with smokers. Previous research utilizing nonsmokers focused primarily on providing support for smokers.<sup>11,19,22</sup> Evaluation data from the randomized trial referenced in this article showed that smokers in the nonsmoker target condition did just as well with quit attempts and cessation as those in the smoker target condition and better than those in the control condition.<sup>32</sup>

At first pass, it is reasonable to think that support from nonsmoking family members would help increase cessation for smokers. However, prior studies on nonsmoker support for cessation have not always yielded positive results. It is true that some longitudinal studies showed that increasing the support level encourages more quitting or less smoking.<sup>22,24,43</sup> However, results from other studies emphasizing cessation interventions were equivocal, possibly because they did not adequately increase social support<sup>37,44</sup> or perhaps because they focused on treatment-seeking smokers. It may be more difficult to see differences in intervention approaches if participants across intervention groups are already sufficiently motivated to quit and to seek treatment.<sup>22,27</sup>

Unlike most previous studies, we focused on nonsmokers in the general population, many of whom were living with smokers who were not necessarily thinking about quitting at the time of the study. Actually, at any given time, most smokers in

Table 1. Project BEST—intervention schedule.

WEEK	1	2	3	4	5	6	7	8	9	10
DAY	2	8	15	22	29	36	43	50	57	64
Both groups	<p>Welcome letter, Consent, Study Bill of Rights</p> <p><b>Sticker</b> Fresh Air Zone—for the home</p>									
Smoker group	<p><b>DVD/CD</b> Quitting Smoking: How to Make it Look Easy</p> <p><b>Pamphlet</b> Quitting Takes Practice: Keep Trying</p> <p><b>Booklet</b> Quit Smoking for Good: The Decide Guide</p>	<p><b>Coupon</b> Nicotine Patch Offer</p> <p><b>Business Cards—Tips</b> Quitting takes practice. Keep trying.</p>	<p><b>DVD/CD</b> Get Help with Quitting: It's Your Call</p>	<p><b>Picture Frame Magnet</b> You Can Quit Smoking: Never Never Stop Trying</p>	<p><b>DVD/CD</b> Quitting Smoking: Stories From Those Who've Been There</p>	<p><b>Fact Sheet</b> Making Your Home and Car Smoke Free—Smoker version</p>	<p><b>Tangle</b> Offer for a twisty toy to keep hands busy for smoker</p>	<p><b>Poster</b> Fun cartoon on quitting smoking and reaching out for help</p>	<p><b>Pedometer</b> Offer for free device</p> <p><b>Fact Sheet</b> The Health Benefits of Quitting Smoking—Smoker version</p>	<p><b>Last Chance</b> I Got Mine. Did You Get Yours?—Final offer to receive any item sent before</p>
<p><b>3-WEEK CALL</b>      <b>6-WEEK CALL</b></p>										
Nonsmoker group	<p><b>DVD/CD</b> How to Help a Smoker Quit: Timing, Tone, &amp; Trash Talk</p> <p><b>Pamphlet</b> Quitting Is Hard: You Can Help</p> <p><b>Booklet</b> How to Help a Smoker Quit</p>	<p><b>Coupon</b> Nicotine Patch Offer—to give to smoker</p> <p><b>Business Cards—Tips</b> Quitting is hard. You can help.</p>	<p><b>DVD/CD</b> Quitting Is Hard for the Helper</p>	<p><b>Picture Frame Magnet</b> Never Never Stop Trying—You can Help</p>	<p><b>DVD/CD</b> Helping a Smoker Quit: Stories From Those Who've Been There</p>	<p><b>Fact Sheet</b> Making Your Home and Care Smoke Free—Nonsmoker version</p>	<p><b>Tangle</b> Offer for a twisty toy to keep hands busy for smoker and nonsmoker</p>	<p><b>Poster</b> Fun cartoon on helping a smoker quit</p>	<p><b>Pedometer</b> Offer for free device to give to smoker</p> <p><b>Fact Sheet</b> The Health Benefits of Quitting Smoking—Nonsmoker version</p>	<p><b>Last Chance</b> We Got Ours. Did You Get Yours?—Final offer to receive any item sent before</p>

Abbreviation: BEST, Bring an End to Smoking—Together.



the general population are not ready to quit within a month.<sup>45,46</sup> This was also true for smoker participants in this study—close to 60% reported not being ready to quit within a month. We launched a media-style campaign with repeated messages over a 10-week period in an attempt to cast a wide net over smokers and nonsmokers. The positive effect we discovered in targeting nonsmokers could be due in part to reaching unready-to-quit smokers in the process. The targeted intervention may have positively affected cessation behavior because lower overall motivation level across groups leaves more room for change and offers a greater likelihood of detecting any intervention-induced change.

In addition, there were no explicit expectations for smokers to quit, or for nonsmokers to “push” smokers to quit, while in the study. Participants had complete control over whether or not to take action. We delivered the mailings, with their varied formats and clear cessation messages, to the intervention groups consistently over an extended time. This kept a cessation message regularly in front of participants, without a demand for change. People often rebel against overt directives or being pressured into action.<sup>34</sup> However, repeated exposure to meaningful cessation information, access to cessation resources, and offers of support may have been enough to minimize defensiveness and boost cessation-related behaviors among participants.

Finally, in one way or another, the nonsmoker materials emphasized that to be helpful it is vital to understand the quitting process. We conveyed that quitting can be difficult and that the chance of increasing cessation among smokers is greater when nonsmokers are understanding and supportive, rather than “nagging.”<sup>24,25</sup> We did not expect, nor encourage, nonsmokers to become “counselors” for the smoker. Instead, we tried to illuminate the challenges of quitting, to increase empathy, knowledge, understanding, and patience among nonsmokers. At the same time, we provided resources for the nonsmoker to give to the smoker, like offers of free nicotine patches and quitline counseling. These resources were all aimed at encouraging nonsmokers to be engaged and supportive in the quitting process while reducing their overall burden to help. The guiding principle of repeated mailings acted as regular reminders to nonsmokers and smokers that help was available and, we believe, increased accountability in a supportive and caring manner. This, in turn, can help explain how the intervention protocol had a positive impact on cessation.

In this study, we examined both nonsmokers and smokers with particular interest in how targeting nonsmokers might influence cessation for smokers. Repeated mailings were the primary feature of intervention. The mailings conveyed a common message. For smokers the message was, “Quitting takes practice. Keep trying.” The message for nonsmokers was, “Quitting is hard. You can help.” We learned that a simple message works. In other words, an explicit message, one that targets smokers and one that targets nonsmokers, delivered over time in a media-style

campaign, can each have a positive effect on cessation. Also, we learned that rather than focusing solely on smokers and waiting for them to initiate treatment, as is common in traditional quit smoking programs, targeting nonsmokers without directly intervening with smokers is a viable approach to cessation. The targeted nonsmokers in the study received and viewed the intervention materials in high numbers and found them to be useful, as evidenced by the positive study results. Taken further, since there is a much larger number of nonsmokers than smokers in the United States, a media-style campaign similar to the one described in this article has the potential to decrease smoking prevalence at the population level.

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### Author Contributions

GJT: Conceptualization, implementation, first draft

LSZ: Conceptualization, implementation, critical comments and editing

SEC: Conceptualization, implementation, evaluation and writing

SHZ: Conceptualization, implementation, evaluation and writing

### Informed Consent

This study was approved by the Institutional Review Board at the University of California, San Diego (IRB no. 130764). Participants provided informed oral consent.

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