Marketing Effectiveness in Reaching the Nontreatment-Seeking Marijuana Smoker

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ABSTRACT. Successfully meeting recruitment goals is critical in completing clinical research, but it is often one of the most difficult challenges in conducting a study. This paper describes the recruitment effort for a randomized controlled trial of a brief intervention targeting ambiv-
alent marijuana smokers. The project successfully recruited 188 heavy marijuana smokers, the majority of whom were precontemplators or contemplators in respect to their motivation to make changes. A theoretical model of social marketing is utilized in discussing the development and evaluation of this study’s recruitment efforts. The model is potentially useful in the planning and initial implementation phases of recruitment strategies, both in efficacy studies and in community treatment settings.

**KEYWORDS.** Social marketing, recruitment, marijuana, check-up, brief intervention

**INTRODUCTION**

Successfully meeting recruitment goals is critical in completing clinical trials and is often one of the most difficult challenges in conducting a study. Certain problems and consequences are commonly encountered: overestimating the pool of eligible participants and the subset of those who are likely to be interested in participating; under-recruiting the requisite number of participants, thus restricting statistical approaches to detecting meaningful outcomes; failing to achieve an even flow of eligible participants, thus inefficiently using staff resources and, particularly in the context of group interventions, increasing the risk of participant attrition due to long wait times; and having insufficient empirical evidence to guide the selection of cost-effective participant recruitment approaches (Agras & Bradford, 1982; Ashery & McAuliffe, 1992; Holden, Rosenberg, Barker, Tuhrim, & Brenner, 1993; Hunninghake, Darby, & Probstifield, 1987; Lasagna, 1979; Spiker, 1992). In this paper, the authors report on recruitment efforts for an intervention trial with adult marijuana smokers. A theoretical model of social marketing is utilized in discussing the development of this study’s recruitment efforts and their subsequent evaluation. While the focus of this paper is on participant recruitment for research, its methods and findings are pertinent as well for community treatment providers.

**The Marijuana Check-Up: An Intervention Tailored for the Nontreatment-Seeking Marijuana Smoker.** The Marijuana Check-Up (MCU) is designed specifically to reach adult heavy marijuana smokers who are experiencing ad-
verse consequences resulting from their use but are not yet making changes. The "check-up" model, first developed in the alcoholism field (Miller & Sovereign, 1989) and specifically designed for those at the earliest stages of readiness for change, has shown considerable promise for this purpose.

The MCU involves two sessions, the first of which includes a structured interview and the administration of self-report questionnaires designed to assess the individual’s use patterns, positive and negative consequences of marijuana use, and attitudes and beliefs favoring and opposing change (Stephens et al., 1998). Data from these assessment instruments are then summarized in a written Personal Feedback Report and reviewed by the counselor and participant in the second session. Counselors are trained to conduct the feedback session using a therapeutic style referred to as motivational interviewing (Miller & Rollnick, 1991). This approach represents an empathic counseling model intended to facilitate a candid exploration by the client of his/her concerns and thoughts about use, including ambivalent attitudes. The counselor reinforces client expressions of motivation for change and works to support the client’s perception that he or she is capable of succeeding with such an effort. If the client becomes interested in working toward abstinence or reduced use, the counselor offers a menu of change options and then focuses on pertinent cognitive and behavioral skills. As appropriate, referrals are made to support groups and treatment programs.

Theoretical Model of Social Marketing. In reviewing the literature concerning participant recruitment for clinical trials, one finds disparate terms and concepts being used across studies to identify marketing methods and analyze outcomes (Hunninghake et al., 1987). A more uniform set of terms may help clarify and enhance the dialogue about this important area of research. McGuire’s (1985) communication/persuasion matrix is a potentially useful paradigm for this purpose, and refers to inputs (components of the communication effort) and outputs (variables associated with the intended outcomes). This paper will discuss the five communications components associated with inputs: receiver, message, channel, source, and target.

