Quitxt research study: A Mobile Messaging Intervention to Promote Smoking Cessation among Young Adult Smokers in South Texas

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INTRODUCTION

Smoking prevalence is highest among Texas young adults (ages 18-29) and even higher among those with less than a high-school education and those living in rural areas and at or below the poverty level, such as Latinos.[1] About 19.2% of Latinos ages 18-29 in the study areas are current smokers, placing them at higher risk of cancer and other tobacco-related morbidity and mortality.[2] Young adults are heavy users of smartphones, text messaging, social media chats, and other mobile social media,[3] providing a remarkable opportunity for innovation in the delivery of health promotion services to reduce health disparities in this large and rapidly growing racial/ethnic population. Social media has an extraordinary theoretical potential for assisting smoking cessation by providing peer modeling and eliciting social reinforcement for behavior change.

With support from CPRIT, Quitxt was created by our research team as an evidence-based cancer prevention service using proven social cognitive, motivational interviewing, and brief intervention methods for promoting behavior change.[4] It blends bilingual text and social media messaging for smoking cessation tailored to the language and culture of young adult smokers in South Texas. Quitxt has not been tested in a research study.

AIM

The project goal is to experimentally evaluate Quitxt, our bilingual, culturally and linguistically tailored text messaging or chat mobile cessation intervention aimed at Latino young adults (ages 18-29), and provide an evidence-based, theory-driven program to reduce smoking cessation among this population.

METHODS

We will build upon the success of our own prototype (but not experimentally tested) text message smoking cessation program, which produced self-report smoking cessation rates of 21.4% at 7 months. We will use mixed qualitative/quantitative methods to refine and assess Quitxt: formative research will inform the text and social media content and features, survey questions will assess smoking cessation, associated factors, and program acceptability and usability, and intervention cost will be based on social media spending, metrics, and enrollment.

Quitxt Text Messaging

Quitxt Chat

METHODS *cont.*

Study Design. This 5-year study is a two-group parallel randomized controlled trial with 4 assessments (baseline, 1, 3, and 6 months). It will recruit 1,200 Latino young adult smokers (ages 18-29): 1) The intervention group will receive Quitxt (text messaging or chat), and 2) the usual care group will receive abbreviated text messaging with health-related content.

Formative research activities will be conducted to ensure the intervention is culturally and linguistically appropriate, user-friendly, and appealing to young adults. They will include 8 bilingual **focus groups** with 64 young adult smokers and a 1-week betatesting of the refined intervention components with 24 young adult smokers living in San Antonio and South Texas.

Recruitment/Promotion. We will promote the study through social media ads. news media and community outreach. We will engage our network of community and stakeholder partners, including colleges, technical schools, community clinics, community events, etc., with flyers, short presentations, and study information posted on their bulletins and social media platforms.

Inclusion Criteria. (a) Latinos; (b) aged 18-29 years; (c) smoking at least one cigarette/day ≥3 days/week; (d) interested in quitting; (e) willing to provide follow-up data; (f) are not simultaneously participating in a cessation program; (g) own a cell phone or smartphone; (h) are able to send and receive text messages and access the Internet; (i) reside in the study area; and (j) able to provide informed consent to participate in the study.

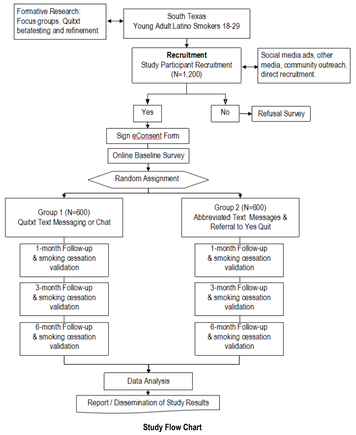
Enrollment Process. Once participants click on a social media ad, they will be redirected to the study webpage. Those recruited through media or community outreach will be provided a link/QR code to the study webpage. After screening for eligibility and providing e-consent, participants will take the online baseline survey. Then, they will be automatically randomized into one of the two study groups in a 1:1 ratio using random permutable blocks.

Study Variables and Measurement Plans. We will use validated questionnaires to assess the primary and secondary outcomes at baseline and follow-up assessments at 1, 3 and 6 months.

METHODS *cont.*

The **primary outcome** is smoking cessation at 6 months, defined as 1) biochemically verified abstinence (iScreen salivary cotinine test), and 2) self-reported 7-day point prevalence cessation. Secondary outcomes will include biochemically verified and self-reported 7-day point prevalence abstinence at 1 and 3 months.

Additional smoking-related questions will include cigarette use frequency, age first tried a cigarette, age began smoking regularly, average number of cigarettes per day, number of smoking days in the past month, daily smoking status (yes/no 30 days), nicotine dependence, using the Fagerström Test for Nicotine Dependence, number of past-year quit attempts, use of nicotine replacement therapy (patch, gum, lozenge), and e-cigarette use. We will also collect data on social influences (i.e., family and close friends who smoke, reasons to quit smoking, and binge drinking status). Self-efficacy will be assessed using the Self-Efficacy Questionnaire and social support with the Partner Interaction Questionnaire PIQ-12. We will also assess the acceptability/usability and cost of the Quitxt text messaging and chat intervention.



Study Flow Chart

Data Analysis. Experimental group differences in cessation rates will be analyzed with Fisher's Exact test. In our intent-to-treat analyses, participants who are lost to follow-up will be assumed to have made no change (i.e., to have not stopped smoking). Based on prior literature reporting abstinence rates ranging from 3.7% to 33.9%, we made conservative assumptions regarding the expected abstinence rates at 6 months and estimated a rate of 12%. There will be participants who do not achieve complete abstinence but do achieve meaningful change in cigarette consumption.

METHODS *cont.*

Health benefits can result from sharp decreases in consumption levels (e.g., to only one time a week, not daily, or <3 cigarettes per day), and these will be also analyzed. We hypothesize that the level of these variables will increase only slightly in the usual care group to significantly higher in the Quitxt group. We will also compute change scores and slopes of trends and compare them for the groups. We will use SEM to test the hypothesis that changes in outcomes are mediated by changes in self-efficacy and support.

CONCLUSION

This study will expand research on the health of Latino young adults by testing an innovative, mobile, culturally, and linguistically appropriate intervention to reduce smoking among Latino young adult smokers by enhancing their skills development, competence, and self-efficacy to initiate and maintain cessation. It will advance public health by testing the effectiveness of a scalable, evidence-based, easily disseminated, and adaptable intervention with potentially broad national reach to help young adults stop smoking and reduce smoking-related cancer and chronic disease morbidity and mortality and their associated healthcare costs.

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