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SMOKING CESSATION CLINICAL DEMONSTRATION IN RETURNING VETERANS

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Abstract

Objectives—The purpose of this clinical demonstration project was to increase the reach of effective treatments, such as pharmacotherapy and telephone or web based support, by offering these treatments in a low-cost and convenient manner to a population of veterans.

Methods—Six hundred nine veteran smokers who had served in the military since September 11, 2001 were contacted by invitational letters. Veterans indicating interest in further contacts received telephone calls using standardized scripts that offered referral to the National Cancer Institute's Smoking QuitLine, web-based counseling, and local Veteran Affairs pharmacologic treatment for smoking cessation.

Results—Seven percent of survey recipients participated in the clinical program. At two months follow-up, 23% of participants providing follow-up information reported maintaining smoking abstinence. This clinical demonstration project was associated with a reach of 8.6% (number of smokers who accessed the intervention/the number of targeted smokers), an efficacy of 26% i.e., number of abstinent smokers at 8 weeks/number who accessed the intervention), and an impact of 2.2% (number of abstinent smokers at 8 weeks/number of targeted smokers).

Conclusions—Results suggested that this project enhanced access to care and promoted short-term smoking cessation in veterans who have served since September 11, 2001.

Keywords

smoking; tobacco; military veterans; public health; telemedicine

The Centers for Disease Control and Prevention (CDC) estimates that 21% of adults, age 18 and older currently smoke cigarettes (CDC, 2009a) and that 20% of high school students have smoked a cigarette within the past 30 days (CDC, 2009b). There is some speculation

that the reduction in tobacco use has leveled off (Fiore & Baker, 2009) but between the years 1965 and 2007 smoking declined on average 0.5% annually (Fiore & Baker, 2009). The rate of tobacco use among US military personnel has been declining since the Second World War, however, the rate of tobacco use within the military still remains higher than that of the civilian population (Institute of Medicine (IOM), 2009). The overall rate among military personnel in 2005 was 32.2% Bray (Bray & Hourani, 2007), and the rate among veterans in 2008 was 19.7% (Veterans Health Administration, 2009). Although the rates of smoking among military personnel have slowed over the past few decades, the smoking rate being 51% in 1980 (Bray & Hourani, 2007), survey data have revealed that cigarette use has increased slightly from 29.9% in 1998 to 32.3% in 2005 among active military personnel (Bray & Hourani, 2007). In addition, smokeless-tobacco use, such as snuff and chewing tobacco, has increased to 14.5% from 13.2% between 1995 and 2005 (IOM, 2009). Despite significant progress, reducing the number of smokers and smokeless-tobacco users within the veteran population remains a relevant objective.

Smoking cessation counseling and medication, especially when used in conjunction, are effective in helping tobacco users quit (Fiore, et al., 2008). Evidence-based smoking cessation interventions including medications, education, and counseling are all available through the VA (IOM, 2009). Unfortunately, evidence suggests specialty smoking cessation clinics are limited by low attendance (Volpp et al., 2006). One group of referred veterans who did not attend specialty clinics cited the following barriers as preventing attendance: inconvenient meeting times (38%), did not feel like quitting (37%), travel distance (33%), lack of transportation (20%), aversion to attending groups (20%), and too many meetings (17%) (Sherman, Yano, Lanto, Simon, & Rubenstein, 2005). Offering medications through the mail, facilitating access to phone counseling and providing web-based services such as QuitNet® is one way of making these services more accessible.