Receiver refers to the intended audience. For the MCU, the intended receivers were individuals who were neither seeking treatment nor self-initiating change, but were struggling with mixed motivations about changing their marijuana use. Drawing from a paradigm developed in the smoking cessation field to describe a continuum of readiness for change (DiClemente et al., 1991), the receivers can be conceptualized as: precontemplators—those who are experiencing adverse consequences associated with their drug use, but are not considering making changes, and contemplators—those who are giving consideration to quitting or cutting back, but are not yet at the point of making a commitment to do so. Although specifically targeting precontemplators and contemplators, the
MCU also enrolled participants in the other three stages of change: *preparation*—participants interested in making changes, *action*—participants who had made some changes in the last 6 months and were interested in making further changes, and *maintenance*—people who had maintained change for 6 months or longer.

Additional receiver characteristics important to this study were gender and ethnicity. Participants in previous studies of the treatment of marijuana dependence conducted by this group (Stephens, Roffman, & Curtin, 2000; Stephens, Roffman, & Simpson, 1994) were insufficiently diverse in terms of these characteristics. Thus, in order to generalize the results of the intervention to a more diverse population, we sought to increase representation of women and ethnic minority groups.

*Message* refers to the types of appeals, message style, and content. The ordering of content and the volume and spacing of the material are also significant. How the message is crafted, the use of humor, what one chooses to say or not say, and whether the emphasis is on harms to be avoided or benefits to be achieved are all aspects of the message that need to be considered with reference to the intended audience. In intervention outcome trials that focus on promoting behavioral change, the choice of message will vary with the individual’s attitude about change. That is, receivers who are ambivalent about or have little motivation to change may be more receptive to a message that raises awareness of a problem, heightens the receiver’s concerns or sense of personal vulnerability to harm if change does not occur, and offers a hopeful message about the probability of succeeding. In contrast, the message content for receivers who are highly motivated to change will more likely describe the intervention and the organization in which it is being offered in highly positive terms, and will also highlight the potential benefits of study participation in achieving one’s behavior change goals.

Conventionally, marketing to recruit participants for drug dependence treatment is designed to reach individuals who are motivated to become abstinent. The recruitment message, therefore, typically highlights the benefits of overcoming dependence (e.g., enhancements to health and quality of life). A particular concern in attracting adult marijuana users who were ambivalent about making changes was to avoid arousing defensiveness. Messages that required receivers to label themselves as substance abusers who needed treatment could be expected to elicit such defensiveness. Similarly, given a long history of exaggeration and misinformation regarding the negative effects of marijuana, it was important to distinguish the MCU from services intended to convince the user of the evils of marijuana use. MCU was marketed as a brief, confidential, and nonjudgmental service for marijuana smokers who wanted to take a closer look at their use. It was emphasized that the MCU was not treat-
ment. The message additionally conveyed assurance that there would be no pressure to change, and that it would be up to the individual to decide what, if anything, to do following participation.

**Channel** refers to the avenue by which the recruitment message is delivered. For substance abuse intervention studies, the channels may include advertisements in the written press, poster displays and flyers distributed in health care or social services settings, advertisements or public service announcements on the radio, and in-person presentations to the staff of referral agencies. Other terms used to describe the communication channel are pathway (Schlemitzauer et al., 1998), medium (Icard, Zamora-Hernandez, Spencer, & Catalano, 1999), or method (McDonald, 1999). Projects often employ a diverse array of channels so that the message reaches people in multiple venues and life circumstances. To universally inform the general public, advertisements may be placed in mainstream newspapers, on buses, or on the radio or television. More tailored channels, however, such as employing recovering heroin or cocaine addicts as outreach workers to initiate contacts with drug users in certain areas in a city have the intention of reaching and informing a specific segment of the public (Peltier, Telch, & Coates, 1982). Various **marketing tools**, utilized within specific channels, offer alternative methods for conveying messages. For example, if print media is the communications channel, the message might be conveyed using such marketing tools as letters to the editor, display or classified advertisements, a guest editorial, or the generation of a feature news story. Marketing tools for radio messages could be public service announcements, talk show interviews, or paid spots. In the MCU, we attempted to use a variety of channels that were systematically chosen to reach the receivers of interest.

