Recruiting Teen Smokers in Shopping Malls to a Smoking-Cessation Program Using the Foot-in-the-Door Technique

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Persuading teen smokers to volunteer for smoking-cessation programs is a challenging yet understudied problem. As a method of dealing with this problem, we used and tested a foot-in-the-door (FITD) approach. Teen smokers were intercepted at malls and were assigned randomly to request compliance with a small behavior request of either (a) answering a few questions (light FITD) or (b) answering the same questions and a few additional ones, plus watching a short video about the effects of nicotine (heavy FITD). Participants were then called back by telephone several weeks later and asked to comply with a large behavior request of joining a cessation program that involved the use of self-help materials and telephone counseling. Although no differences were found in responses from the light and heavy groups, consent to enter the program was obtained from 12% of the pooled qualified intercepts and their parents (for those under 18 years). This recruitment rate was considered good, given that this is one of the only reported studies that recruited teen smokers from the general population to cessation programs.

Persuading teen smokers to quit has become a top priority for health practitioners (Mermelstein, 2003; U.S. Department of Health and Human Services [USDHHS], 1994). Despite the effectiveness of some smoking-cessation programs, teens are reluctant to join these programs (McDonald, Colwell, Backinger, Husten, & Maule, 2003; Mermelstein et al., 2002; Stanton, Gillespie, Hunter, Bade, & Lowe, 1995; Sussman, 2002). Therefore, persuasive recruitment strategies are needed to overcome many teen smokers’ beliefs that either they do not smoke enough to require such programs or that they will be able to quit in the future before serious consequences occur (Slovic, 2001; Sussman, Dent, Severson, Burton, & Flay, 1998; USDHHS, 1994).

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Unfortunately, prior studies have offered little guidance in developing successful teen recruitment approaches, particularly for non-school settings. The present paper reports results from testing the persuasive social influence approach known as the foot-in-the-door technique (FITD; Freedman & Fraser, 1966) to recruit teen smokers from shopping malls into a self-help cessation program. FITD is an approach that seeks greater compliance with a large behavior request (e.g., joining a smoking-cessation program) through first making a related small behavior request (e.g., answering a few questions about smoking) with a target population.

Previous Research

McDonald (1999) examined recruitment strategies that were used in 33 studies of adult cessation programs that targeted smokers from the general population, which means that they sought participants who represent a typical cross-section of U.S. smokers, not just “available” smokers from places such as worksites or institutions. McDonald found great diversity in recruitment results, with the median reported recruitment rate being 2.0%. Note that recruitment rates were defined to be the percentage of smokers in the target populations who consented to enter the programs; not the percentage who actually entered the programs or completed the programs. In the present paper, we also define recruitment rate as the percentage who consent.

According to McDonald (1999), approaches that achieved recruitment rates above 2% generally used telephone and interpersonal communication channels, rather than mass media or mail channels. Additionally, in an unpublished review by McDonald (2001), a 7.8% median recruitment rate was estimated for 48 mostly school-based recruitment campaigns that targeted age groups between the age of 12 and 24.

Another review by Sussman (2002) focused on 66 cessation programs with teens that were conducted in clinics, classrooms, mass media, and elsewhere. A wide variety of recruitment techniques were used in these studies, with the most frequent approaches being (a) person-to-person communications that encouraged smokers to persuade friends to join, and (b) offers of incentives or compensation. Additional techniques included making announcements in schools, giving youths “referrals” to cessation programs, advertising with posters or newspaper ads, and making participation mandatory in order to avoid suspension from school. Most programs used multiple methods of recruitment.

Instead of recruitment rates, Sussman (2002) reported reach rates for 46 studies, which indicate the number of participants who attended the first
session relative to the number of adolescents who were notified about the program. These rates are naturally higher than the recruitment rates reported by McDonald (1999), with a mean of 61%. None of the studies that reported reach rates appear to have recruited teens outside of school or institutional settings. Hence, a good benchmark for success in recruiting teen smokers from the general public has not been established.

