

# Chapter 18

## Reaching Latinos Through Social Media and SMS for Smoking Cessation



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### Background

Smoking is the leading cause of premature, preventable death in the country, accounting for about 480,000 deaths per year, including 41,000 from secondhand smoke. This means that one in five deaths per year are due to cigarette smoking. Tobacco's impact on cancer and heart/lung disease is well known [1, 2]. Of all smoking-related premature deaths, about 36% are due to cancer, 39% due to heart disease, and 24% due to lung disease. In general, mortality among smokers is three times higher than that among nonsmokers. On average, smokers die 10 years earlier than nonsmokers and cost billions of dollars to the nation, including \$170 billion in direct medical care; more than \$156 billion in lost productivity due to tobacco-related diseases and disability, of which \$5.6 billion are due to secondhand smoke exposure [2–4].

In Texas, smoking kills more than 25,000 people per year and 3000 of those are in South Texas [5]. Almost 90% of adult smokers start smoking by age 18, and almost all (99%) of daily tobacco users try their first cigarette by age 26 [2]. Smoking prevalence is highest (23.5%) among US young adults aged 18–29 and even higher among those with less than a high school education (28.7%) and those living at or below the poverty level (25.5%) [1, 2, 6–8]. About 24% of Latinos aged 18–39 in

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the program areas are current smokers [6]. Among young adult Latinos aged 18–29 in the study areas, smoking rates are similar to those in this age group nationally and the state overall [7]. Smoking rates are low among older Latinos in Texas, and notably higher among young adult Latino men than women.

For young adults, particularly among lower-income Latinos, mobile and social media are increasingly viable communication choices [9–12]. Nine out of ten Latino adults own a smartphone [9] and have a Facebook account, making Facebook the most frequently used social media platform in this group [10, 11]. Latino young adults are heavy users of mobile-only texting, apps, and Internet, and trends in use of mobile-only social media are rapidly rising among lower-income Latinos [11]. Smartphone social media interventions are an innovative, evidence-based, recommended approach for promoting healthy behavior changes among young people [13–18].

Telephone counseling is a well-studied service with strong evidence of effectiveness [19], particularly among younger smokers—among whom rates of cessation are more than doubled by telephone counseling [20–23]. However, telephone counseling services reach only 1–2% of smokers annually and only 0.9% of Latinos [24, 25]. Online and mobile applications have also been validated by research indicating similar levels of effect on cessation rates at much lower unit costs [13, 14, 26–28]. Smartphones have the potential to provide personalized smoking cessation support. Research has shown that support delivered via mobile phone text messaging doubled rates of biochemically validated smoking cessation rates at 6 months over controls (10.7% vs. 4.9%) [13]. More recent studies, including a Cochrane Review [26], concluded unambiguously that texting interventions can significantly increase odds of successful smoking cessation, with a pooled RR of 1.7, with some studies performing even better [26]. Motivational messages and behavior-change methods in phone or face-to-face smoking cessation support can be modified for delivery via text messaging combined with social media with content tailored to the quitter's gender, ethnicity, and age [13, 27, 28]. Thus, support can be delivered where the person is located without them having to attend services, providing anonymity people like, and it can be interactive, allowing participants to get extra help if needed [13, 27, 28]. Text messaging can also include embedded links to videos and other content to offer peer modeling for cessation behaviors [29]. Its usefulness can be further increased by adding connections to social media and obtaining user profiles to personalize messages to gender and marital and parental status [30]. Young smokers, and particularly lower-income Spanish-speaking young adults for whom mobile devices are a primary point of Internet access, can be effectively served by text messaging cessation program methodology [13, 14, 27–29, 31].

We present results from Quitxt, a text-messaging tobacco cessation program promoted via social media to reach young adult Latinos aged 18–29 in South Texas, a marginalized population with low access to cessation services.

## Methods

The Quitxt geographic area is South Texas, a 53,000-square-mile area that borders Mexico and contains 4.9 million people. This region includes the Rio Grande Valley, one of the most medically underserved and impoverished areas in the nation, characterized by gaps in public health services, poor access to health care, significant environmental health concerns, and elevated chronic disease rates. About 72% of young adults in this region are Latino [32]. Of this region's 38 counties, 25 are rural and 21 are Health Professional Shortage Areas. The region's population is more than 30% uninsured, younger and less educated than the state average, and experiences high poverty rates (23.6%). About 70% of residents in this region speak Spanish at home [32, 33].

### *Program Development*

Formative research took place during the first 6 months of the program, including review of existing evidence-based short message service (SMS) cessation services (i.e., [smokefree.gov](http://smokefree.gov)) and focus groups with young adults (English and Spanish) from San Antonio and the South Texas border area, to ensure that the program message library was culturally and linguistically appropriate.