**Source** refers to the institution that operates, sponsors, or funds a program. It may also refer to the organization’s main representative. If it is the organization, the degree to which intended receivers of the recruitment message value or devalue the institution may have an important impact on their response. Icard et al. (1996) use the term “messenger” as a synonym for source and suggest that when the primary contact or representative of a project is an individual, that person’s credibility, status, or perceived power are more critical at the moment of contact than the organization which they represent. That is, if the source on the front line is not credible or well perceived by the message receivers, the battle is already lost and for whom they work becomes a moot point. In the MCU, the primary source was the university that sponsored the research, but careful attention was given to the training of the staff in order to enhance the credibility of the project in the eyes of the participants.

**Target**, the final component in McGuire’s communication/persuasion matrix, refers to the intended outcome of the communication, i.e., what the receiver is expected to do, know, or believe in response to the message. Kotler
(1982) identifies four types of health-related persuasive responses that social marketing campaigns are designed to effect. A cognitive change campaign is designed to disseminate public information in order to educate the public (e.g., knowledge about health risks associated with “club” drugs). A value change campaign is designed to alter beliefs or values (e.g., reinforcing adolescent norms about resisting peer pressure to use drugs). A behavioral change campaign is intended to prompt receivers to modify some aspect of their behavior (e.g., using a designated driver). An action change campaign attempts to elicit a particular response during a given period (e.g., a breast cancer detection campaign designed to encourage yearly mammograms). When recruiting participants from the general public for an intervention outcome trial, cognitive and action change campaigns are often used because the primary objectives are to: (a) inform the intended receiver of the benefits of accomplishing change, and (b) trigger a specific action, i.e., the receiver initiating contact with the study. Thus, the ultimate test of the effectiveness of the marketing campaign for the MCU was the extent to which it was effective in getting the target population to engage with the project.

**The Marketing Challenge: Recruiting the Nontreatment Seeker for a Brief Intervention.** In the remainder of this paper, we discuss the development of the marketing strategies and present data on their effectiveness in accomplishing these recruitment objectives. Four research questions guided the evaluation. Was the overall marketing campaign successful in reaching the target population? Were recruitment channels differentially effective in eliciting inquiries from callers who were interested, eligible, and chose to enroll? Were recruitment channels differentially effective in eliciting inquiries from interested and eligible callers with specified characteristics? Finally, was there differential cost efficiency among the five recruitment channels in eliciting: (a) initial inquiries, (b) inquiries from interested and eligible persons, and (c) inquiries from individuals who subsequently enrolled?

**METHODS**

The NIDA-funded randomized control trial (1997-2000) randomly assigned eligible participants to three conditions: experimental (motivational enhancement), control (an information-only intervention), and a wait-list control condition. Eligibility criteria included: fluency in English, 18 years of age or older, having smoked marijuana on 15 or more of the preceding 30 days, not currently receiving drug/alcohol treatment or participating in a 12-step fellowship, not currently being dependent on other substances, and residing within a 60 mile radius of the study site. Following exposure to the intervention, all par-
Participants were reassessed at 6 weeks, 3 months and 12 months. Additional details concerning the study methodology can be found in Stephens et al. (1998).

**Receivers.** The recruitment phase of the study was 13 months in length (March 1998-April 1999). Responding to marketing efforts for the Marijuana Check-Up, 960 individuals called to inquire about the project. During this initial phone contact, project staff had three primary tasks: (1) to determine through which channel(s) the caller had learned of the study; (2) to inform the individual about the nature of the trial; and (3) to determine eligibility. Of the 587 callers who were interested in participating, 371 met study criteria. One hundred eighty-eight individuals were formally enrolled in the study and completed the baseline assessment.