Knowledge about how to recruit teen smokers in non-school and non-institutional settings is needed to help recruit young smokers in localities where schools and institutions lack resources or support for cessation programs. Also, some students may be embarrassed to seek cessation help in their schools, and ways to reach this subpopulation are needed (Mermelstein, 2003; Stanton et al., 1995). Furthermore, knowledge is needed about how to recruit out-of-school teens who, because of their higher smoking rates, stand to benefit the most from cessation programs (Pirie, Murray, & Luepker, 1988). It also would be helpful for allocating resources to future recruitment efforts to have better information about how one or two recruitment strategies worked alone or together, and not just how a large group of simultaneously employed strategies worked together.

Studies of the FITD technique have found that persuading people to comply first with a small, low-effort behavior request (e.g., answering health questions) will lead to greater compliance with a subsequent larger behavior request (e.g., entering a smoking-cessation program) than will simply approaching people "cold" with a large behavior request first. The effectiveness of this approach is based on people's desires to behave consistently, wanting to make their responses to large behavior requests align with how they previously responded to small behavior requests (Burger, 1999; Cialdini, 1993; Freedman & Fraser, 1966).

Theories such as self-perception, attribution, and reactance have been posited to explain the FITD effect (Burger, 1999), with self-perception theory probably being the most supported explanation (Burger & Caldwell, 2003). This technique has been applied effectively in several areas, stimulating increases in magazine subscriptions, donations, volunteering to support a social cause, or participation in research studies (Ford & Spekman, 1981; Kamins, 1989; Scott, 1977). In health contexts, FITD has been shown to increase intention to be an organ donor (Girandola, 2002), willingness to schedule a gynecological exam (Dolin & Booth-Butterfield, 1995), and likelihood of calling a taxi after drinking in a bar (Taylor & Booth-Butterfield, 1993).

Shopping malls are potentially excellent locations for testing recruitment strategies for non-school-based teen smoking-cessation programs. Because teens frequently congregate at malls to relax and "hang out," they can be intercepted and perhaps recruited more readily than at other teen-frequent-
ed venues, such as sporting events, concerts, or movies, where they may feel too busy to answer questions. Marketing researchers have found malls to be good places to do behavioral research (Bush & Hair, 1985; Gates & Solomon, 1982). Indeed, the FITD technique has been used often in the marketing research field to increase participation in studies (Hornik, Zaig, & Shadmon, 1991; Kamins, 1989; Reingen & Kernan, 1977).

Study Background

Our research on the recruitment of teen smokers was completed as part of a larger project focused on evaluating the effectiveness of a self-help cessation program for teen smokers. Details of the program (called the “X Project”) and results can be found elsewhere (Lipkus et al., 2004). In brief, this program sent participants a video and print self-help cessation materials. A randomly assigned subset of program participants also received three telephone counseling calls. Recruiting teens from varied backgrounds to obtain a sufficiently large sample to allow a rigorous evaluation of the X Project was considered a challenge, and use of the FITD approach in shopping malls was seen as a promising way to overcome this challenge. It is an approach that relies on interpersonal and telephone communications in conducting the recruitment, which McDonald (1999) found to be more successful in his review of other recruitment studies.

Unfortunately, we were limited to comparing whether our FITD approach in shopping malls could achieve better recruitment rates than those found in previous studies conducted either with adult smokers (median of 2%) or school-based student smokers (median of 7.8%; McDonald, 1999, 2001), since no prior studies with teen smokers from the general population have been done on smoking cessation. Another limitation is that we did not have the resources available to set up any of the other possible experimental conditions that would allow isolation of the effects of FITD or malls. We did not have the ability to test (a) how alternative recruitment approaches to FITD would work on teens in malls, allowing us to isolate the effect of FITD, or (b) how FITD would work on teens in settings other than malls, allowing us to isolate the effect of the malls. We were able to conduct an experiment establishing that two different FITD approaches—which are described later as light FITD and heavy FITD treatments—performed similarly, but this did not address the issue of the relative effectiveness of FITD versus malls.

Still, we feel that knowing that a combination of both FITD and shopping malls can produce recruitment results comparable to or better than what has been obtained in previous studies recruiting adult smokers from
the general population or teen smokers from schools (McDonald, 1999, 2001) is a helpful first step in guiding the development of future teen cessation programs. We also learned a great deal about the practical problems of applying an FITD recruitment approach in shopping malls that should be helpful to future researchers.

