

Beta test results of SMS USA: A text messaging-based smoking cessation program for young adults



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* Thank you for your interest in this presentation. Please note that analyses included herein are preliminary. More recent, finalized analyses may be available by contacting CiPHR for further information.

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Background

Between 24-44% of young adults in the United States ages 18-24 are current smokers.(1-2) Although over half of young adults report the desire to quit or cut down,(3) quit rates have remained stagnant over the last ten years.(4) Because the majority of smoking cessation programs developed are for older adult population ,(5) very few evaluation studies of programs targeting young adults have been conducted,(4) and efficacy trials examining the impact of interventions on young adult smokers specifically are uncommon.(6) Text messaging may represent a compelling intervention delivery method for young adult-targeted interventions because it is a medium they have widely adopted. Young adults are the age group most likely to own a cell phone.(7) 90% of adults between the ages of 18-29 report cell phone ownership.(7) And, a reported 72% of adults 18 and older with cell phones send and receive text messages daily.(7)

References:

- (1) Centers for Disease Control and Prevention. *Cigarette smoking among adults - United States, 2006*. Atlanta, GA. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5644a2.htm>
- (2) Substance Abuse and Mental Health Services Administration. Overview of findings from the 2003 National Survey of Drug Use and Health. Rockville, MD; 2004. SMA 04-3963.
- (3) Reeder AL, Williams S, McGee R, Poulton R. Nicotine dependence and attempts to quit or cut down among young adult smokers. *New Zealand Medical Journal*. 2001;114:403-406.
- (4) Lantz PM. Smoking on the rise among young adults: Implications for research and policy. *Tobacco Control*. 2003;12:60-70.
- (5) Murphy-Hoefler R, Griffith R, Pederson LL, Crosssett L, Iyer SR, Hiller MD. A review of interventions to reduce tobacco use in colleges and universities. *American Journal of Preventive Medicine*. 2005;28:188-200.
- (6) Bader P, Travis HE, Skinner HA. Knowledge synthesis of smoking cessation among employed and unemployed young adults. *American Journal of Public Health*. 2007;97:1434-1443.
- (7) Lenhart A., Purcell, K., Smith, A., Zickuhr, K. *Social Media and Young Adults*. Washington, DC: Pew Internet & American Life Project. Available at: <http://www.pewinternet.org/Reports/2010/Cell-Phones-and-American-Adults/Overview.aspx>
- (8) Rodgers A, Corbett T, Bramley D, et al. Do u smoke after txt? Results of a randomised trial of smoking cessation using mobile phone text messaging. *Tobacco Control*. 2005;14:255-261.

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Beta test description

- First week of the arm’s “pre-quit” messages; 4 messages per day
- Intervention messages prepare participant to quit
 - *“Congratulations!! The hardest part – deciding to quit – is already behind you. Write down your quit date and post it where you can see it every day.”*
- Control messages prepare participant to improve sleep and exercise habits
- Text Buddy feature: Participants are matched by the software program and provide encouragement and support to each other
- Text Crave feature: On-demand distraction messages sent to a participant by the program when they are experiencing a craving

Beta test objectives

1. Software program functionality (e.g., validation code; automation of program messages; randomization; etc)
2. Acceptability of the “text buddy” (pairing with another participant for support through text) and “text crave” (immediate text response to craving) program features [based upon features developed by Rodgers et al. (8)]

Methods

- Participants recruited from MI and NH over 1 week period
- Flyers posted in restaurants, Laundromats; and online (Craigslist)
- 33 people expressed interest
 - 12 (36%) enrolled
 - 18 non-responders, eligibility status not determined
 - 3 ineligible (e.g., non-supported cell phone carrier; outside of age range)
- Participants randomly assigned using the minimization / randomization schedule developed by the statistician
- Participants instructed to use text buddy and text crave (regardless of study arm)
- One-on-one qualitative interviews were conducted at the end of the beta test.

Sample description

Eligibility Criteria

- Between 18-25 years old
- Smoke 4 or more cigarettes/ day at least 6 days/ week
- Seriously thinking about quitting in the next 30 days
- Own a cell phone
- Enrolled in an unlimited text messaging plan, or plan to enroll in the next 30 days
- Informed consent

Participant Characteristics

<i>Demographic characteristics</i>	<u>M (SD)</u>
Age (years; range: 18-25)	21.9 (1.5)
	<u>n (%)</u>
Male	7 (58%)
Race	
White or Caucasian	9 (75%)
Mixed racial background	3 (25%)
Hispanic Ethnicity	1 (8%)
Highest level of education	
High school or equivalent	2 (17%)
Some college or higher	10 (83%)
Employment status	
Full-time	2 (17%)
Part-time	5 (42%)
All other	5 (42%)
<i>Smoking characteristics</i>	<u>M (SD)</u>
# Cigarettes per day (range: 5-25)	13.7 (6.3)
Importance of quitting (range: 1-10)	7.8 (0.8)
Confidence in quitting (range: 1-10)	6.3 (2.2)
	<u>n (%)</u>
Smoked for 5 years or longer	7 (58%)
First cigarette w/i 1 st hour of wake	9 (67%)

Results: Software program functionality

- Participants were assigned to the intervention vs. control arms at a 2:1 ratio, according to plan
- Smaller providers (e.g., Cricket, MetroPCS) not supported
- Participants received study text messages; and sent and received ‘text buddy’, and ‘text crave’ messages without problem

Results: Acceptability of Text buddy feature

Participants reported Text buddy was helpful because “it’s someone going through the same thing you are.”

Example messages between buddies:

- *“buddy im not at my proudest will power moment today im pretty much right back on track smoking theres always tomarrow”*
- *“buddy try using gum or another method to ease the stress while your tryin quit”*

Results: Acceptability of Text crave feature

Participants reported they liked the on-demand feature; they received an automated response from program within 30 seconds of their text

Preference for behavioral rather than cognitive based messages because they “take your mind off of the craving”

Example messages:

- *“Text crave messages work because if you do what the message says, you won’t smoke! All of the little situations in which you don’t smoke add up to being a non-smoker before you know it!”*
- *“Distract yourself: Text someone a text with exactly 140 characters.”*

Additional Findings:

Nine of 12 participants were recruited from Craigslist.

Conclusions

The social support (Text Buddy) and crave support (Text Crave) program features were well received by participants and should be considered for inclusion in programs aimed at young adults.

Craigslist, a less commonly cited source to reach young adults, appears to be a valuable recruitment resource.