**Ethnic Minorities and Women.** Two months prior to the start of recruitment, we formed a work group to focus on recruiting ethnic minorities and women. Pertinent literature on recruitment from minority populations was reviewed (Chacin, 1996; Finn, 1994; Harachi, Catalano, & Hawkins, 1997), and we consulted with key informants, such as public health professionals and nonprofit agency staff serving ethnic minority communities in the Seattle area. Several informants noted that previous studies sponsored by the university had left minority participants feeling used and believing that the university comes to the community when it wants something, gets what it wants, and leaves nothing in return. We were urged to make certain that participants receive something tangible such as compensation, access to other services on the campus that might benefit community members, or—at the very least—a sharing of the knowledge gained from the research. Being perceived as a largely White institution, there was concern about how the data collected from members of their ethnic background would be interpreted and disseminated (e.g., ultimately represented in the literature). On the other hand, there also was a level of credibility and legitimacy associated with the university, and the consultants were pleased that we were making an effort to include communities of color in the research. We were encouraged to conduct focus groups and employ outreach workers. We worked toward cultural sensitivity and competence at this phase of the study by devoting time and resources to obtaining consultation on the development of the minority component of the marketing effort. An important limitation in this regard, dictated by funding constraints, was the necessity of serving only individuals who were fluent in English.

Two months after recruitment got underway, three outreach workers were hired and a month later focus group sessions were held with women, African Americans, Latinos, and Native Indians. These three racial/ethnic subpopulations represented approximately 10% of the Seattle-area general population. Fiscal constraints prevented a broader representation of subpopulations being included in this process. Focus group participants were recruited through flyers posted at
community agencies, word of mouth, and e-mail networks at the university. The sessions were held in nonuniversity facilities, dinner was provided, and participants were paid $25 for approximately two hours of their time. Project staff sought input concerning: source (attitudes concerning credibility of the university as the sponsoring institution), channel (most effective methods for engaging their specific community), message (language and content of the marketing tools), and receiver (perceptions of marijuana use among members of their community).

**Developing the Message.** Recruiting nontreatment-seeking marijuana users for an intervention trial presented a unique challenge. Following Miller’s earlier work with the Drinker’s Check-Up (Miller & Sovereign, 1989), we included the term “check-up” in the project name to convey the message that participants would have the opportunity to experience an assessment, but were not expected to commit themselves to either treatment or behavior change. To catch the viewer’s attention as well as communicate the project’s nonjudgmental attitude about marijuana use, the image of a marijuana leaf was added as the backdrop behind the name.

We strove to keep our recruitment message straightforward and easy to understand. Eight marketing tools were developed, each of which will be discussed in the context of the channels in which they were used. Each tool had to convey three core pieces of information: project name, phone number, and source information, i.e., the fact that this was a research project of the University of Washington, School of Social Work. Three additional pieces of information, the availability of incentives for completion of follow-up assessments, a statement of confidentiality, and the project’s hours of operation, were included in most marketing tools.

Two catch phrases were developed with the intention of tapping into the receivers’ own sense of curiosity about their marijuana use. We alternated “Marijuana Got You Thinking?” and “Questions About Pot?” in our display ads, believing that they might reach different subgroups. The phrase “Marijuana Got You Thinking?” targeted users further along in their readiness to change, i.e., people who had been actively thinking about their marijuana use, some of whom were interested in making changes. The second phrase “Questions About Pot?” was geared to more ambivalent, precontemplative users who might have been put off by implications that they should be thinking about change. Focus group participants responded well to both phrases, adding another level of confidence to the kind of message that we were putting out into the community.

**Selecting the Channels.** The channels initially selected for marketing (print media and radio) were based on recruitment strategies successfully used in our two earlier treatment outcome trials (Stephens, Roffman, & Curtin, 2000; Stephens, Roffman, & Simpson, 1994) and a pilot study of the Marijuana
Check-Up (Stephens & Roffman, 1997). Later, a project recruitment booth at a summer festival focusing on marijuana and hemp policies (Hempfest) was added to the marketing channels.