Method

Participants

Our study was conducted at 11 shopping malls in North Carolina, South Carolina, Georgia, and Tennessee. Professional mall-intercept firms were contracted to do the recruitment, with one firm serving as the overall coordinator. The firms recommended malls that typically have the greatest teen traffic. Staffs of these firms received identical training from a member of our research team.

Table 1 lists the number of teens obtained from each mall and the number of times (waves) teens were recruited from each mall. The variation in numbers across malls seems to be the result of several factors, including

Table 1

<table>
<thead>
<tr>
<th>Malls Used for Recruitment and Number of Consenting Teen Participants</th>
<th>Number of teens who consented to be called back</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC Mall 1 (15 waves)</td>
<td>169</td>
</tr>
<tr>
<td>NC Mall 2 (8 waves)</td>
<td>171</td>
</tr>
<tr>
<td>NC Mall 3 (15 waves)</td>
<td>468</td>
</tr>
<tr>
<td>NC Mall 4 (15 waves)</td>
<td>163</td>
</tr>
<tr>
<td>NC Mall 5 (2 waves)</td>
<td>112</td>
</tr>
<tr>
<td>NC Mall 6 (5 waves)</td>
<td>45</td>
</tr>
<tr>
<td>NC Mall 7 (14 waves)</td>
<td>302</td>
</tr>
<tr>
<td>GA Mall 1 (8 waves)</td>
<td>54</td>
</tr>
<tr>
<td>TN Mall 1 (11 waves)</td>
<td>420</td>
</tr>
<tr>
<td>SC Mall 1 (11 waves)</td>
<td>190</td>
</tr>
<tr>
<td>GA Mall 1 (7 waves)</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>2,119</td>
</tr>
</tbody>
</table>

Note. NC = North Carolina; GA = Georgia; TN = Tennessee; SC = South Carolina.
the intensity of mall foot traffic, the skills of the mall-intercept firms, and the
weekends chosen for the recruitment waves (see Discussion).

At each mall, trained staff estimated the ages of passersby and ap-
proached individuals and groups of youths offering a free Mrs. Fields’®
cookie if they qualified for our “Teen Consumer Health Study.” If they were
interested, they completed a seven-item questionnaire asking their age, sev-
eral filler questions about health behaviors, and whether they had smoked a
cigarette, even a puff, during the last month. Of the nearly 40,000 people
who were intercepted, 5,591 of them “qualified” by being age 15 through 18
and answering the smoking question positively. In order to prevent them
from informing other teens about what was needed to win a cookie, teens
were not told the qualification criteria.

Procedure

Of those who qualified, one third were assigned randomly to a light foot-
in-the-door group, and two thirds were assigned to a heavy foot-in-the-door
group. This unbalanced design allowed comparison of the light and heavy
groups with ample statistical power, while still favoring the recruitment
approach found more effective during a pilot study (and increasing the
chances that the most teen smokers possible would enter the cessation pro-
gram). We anticipated that the heavy FITD treatment would achieve greater
consent rates because more trust in the researchers would develop during a
longer interaction time.

Measures

The light FITD participants were led to an office in the immediate vi-
cinity where they first were asked three questions that served, in part, as
manipulation checks to see if the light and heavy FITD treatments worked.
The first question asked participants how much they agreed, on a 5-point
Likert-type scale ranging from 1 (strongly agree) to 5 (strongly disagree), that
cigarette smoking causes hand tremors (a topic covered in the heavy FITD
treatment, but not in the light one). The next two questions were meant to
tap participant “trust” in the study. The questions were rated on 5-point
scales and asked if participants believed “this study was being done to help
teens like me,” and if they trusted “what this study is all about.”

Following these questions, the teens were asked for their names and
phone numbers on an informed consent form indicating their willingness to
be called back and asked about their mall experience and to be informed
about a smoking-cessation study. After a teen volunteered his or her phone
number, the interviewer immediately called the number to see if it was a
working number. A teen was not considered to have consented to be called back unless a working phone number was provided.