The method of improving reach employed by this public health demonstration is similar to that used in two previous projects (Beckham, et al., 2008; Dedert, et al., 2010). The first project included a target group of veterans randomly selected from a military separation list who had served since September 11, 2001, but were not necessarily VA healthcare users or smokers (Beckham, et al., 2008). Using a series of letters, the target population was offered existing VHA smoking cessation resources, including the National Cancer Institute's smoking cessation QuitLine (1-877-44U-QUIT) and mail-out of nicotine replacement (Beckham, et al., 2008). Although the reach of this intervention (9%) was limited by outdated addresses, 29% of those who accessed the intervention and were available for follow-up contacts provided self-reported confirmation of smoking abstinence. The overall impact of this project was 2.7%. The second project included veteran patients at the VA who used tobacco and had a diagnosis of Posttraumatic Stress Disorder (PTSD) (Dedert, et al., 2010). Using recently updated addresses, this project provided a sample of confirmed tobacco users and extended the intervention to veterans with PTSD. The selected veterans were contacted by a series of letters offering the same smoking-cessation treatment options as the first project but expanded to include web-based treatment (Dedert, et al., 2010). Though the confirmed quit rates for veterans accessing this intervention were relatively low (8%), which is a common problem in veterans with PTSD who smoke (Lasser, et al., 2000), the reach (31%) was significantly improved. Consequently, the overall impact of this project was 2.6%. The third and current project was aimed at further evaluating the approach of QuitLine, (www.QuitNet.com), and mail-out pharmacotherapy to a sample similar to that of the first project by targeting VHA health care users who had served since September 11, 2001. However, this current project differed in that QuitNet® was included, the sample selected only tobacco users, and all veterans were registered VA patients.

Methods

Sample

The target population was selected from the hospital medical record database for veterans who had served since September 11, 2001. These eligible veterans were registered for health care with the Durham, NC, Veterans Affairs Medical Center and screened positive for tobacco use, resulting in 609 veterans.

Contact Procedure

Four sequenced letters were mailed following the Dillman system (Dillman, 1978, 2000). These included a pre-notice, two respondent-friendly questionnaires with prepaid return envelopes, and a thank you letter. In accordance to Dillman's recommendations, all letters were personalized, were printed on official stationery, had a personalized salutation, and a real signature. The brief letter included a survey with seven questions to determine smoking status, smoking history, and interest in smoking cessation services. A total of 609 initial letters were mailed to the cohort on March 29, 2008 and the final letters were sent on May 24, 2008 to veterans who had not yet responded to the previous letters. Veterans interested in the smoking cessation program received a telephone call from a project coordinator explaining behavioral and pharmacological smoking cessation services. Letters and telephone contacts were intentionally standardized to promote use at other VA sites. Those who participated in the program received a follow-up phone call that occurred an average of 12 weeks after the final intervention contact.

Program Components

The intervention included the following options: Tobacco users who returned the mail-out survey were called by project personnel who used brief scripts to introduce QuitLine, QuitNet®, and pharmacological components. Smokers interested in medications completed screening to determine the presence of any medication contraindications. Possible contraindications to nicotine replacement therapy include high blood pressure, unstable angina, recent myocardial infarction, severe arrhythmia, and pregnancy. In addition, a history of skin hypersensitivity to the nicotine patch is another contraindication to the nicotine patch. Possible contraindications to bupropion include a history of an adverse reaction to a form of bupropion, past or current seizure disorder, past or current eating disorder, the current or recent use of a monoamine oxidase inhibitor, traumatic brain injury, recent stroke, and pregnancy. In cases with no contraindications, over-the-counter formulations of nicotine replacement were prescribed and mailed to the veteran through the VA pharmacy. For veterans receiving care from a psychiatrist, the psychiatrist was contacted by email to elicit input regarding the appropriateness of bupropion prescriptions. Medications were accompanied by information on side effects and administration instructions. Follow-up telephone calls were completed an average of 12 weeks ($M = 81.3$ days; $SD = 24.2$ days) after intervention contact.

Results

Intervention Results

Results for the cohort are presented in Table 1. Veteran contact from the initial target group to those participating in the intervention is illustrated in Figure 1. A total of 609 initial letters were mailed and 71 (11.7%) were returned with an incorrect address. One hundred sixty-one (30%) responded by returning one of the surveys or calling project personnel. Of the 161 survey respondents, 67 reported smoking every day, while 20 smoked some days, eight used other forms of tobacco (smokeless, pipes, cigars) in addition to cigarettes, and six non-smokers used smokeless tobacco. Of the 93 tobacco users, 66 (71%) were interested in the