### *Pretesting*

With input from focus groups, we developed preliminary content and protocols for our intervention and constructed beta versions of all key promotional messages and protocol elements for pretesting. To identify any potential technical issue prior to program launch, we conducted beta testing of the program with young adult smokers who enrolled in the program via Facebook, received texts, and responded to social media and video links embedded in texts.

### *Process*

To enroll in the program participants must be 18 years of age or older, current smokers, willing to set a quit date within 14 days, and provide baseline data. The program responds to text codes with a sequence of interactive messages beginning with collection of baseline data that includes basic demographics (i.e., age, ethnicity, gender),

number of cigarettes smoked per day, e-cigarette use, and binge drinking behavior. Participants are then prompted to choose either “quit tomorrow” or set a “quit date” within 2 weeks. Based on the selection, a specific message sequence follows. The program provides motivational messages, tips to manage cravings and difficult situations, and support 24/7. After their quit date, enrollees are also encouraged to text “help” if they are having difficulty avoiding cigarettes; when they text “help,” the system texts to ask if the help needed is due to “stress” or “mood,” and depending on their text reply, they are then sent either a prompt and link to breathing exercises (for stress) or a message with links to diverting, humorous videos (for mood). When enrollees fail to reply to texted questions at any point in the protocol, the system is designed to repeat the question twice before moving forward with the messaging sequence whether replies are received or not. Texts also include links to mobile webpages with short videos, music, and other fun and helpful content. These pages (Fig. 18.1) correspond to primary elements of the text messaging component: (1) reasons and motivation for quitting; (2) obtaining social support; (3) nicotine replacement therapy; (4) increasing physical activity; (5) breathing exercises for managing stress; (6) things to do instead of smoking; (7) avoiding relapse by talking yourself out of smoking; (8) predicting, planning, and practicing for difficult situations; and (9) avoiding binge drinking (Fig. 18.1). The messaging system was built and operated by the Software Communication and Navigation Systems Laboratory at the University of Texas at San Antonio.



**Fig. 18.1** Screenshots of webpages. (Reproduced with permission of Quitxt/Institute for Health Promotion Research, UT Health San Antonio; © 2018 Quitxt/Institute for Health Promotion Research, UT Health San Antonio. All rights reserved)

### Program Promotion

Program enrollment is promoted using mainly social media (i.e., Facebook, Instagram, Twitter), in addition to local mass media publicity and outreach at colleges, universities, trade schools, and other venues attended by young adults. The program uses social media ads with different themes (i.e., disgust, confidence in quitting) and styles (cowboy, metro, punk, graphic novel). Participants are prompted to click on the ad to visit the program homepage for more information or to text a code corresponding to the channel of recruitment (Fig. 18.2).

### Results and Discussion

This was not an experimental trial, and no data were collected to control for use of pharmacological or other behavioral interventions, but we did collect data on enrollment, continuation of service utilization, and self-reported cessation status.

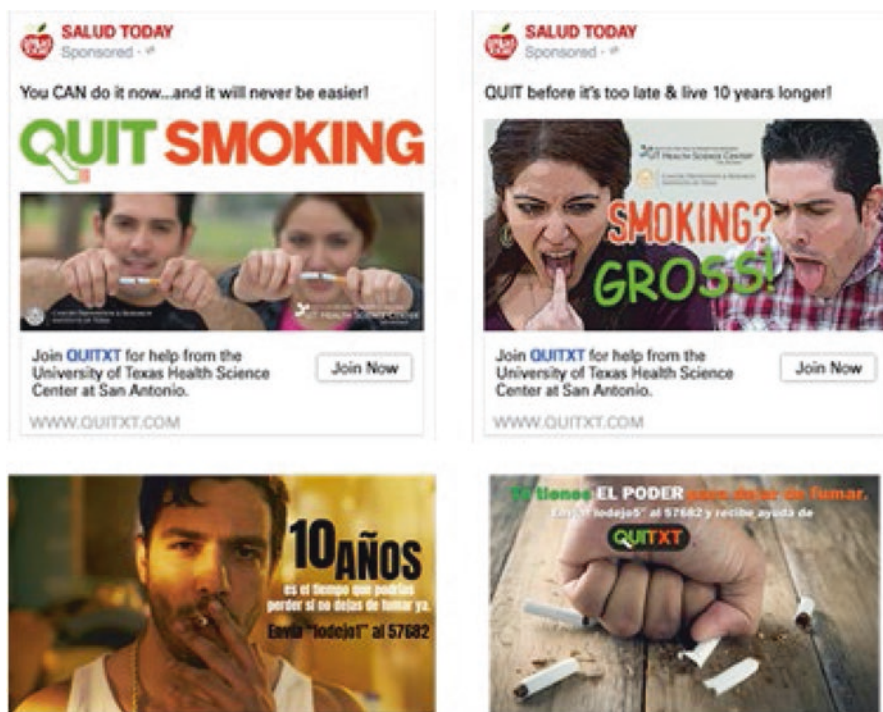


Fig. 18.2 Sample of social media ads. (Reproduced with permission of Quitxt/Institute for Health Promotion Research, UT Health San Antonio; © 2018 Quitxt/Institute for Health Promotion Research, UT Health San Antonio. All rights reserved)