The heavy FITD group participants also were led to the office, where they first were asked to list on a blank sheet of paper as many reasons as they could for quitting smoking. Subsequently, they watched a 3.5-min segment of a 3-D animated video showing how nicotine affects brain functioning, which contained a segment explaining how nicotine can cause hand tremors. Following the video, they were asked the question about hand tremors, which therefore became a manipulation-check question on which the heavy FITD group should have scored higher. This was followed by the two trust questions, which were used to test whether greater trust materialized from the longer interaction. Finally, they were asked for their names and phone numbers on an informed consent form that indicated their willingness to be called back and asked about their mall experience and to be informed about a smoking-cessation study. As with the light FITD group, a teen was not considered to have consented to be called back unless a working phone number was provided.

Informed consent or parental consent was not required by our Institutional Review Board prior to this point, because participants were considered to be exposed to minimal risk. There was no way to connect the identities of the intercepted teens with either their answers to the screening and trust questions or their lists of reasons to quit without first getting their informed consent. Additionally, the various tasks of answering the screening and trust questions, listing reasons to quit, or watching the video were not viewed as likely to create any harmful thoughts, feelings, or behaviors by the teens. Regardless of whether or not they gave consent, all participants received a coupon for a free cookie.

It was not feasible to have a pure control group that was approached only with a “cold” large-behavior request, as is typically incorporated in FITD studies. To achieve random assignment of teen smokers to cold-request and FITD conditions, one would first need an identified sample of teen smokers from the general public. Since a mailing list or database of such a sample does not exist, we chose to essentially create our own list through intercepting teens at shopping malls. However, the process of screening the teens to determine if their age and smoking status qualified them to be in our list/sample also created enough interaction with them to eliminate the possibility of a truly cold request. The need to obtain informed consent before bringing up the topic of smoking cessation—as well as parental consent before inviting them to enter any type of cessation program, unless they were 18 years or older—also made a cold request impossible. Thus, our light FITD treatment was the closest we could come to creating a cold-call control treatment.
The large-behavior request (i.e., asking teens to join a smoking-cessation program) occurred by phone within about a month after the FITD treatments. A delay in making a large-behavior request is common in FITD studies and may make the technique more effective (Scott, 1977). Trained telephone recruiters identified themselves as working with the mall intercept group and asked if teens were willing to participate in a cessation program that would require them to (a) review self-help cessation print materials and a video, (b) respond to three telephone surveys over the next 8 months, (c) possibly get three telephone counseling sessions lasting 5 to 15 min over the next 3 months, and (d) submit a saliva sample by mail in exchange for $10 if they quit smoking.

Teens under the age of 18 years were told that parental consent was required. Consent from parents was requested over the phone. Teens were informed that they would get a free movie pass after they completed the entire program.

Hypotheses

Based on the results of a pilot study showing that the heavy FITD group was easier to reach by telephone, we expected that they also would be more likely to consent to enter the smoking-cessation program. Additionally, comments from our pilot-study recruiters led us to suspect that the heavy FITD group gave us more accurate phone numbers because they were more trustful of the study than was the light FITD group. Therefore, we expect that teens in the heavy FITD condition will be more trusting than will light FITD teens. We also expect that this trust will mediate the effect of the FITD treatment on consent rates. Furthermore, our pilot study has led us to expect that using either FITD treatment will produce recruitment results comparable to or better than the 2.0% to 7.8% median rates that have been reported in prior studies (McDonald, 1999, 2001).

Results

Figure 1 summarizes the multistep recruitment procedure. The number of teens who participated in each step is shown, along with the percentages of those from previous steps that moved to a given step. The results from both treatment groups are pooled because they did not show differences in performance at any step, and the manipulation-check question about hand tremors did not score differently between the groups (see Table 2). This lack of difference between the groups was not expected, based on the results of the pilot study, and possible explanations for this finding are discussed later.
Figure 1. Number of teens recruited at each step of recruiting process (combined results for light and heavy foot-in-the-door groups).
Nearly 40,000 young people were intercepted; 13,565 were age 15 through 18 years, of which 5,591 (41%) had smoked at least a puff in the last month. By comparison, the percentages of high school students in North Carolina and Tennessee who had smoked at least once in the last month before being surveyed were 32% and 36%, respectively, in 1999 (Centers for Disease Control and Prevention, 2000). Of the 5,591 teens, there were 3,837 (69%) who agreed to return to the mall offices and went through one of the two treatment procedures.