program. Of those who were interested in the program ($n = 66$), 12 (18%) were subsequently unavailable by phone, resulting in a total of 54 who were contacted. Of the 54 who were assisted, eight did not receive the intervention, or the discussion of possible treatment options, because six had already quit, one was not interested in making a quit attempt, and one was unable to converse at the time of contact and was subsequently lost to follow-up. One of the six who had quit between the survey and phone contact was still interested in the treatment options, most likely for relapse prevention. Of the 46 who received the intervention, 44 were interested in the available treatment options and continuing participation in the program. Of the 46 who participated in the intervention, 39 (85%) individuals were given information for QuitNet®, 40 (85%) received the number for QuitLine, 38 (83%) were interested in receiving NRT, 33 (71 %) were interested in bupropion, and 37 (84 %) were mailed smoking-cessation medication information packets.

Approximately eight weeks after the intervention, the project staff attempted to establish phone contact with those who had participated in the intervention. Once the veteran was contacted for follow-up, a questionnaire with 22 questions was administered over the phone. The follow-up phone call was made for several reasons. The first purpose of this contact was to see if the participant had set a quit date, and if they had, if they were still abstinent. In addition to establishing whether or not the participant had made a quit attempt, some additional questions were asked about smoking behaviors. The second part of this contact was to gather feedback about the program and the services offered. The feedback consisted of asking the participant whether or not he or she found certain services helpful. The third part contained a set of questions for those who participated and were currently smoking. These questions asked participants what they thought would be helpful for his or her next quit attempt. Of the 46 intervention participants, 35 were successfully contacted for the follow-up survey.

All but one of the 35 were cigarette smokers, leaving one smokeless tobacco user. Of the 35 veterans contacted, 19 set a quit date (54%), 12 (34%) reported a quit attempt with a duration greater than 24 hours and eight (23%) reported abstinence at the time of the eight week follow-up phone call. Follow-up data are presented in Table 1. Four (11%) participants reported contacting QuitLine, and ten (29%) reported using QuitNet®. Of the ten who reported using QuitNet®, five found the services helpful. Of the four who reported using QuitLine, two found the QuitLine staff helpful. Fourteen (40%) smokers (the one smokeless tobacco user did not set a quit date) reported making a quit attempt between the intervention and follow-up contacts, with eight (23%) remaining smoke-free at the time of the follow-up. The reported average number of days abstinent, for those eight individuals who were abstinent at the time of the follow up, was 57 days, ranging from 22 to 138 days. Five of the eight successful quitters found the patches helpful, five found other forms of NRT helpful, and four found bupropion helpful. Out of the eight who were smoke-free at the time of the follow-up survey, one had used QuitNet® and one had used QuitLine. In response to an open-ended question about motivation for quitting, most people cited family or health as their primary motivation(s) for wanting to quit.

The impact was calculated for a target population of 536, as opposed to the originally targeted 609, because 73 were removed due to confirmation that they were not tobacco users at the time of intervention. Of these, 53 of those individuals who had responded to the survey no longer used tobacco, 14 had never used tobacco, and six quit between the survey and the intervention. In terms of the overall effect on the target group of tobacco users, this cohort yielded a 2.2% impact. Impact is defined by reach, or the percent of the target population who accessed the intervention (8.6%), multiplied by efficacy, or the percentage of those who reported abstinence at the 8-week follow-up (2.7%).

Interest in Smoking Cessation Resources

As a sample of veterans who have served in recent conflicts and use tobacco, the veterans who were involved in this project have the potential to provide important insights into smoking cessation among this important group. Consequently, we summarized these veterans' interest in the available smoking cessation resources. To provide information on interest in various smoking cessation resources, we examined relationships between responses on the initial survey (cigarettes smoked per day, making more than one quit attempt in the past year, and stage of change regarding smoking cessation) and interest in phone counseling, QuitNet®, and pharmacotherapy (bupropion, nicotine patches, and nicotine rescue methods).

