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Short Communication

A process evaluation of tobacco-related outcomes from a telephone and print-delivered intervention for motor freight workers

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ABSTRACT

Interventions are needed to address the high prevalence of tobacco use among blue-collar, motor freight workers in the United States. In the present study, we conducted an evaluation of the *Gear Up for Health* study to evaluate which intervention components associated with this print- and telephone counseling-based tobacco intervention were associated with affecting psychosocial indicators of future quitting, number of quit attempts, and quitting tobacco. The sample is comprised of 64 baseline tobacco users. The intervention components evaluated were receipt of nicotine replacement therapy (NRT), aspects of the counseling calls, the targeted and tailored print materials, and goal setting. The results indicated that several intervention components were related to tobacco cessation, and less frequently related to psychosocial indicators (*i.e.* intention and self-efficacy) and quit attempts. A higher percentage of those who quit using tobacco, versus not quitting, thought the number of calls were just right (100% vs. 75%), received NRT (87% vs. 56%), read most or all of the materials (100% vs. 70%), found the materials to be very helpful (87% vs. 30%), set tobacco goals (93% vs. 58%) and met these goals (100% vs. 44%) ($p \leq 0.05$ for all). These results may be used in planning future interventions and indicated that perceptions of materials, call number, and call content may be more important than absolute call number or duration. Thus, the number and duration of counseling calls may be flexible and determined in response to the needs of participants.

1. Introduction

Prevalence of tobacco use among blue-collar motor freight workers is higher than the general U.S. population, with 28% reporting smoking cigarettes and 9% reporting chewing tobacco (Dinges & Maislin, 2006). While reviews indicate strong evidence for individual counseling and pharmacological treatments for promoting quitting compared to control groups in worksites (Cahill, Moher, & Lancaster, 2008), fewer blue-collar (vs. white-collar) workers have access to worksite health promotion programs (Stoltzfus, 2006). To increase access to tobacco control programs, research is needed to improve the adoption potential of interventions outside the research setting by addressing the numerous barriers to adoption in workplace settings (Glasgow & Emmons, 2007). Process evaluations can inform efforts to reduce barriers by examining which intervention components are associated with tobacco cessation. Thus, future interventions may exclude, limit, or modify specific components which may then decrease cost, personnel resources, and participant burden — all of which have been noted as barriers to disseminating health programs (Glasgow & Emmons, 2007).

The objective of this study was to determine which components associated with the process of delivering a print- and telephone counseling-based tobacco cessation intervention among motor freight workers are associated with affecting psychosocial indicators of future quitting, number of quit attempts, and quitting tobacco. We hypothesize these outcomes will be associated with participants who engage more fully in the intervention.

2. Methods

2.1. Participants

Gear Up for Health was a tobacco cessation and weight management intervention among unionized motor freight workers utilizing a tailored report, targeted tip sheets, and motivational interviewing-based counseling calls. Using a pre-test/post-test design, workers who completed a baseline survey administered in trucking terminals were invited to learn the results of their survey by providing their address and telephone number. Participants completed the self-administered baseline survey in 2005–2006 and the follow-up survey 10 months post-baseline (or four months after the six month intervention).

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Recruitment took place in eight trucking terminals randomly selected from 17 eligible terminals employing 75 to 150 workers in four states in the Eastern region of the U.S. Eligible workers were permanent employees who worked ≥15 h/week and were not out on workers' compensation for more than two weeks. All study procedures were approved by the Dana-Farber Cancer Institute's Institutional Review Board. Agreeing to receive the tailored and targeted materials was granted when participants reported their address and telephone number on their baseline survey; consent to receive the telephone counseling calls was obtained by the health educator during the first call.

Participants were motor freight workers: over-the-road truck drivers who transport goods between cities; pick-up and delivery truck drivers who deliver packages within a defined area; and dockworkers who load and unload cargo. Of 697 eligible workers, 542 completed the baseline survey (78% response rate). Out of these 542 subjects, 227 (42%) agreed to participate. 179 (79%) participants completed the final survey and of these, 64 (36%) were tobacco users at baseline. Analyses for the tobacco cessation outcome is limited to the 64 baseline tobacco users and analyses for the self-efficacy/intention combination measure and tobacco quit attempts is among non-quitters ($n=48$).