Regardless of treatment group, 2,119 (55% of those who were treated) consented to provide their names and had working phone numbers, and 1,509 (71% of those who left their names and numbers) of them were reached by phone. Of those who were reached, 823 (of 1,509 or 55%)—or 21% of those who were treated (i.e., Step 4) and 15% of those who qualified at intercept (i.e., Step 3)—consented to participate in the smoking-cessation program (i.e., Step 7). Furthermore, 645 (43% of those reached)—or 17% of those who were treated and 12% of those who qualified at intercept—had parents who consented or who were 18 years old and consented (i.e., Step 8). The most frequent reasons given by teens and parents for not consenting,
based on a content analysis, were “lack of time” (stated by 29% of those who refused and gave a reason) and “no interest” (22%).

The characteristics of the recruited teens shifted slightly during the steps. At Step 5, the 2,119 teens who left their names and numbers averaged 16.6 years old; and were primarily female (51%) and White (81%; 13% were African American, and 6% were “other”). At Step 8, the 645 teens averaged 16.6 years old; and were primarily female (55%) and White (81%; 12% were African American, and 7% were “other”). There was less attrition with females than with males. Additionally, a notable proportion of the recruited teens (i.e., 4% for 15-year-olds, 12% for 16-year-olds, 22% for 17-year-olds, and 39% for 18-year-olds) stated that they were not enrolled in school, which was a desired result of the recruiting approach.

Table 2 compares the results of the two treatment groups. No significant differences emerged between groups in the percentage of those who left phone numbers who were reached, or the percentage of those who were reached and who also consented to participate. There was also no significant difference between groups on the manipulation-check question regarding hand tremors. However, participants in the heavy FITD group exhibited significantly more trust, but this did not lead to providing more accurate phone numbers, contrary to the pilot study. Thus, it appears that the longer interaction experienced by the heavy FITD group created more trust, but this did not translate into a greater inclination to cooperate with the research studies.

Discussion

Overall, 21% of teens who received either FITD treatment consented to enter our smoking-cessation program. A more conservative estimate of our recruitment rate is that 12% of eligible teen smokers provided both their own and their parents’ consent (for those under 18 years) to enter our program. In either case, this compares favorably to the recruitment rates achieved by prior studies that attempted to recruit adults from the general public (median of 2.0%) or students from school-based settings (median of 7.8%; McDonald, 1999, 2001).

Note that our 12% recruitment rate may not be exactly comparable to the rates reported in McDonald’s (1999, 2001) reviews because those studies reported the percentage of the target population of smokers who consented to enter the cessation program, while we reported the percentage of the intercepted teen smokers in the malls who consented. If intercepted teen smokers in the malls were representative of teen smokers in the general population—our target population—then our recruitment rate calculation can be compared fairly to previous work. But if the intercepted teen smokers
were somehow more accessible or more willing to participate in research studies than teen smokers from the general population, then our recruitment rate may overstate the percentage of teen smokers from the general population who consented. Because the percentage of intercepted teens in the malls who were smokers (41%) closely approximates the Centers for Disease Control and Prevention (CDC) figures on teen smoking for the states of North Carolina and Tennessee (32% and 36%, respectively), we are inclined to believe that the intercepted teen smokers in the malls are not very different from the general population of teen smokers in those states.

We feel that our 12% recruitment rate is a conservative estimate and may represent only what might happen in malls where FITD treatments must be administered after a walk to an office and cannot be administered at someplace in the immediate vicinity of where participants have been intercepted. In our pilot study, where the FITD treatment could be administered in very close proximity to where the teens were intercepted, very few refused “treatment.” Where immediate treatments can be implemented, recruitment rates following parental consent of closer to 17% of eligible teen smokers might be reached. Although prior recruitment studies have focused on consent rates, we are able to report that 502 teens—or 13% of those receiving a FITD treatment and 9% of those who qualified at intercept—completed the baseline survey that began the cessation program.