Of the 46 included, 40 (87%) were interested in receiving the number for Quitline; 39 (85%) were interested in receiving information on Quitnet®; 31 (67%) were interested in bupropion; 33 (72%) were interested in both the nicotine patch and nicotine rescue methods. Unfortunately, small cell sizes prevented statistical significance testing, but some trends emerged. Regarding number of cigarettes smoked per day, each of the five veterans who smoked more than 20 cigarettes per day endorsed interest in Quitnet®, while a comparatively smaller proportion of those smoking less than ten cigarettes per day (80%) endorsed interest in Quitnet®. Veterans with at least one quit attempt in the past year endorsed interest in bupropion in higher proportions (74%) than veterans who had not made a quit attempt (45%). Comparing veterans in precontemplation regarding smoking cessation to those in the contemplation stage, veterans in precontemplation were slightly more interested in bupropion (78% vs. 64%), while veterans in the contemplation stage were slightly more interested in nicotine replacement therapy (77% vs. 65%).

Discussion

This clinical demonstration engaged tobacco cessation efforts in 46 tobacco users. Over half (54%) of those who responded to invitation letters and talked to project personnel set a quit date. Twenty-three percent of those providing follow-up reported abstinence from tobacco. Combined with the quit rates (38% and 25%) reported from our previous efforts with similar protocols (Beckham, et al., 2008), this intervention has the potential to reach more smokers than usual care and promote smoking cessation. This improved reach is due to reduced time and travel demands on the veteran and access to various modes of intervention, including both phone-based and web-based components that can be used to address cravings and relapse.

The relatively low undeliverable survey rate (12%) was likely because veterans registered for treatment at the VA typically update their mailing addresses as part of their clinical care. The proportion of tobacco users completing the mail survey (30%) was moderate and similar to previous mailings (33% (Beckham, et al., 2008); 51% and 24% (Dedert, et al., 2010)). In the one cohort with a higher response rate (51%), respondents who did not reply by mail were called. The reach for this cohort of registered OEF/OIF veterans (9%) was lower than that observed in previous cohorts (Dedert, et al., 2010) and approximately the same as the reach observed when using a similar protocol with OEF/OIF veterans from different eras who were not registered patients of the VA (Beckham, et al., 2008). This low reach might be due to difficulties contacting OEF/OIF veterans, who might be recently separated and transitioning from active military service.

The reduced reach for this cohort of OEF/OIF veterans resulted in a somewhat reduced cessation impact rate (2.2%) relative to the cohorts of other veterans using a similar approach (ranging from 2.5-2.7%; (Beckham, et al., 2008; Dedert, et al., 2010). However, given the low cost of this intervention and its capability to reach veterans who may not have

accessed other VA clinical cessation efforts, the short-term impact of this intervention is still promising. In addition, the impact rate is higher than cessation rates indicated in reports of other public health campaigns (An, et al., 2006; Cummings, et al., 2006) and likely higher than rates of spontaneous tobacco cessation would be over an eight week period (Dedert, et al., 2010). Because this project was a clinical demonstration rather than a randomized control trial, it lacked a control group. There was no biochemical verification of tobacco abstinence and actual abstinence rates may have been reduced, since many veterans did not provide follow-up information (and were assumed to be smoking).

Conclusions

Tobacco users who responded to the survey were interested in the available resources. As a result, this project improved the reach of existing clinical efforts addressing smoking cessation. Given the prominence of reducing tobacco use and goal identified in the recent IOM report of barrier free access, the interest and quit rates of this cohort are encouraging and underscore the potential of mail (IOM, 2009, p. 10), telephone, and internet smoking cessation methods. Due to the importance of the interpersonal environment in tobacco use (Dollar, Homish, Kozlowski, & Leonard, 2009), future interventions could also be extended to family members of veterans who use tobacco. Survey response and impact rates across cohorts suggest veterans have moderate interest in smoking cessation resources beyond those with which they are already engaged. As a result, the proactive contacts provided in this intervention fill an important need by coordinating smoking cessation treatment for veterans who lack sufficient access to care. Further, the low level of resources needed to implement this intervention provides cost-effective smoking cessation care..

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Figure 1.
Depiction of Contact and Intervention Process

Table 1

Results for Cohort

	Cohort (N =35)
Used QuitLine	4 (11%)
Used Quitnet®	10 (29%)
Set a Quit Date	19 (54%)
Quit Attempt > 24 hrs	12 (34%)
Abstinent at Follow-Up	8 (23%)