Cessation success was assessed with a question texted from the service 222 days (7 months) following the enrollees' selected quit dates that measured 24-h point prevalence abstinence (no smoking in the past day). This measure of cessation yields estimated cessation rates that are highly correlated with abstinence assessed for longer intervals, and the question can be answered more accurately than questions about smoking in the past week or month [34]. If this were a clinical trial, more extensive measures of cessation success would be warranted, but guidelines for research on cessation do not call for biochemical validation of self-reported abstinence in texted or other low-response demand measurement contexts [35].

A total of 798 enrollees are included in the present group assessment. Participants were recruited from October 2015 to January 2016, with 70% (555) texting in response to Facebook advertising, 14% (111) responding to publicity, 9% (70) responding to outreach, and 8% (62) responding to Twitter or Pandora Internet Radio. Facebook advertising with a theme of confidence and the metro/urban style was the most productive recruitment source and yielded enrollees at a cost of approximately \$120 each.

Chi-square tests and multivariate analyses were used to determine the statistical significance of differences between program user groups. The mean age of Quitxt participants was 29.3, and 55% were below the age of 30 (Table 18.1). More men (57%) than women (43%) enrolled in the program, and 36% identified themselves as Hispanic or Latino. The mean number of cigarettes smoked per day was 11.5.

**Table 18.1** Quitxt participant characteristics and cessation rates

| Characteristic                   | Frequency (%) | Cessation (%) | OR           |
|----------------------------------|---------------|---------------|--------------|
| <i>Age</i>                       |               |               |              |
| ≤29                              | 398 (55.1)    | 23.9          | Ref          |
| ≥30                              | 324 (44.9)    | 23.5          | 0.90         |
| <i>Gender</i>                    |               |               |              |
| Male                             | 400 (56.5)    | 23.7          | Ref          |
| Female                           | 308 (43.5)    | 24.7          | 1.05         |
| <i>Ethnicity</i>                 |               |               |              |
| Hispanic/Latino                  | 246 (35.5)    | 25.2          | 1.18         |
| Non-Hispanic/Latino              | 446 (64.5)    | 24.4          | Ref          |
| <i>Cigarettes smoked per day</i> |               |               |              |
| <10 cigs/day                     | 308 (46.4)    | 26.3          | Ref          |
| ≥10 cigs/day                     | 356 (53.6)    | 25.3          | 0.97         |
| <i>Use of e-Cigs (ever)</i>      |               |               |              |
| Yes                              | 302 (49.6)    | 19.9          | <b>0.34*</b> |
| No                               | 307 (50.4)    | 36.2          | Ref          |
| <i>Binge drinking</i>            |               |               |              |
| Yes                              | 385 (64.1)    | 23.4          | <b>0.37*</b> |
| No                               | 216 (35.9)    | 37.5          | Ref          |

\* $p < 0.001$

Approximately half (302) of the 609 enrollees who replied to the question about e-cigarette use reported that they were using e-cigarettes to help reduce their cigarette smoking. Among the 601 enrollees who texted a reply to the question about alcohol use, 64% (385) reported binge drinking (4 or more drinks on a single occasion in the past month among women, 5 or more among men).

Regarding cessation rates, 21.4% of participants (171/798) reported 24-h point prevalence abstinence from smoking 7 months after their selected quit date. There were no significant differences in cessation rates between males and females, younger and older enrollees, or Latino enrollees and others. Participants who reported use of e-cigarettes were less likely to report smoking cessation at 7 months than those who did not report e-cigarette use: 20% (60/302) versus 36% (111/307; chi-square test,  $p < 0.001$ ). Those who reported binge drinking were less likely to report smoking cessation at 7 months than those who did not report binge drinking: 23% (90/385) versus 37% (81/216; chi-square test,  $p < 0.001$ ).

Smoking cessation rates reported here are higher than the rates reported in previous studies of mobile cessation services [26], but are consistent with research on telephone counseling for young adults [20]. Measurement of point prevalence of 24-h abstinence yields cessation rate estimates that are slightly higher than longer-reported intervals of abstinence [34]. In addition, enrollees in this service were mostly light to moderate smokers (mean consumption 11.5 cigarettes per day at baseline), which may have contributed to the relatively high cessation rates achieved.

## Conclusion

Texting and mobile media services for smoking cessation can be effectively delivered to young adults in South Texas. Support can be delivered 24/7 wherever the person is located, providing the anonymity people like, and it can be interactive, allowing participants to obtain help when it is most needed. This is a highly scalable service, which makes mobile personalized smoking cessation advice/support an affordable approach to reach disadvantaged population groups, produce a public health impact, reduce health service costs, and reduce smoking-related health disparities.

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