Our failure to replicate the pilot results in terms of better recruitment rates for the heavy FITD rather than the light FITD group is a positive outcome. It suggests that the less expensive light FITD treatment is adequate to achieve good recruitment results.

Although our approach is promising, we encountered several problems that created administrative difficulties and raised costs, including the following:

1. Most malls lease out exclusive rights to conduct studies on their premises to marketing research firms that charge what the market will allow. Additionally, most research firms own the rights to only a few malls, which necessitated hiring several firms, plus a coordinating firm.

2. The staffs of mall-intercept firms must be monitored closely. They are compensated typically on a per-interview basis; therefore, they are tempted to accept recruits into studies who do not meet specified qualifications. We experienced instances in which teens were told to say that they were between 15 and 18 years or that they smoked. We discovered this problem by hiring young people to pretend they were mall shoppers and by having teens confess during telephone interviews that they were told to lie. As a result, three
mall-intercept firms were fired before they completed their planned
data collection, and all of the data that were collected by the of-
fending firms were not used. Clearly, if the offending firms were
being used to obtain diversity in geographic representation—which
was not the case here—then geographic bias could have been in-
troduced into the study by excluding firms.

3. Teens are extremely difficult to reach at home. Many teens work
evenings and weekends, leaving very few opportunities to reach
them at home. Numerous callbacks are required, and much of the
calling must be done on weekends.

4. Teens repeatedly visit the same malls, so within two to three
weekends, the same teens may be intercepted twice. This means
having to work with more malls and with more firms. We at-
ttempted to screen out teens who were intercepted more than once
from our results, eliminating 14 teens who ended up consenting to
enter the program from our recruitment-rate calculation. This was
discovered by cross-checking names and telephone numbers during
the callbacks.

All of these issues substantially raised the costs of conducting the
study. The total fees paid to mall-intercept firms divided by the number of
teens who completed Step 8 amounted to $188 per consent. The wages
paid to telephone recruiters added another $41 per consent. Thus, it cost
approximately $229 to recruit each teen to the program, not including
the line charges for telephone calls or the costs of cessation materials
and counseling calls. If only a light FITD treatment had been used, we
estimate that the mall-recruitment costs would have been reduced to $143
per teen, lowering the overall cost per consent to $184 per teen. When
weighed against the costs to society of a lifetime of smoking by a young
person, this amount may be worth it for a public health agency if the ces-
sation program can be successful in getting a high proportion of participants
to quit.

A mall-based FITD approach can be effective for recruiting teens to
smoking-cessation programs. Given the long-term benefits of getting teens
to quit smoking, it may be worth making a significant investment in using
this recruitment method. Care must be taken to minimize the costs of using
this methodology.

Ideally, it would be desirable if malls would permit the staff of a public
health organization to use space and facilities at a low cost, instead of
requiring expensive mall-intercept firms to be hired. For example, we es-
timated that it cost us only $67 per consent for our pilot study in which we
were provided access to a busy mall for a nominal charge and used our own staff as recruiters. This was about one third the cost in our larger trial with the light FITD treatment.

We favor the use of large malls where a fairly representative group of teens can be intercepted. Future research could investigate whether recruitment rates can be improved significantly—therefore reducing costs—by making “treatment” locations closer in proximity to the intercept points and by obtaining other contact information from teens (e.g., cell phone numbers, e-mail addresses). Other incentives besides cookies and movie passes (or more of them) could be studied also.

Another option to explore is using strip malls or other retail sites where teens are prevalent, but where intercept sites are made available for a nominal fee. If less expensive approaches using retail locations cannot be identified, it may be more effective to go through schools and institutions, recognizing that many teens will be missed by this approach and that the true costs of using school- and institution-based recruiting may be difficult to assess. In fact, one thing that may help to improve recruitment rates at a reasonable cost in these settings is the use of the foot-in-the-door technique, and future research could examine this possibility.

References