2.2. Intervention

Based on the social contextual model (Sorensen, Barbeau, Hunt, & Emmons, 2004) and a similar intervention with construction laborers (Sorensen et al., 2007), the *Gear up for Health* intervention incorporated information from qualitative formative research to integrate work experiences of motor freight workers into intervention delivery. Those providing their address on the baseline survey were mailed a tailored newsletter (*e.g.* to participants' intention to quit). Those also providing their phone number, received 11 print tip sheets and booklets about weight management and tobacco use that were targeted, but not individually tailored, to work experiences of truckers. They also received up to five telephone counseling calls using motivational interviewing delivered by trained health educators. For participants without contraindications, who smoked cigarettes, and were ready to set a quit date, over-the-counter nicotine replacement therapy (NRT) was offered free of charge.

2.3. Measures

2.3.1. Outcome measures — tobacco use

Cessation was self-reported using standard measures (Hughes et al., 2003) by responding "no" to either of the questions, "Have you used any tobacco products in the last 7 days" or "Have you used any cigarettes in the last 7 days" at follow-up, among those who were tobacco users at baseline.

2.3.2. Outcome measures — quit attempts

Participants also indicated "How many serious quit attempts have you made in the last 10 months?" The open-ended responses were categorized into 0, 1, and two or more.

2.3.3. Outcome measures — psychosocial indicators

Intention to quit was measured with three questions asking if participants were "currently trying to quit using all tobacco" and "seriously thinking about trying to quit" either within the next 30 days or six months (Prochaska & DiClemente, 1983). Responses to these questions formed four categories: action (currently trying to quit using all tobacco), preparation (thinking about quitting within the next 30 days), contemplation (thinking about quitting within the next 6 months), and pre-contemplation (no indication of intent within the next 30 days or 6 months). Self-efficacy to quit was measured by asking participants "If you are currently trying to quit using all tobacco, or thinking of trying to quit in the next 6 months, how confident are you that you will do so?" with response options of very, somewhat, a little confident, and not trying to quit (Prochaska & DiClemente, 1983). A three-item combination measure for intention and self-efficacy at the final survey was created and consists of three categories 1) no intention, 2) high intention/low self-efficacy and 3) high intention/high self-efficacy. The "no intention" group includes those who were in pre-contemplation or contemplation regardless of their self-efficacy level. Also included in the "no intention" group are those who indicated that they were "not trying" in the self-efficacy measure. The "high intention/low self-efficacy" group consists of those who were in preparation/action and reported to be "somewhat" or "a little confident". The "high intention/high self-efficacy" group consists of those in preparation/action and reported to be "very confident".

2.3.4. Process measures — calls, materials, and goals

At follow-up, participants responded to several questions related to their engagement in intervention components including 1) counseling calls: perception of number received, perception of helpfulness in setting personal goals for changing their health habits; 2) targeted materials: how much of the materials they read, perception of helpfulness in setting personal goals for changing their health habits; and 3) goals: whether they set any goals related to quitting tobacco use in the last year, perception of being able to meet personal tobacco goals.

Counselors recorded all call attempts and duration via a computer-based system that stored aspects of the call attempt process in a secured database. Number and duration of completed calls are used in these analyses. Receipt of NRT was also recorded.

2.4. Data analysis

For this analysis, participation is defined as signing up for the program (thus, receiving tailored/targeted written materials) and completing at least one (out of five) telephone counseling call(s). Analyses examined the association between process variables and a combination intention/self-efficacy measure, quit attempts, and cessation measured at the final survey. For dichotomous measures, we used mixed model logistic regression and for continuous outcomes a linear mixed model was conducted, adjusting for site. For dichotomous measures with small cell sizes, we used the Fisher Exact test. In addition, the combination intention/self-efficacy analyses controlled for baseline intention/self-efficacy. This allows us to examine the effect of the program such that we are able to pin point what process variables are associated with a subject's final intention/self-efficacy status independent of baseline. All analyses were conducted using SAS Statistical software (SAS Institute, Inc. Cary, NC). P values ≤ 0.05 were considered statistically significant.

3. Results

The majority (63%) indicated high school or obtaining a GED as their highest level of education, with 8% without a high school education, and 30% with some college or more. Mean age was 49 years. Most (88%) identified themselves as non-Hispanic white. Most (68%) were pick-up and delivery truck drivers, followed by over-the-road drivers (21%), and dockworkers (11%). Additional information pertaining to the job conditions and health behaviors of this sample is provided elsewhere (Sorensen, Quintiliani, Pereira, Yang, & Stoddard, 2009).

As shown in Table 1, NRT was significantly associated with the combination tobacco measure such that those in the high intention/high self-efficacy to quit using tobacco group were more likely to have received NRT vs. those in the no intention group (67% vs. 38%). A higher percentage of those who quit using tobacco thought the number of calls were just right, received NRT, read most or all of the