**Print Media.** Of the three marketing tools available for use in the media (press releases, classified ads, and display ads), paid ads offered the greatest degree of control to the researchers in terms of the timing of the message’s appearance. Press releases can be useful if they pique the attention of a reporter who subsequently devotes coverage to the project, but success with this approach and the timing of the message’s appearance are uncertain. Paid advertisements, although more limited in scope than news stories, do not require the buy-in of a gatekeeper (i.e., reporter or editor) to gain access to readership. The majority of our print advertising was placed in an alternative newspaper called *The Stranger*. This weekly paper is circulated primarily in the greater Seattle area, distributes about 80,000 copies to 1200 locations, and estimates a total readership of 315,000 (The Media Audit, 1999). *The Stranger* was chosen because of its popularity with men and women in their 20s and 30s. Project display ads (4” x 4”) ran for a total of 15 weeks, and “bulletin board” ads (the size of a classified ad placed on the back page of the paper) ran for a total of 14 weeks. On 11 of those 14 weeks, three different bulletin board ads ran simultaneously. Display ads also were run in two other local alternative papers, *The Seattle Gay News* and *The Rocket*, a local music magazine published biweekly. *The Stranger* consistently generated more response and eventually became the single focus for advertising in the press.

For several reasons, no mainstream daily newspaper advertising was utilized for this project. We were concurrently conducting an intervention study for marijuana smokers who sought support in quitting use. To avoid confusion, recruitment ads for that study were placed in the mainstream daily press, while the MCU limited its print advertising to the alternative media.

When making decisions about print media ads, costs and message visibility were also important considerations. In the mainstream press, ads were three or four times more expensive than in the alternative press. With reference to visibility, daily papers have a more limited shelf life than the alternative weekly (and biweekly) publications, with each day’s paper becoming out-of-date with the arrival of the next day’s edition. Because two of the three alternative publications were single section editions, with page layouts about half the size of the local daily press, a 4” x 4” ad was potentially more visible than it otherwise might have been (see Figure 1).

**Radio.** Four marketing tools were used for this channel: press releases, public service announcements, interviews with talk show hosts, and purchased advertisements. As with the print media, paid advertising provided the most control over content, placement, and frequency, consistently generating many
inquiries whenever they ran. A Seattle-area “classic rock” station was the station of choice. Audience demographics for this station indicated that approximately 68% of the listeners were male and 50% were between the ages of 35 and 44. Advertising on this particular station had yielded good results for previous marijuana studies, whereas paid ads on a jazz station and two stations with more ethnically diverse audiences had not been productive in generating calls. For this study, rather than dilute on-air presence by placing fewer ads on more stations, we opted for a saturation approach on the station with proven effectiveness as a

FIGURE 1. Marijuana Check-Up Print Advertisement

Questions about pot?

call

THE MARIJUANA CHECK UP

(206) 616-3457

Objective information provided.
Participants will be paid.
Strictly Confidential.

A University of Washington, School of Social Work Project.
channel that could reach the project’s intended receivers. Sixty-second radio spots produced by station personnel using scripts co-written by MCU and station staff were run at seven different intervals throughout the recruitment period. They were aired between 12 and 24 times over each 3-4 day period, with costs ranging from $1,215 to $2,400 per period. During the focus group meetings, several members expressed dislike of the tone and style of the radio ad, saying it sounded “white” and critiquing the vocabulary as too academic. With input from our outreach workers, we subsequently used a local nonprofit production company to produce a new 60-second spot involving a dialogue between friends—a man and woman who run into each other on the street. Humor and a “down to earth” dialogue were intended to put more of a human face on the project, and the resulting ad was more casual and less academic (see below).

SAMPLE 60-SECOND RADIO SPOT

Kevin 6 1 6-3 4 5 7, 6 1 6-3 4 5 7
Shauna Why do you keep repeating that number?
Kevin I'm trying to remember it from a commercial I just heard.
Shauna What's it for?
Kevin It's for something called the Marijuana Check-Up, a research project through the University of Washington School of Social Work. They said they offer accurate information about marijuana and the project is strictly confidential. Not only is it free, but you get paid for participating!
Shauna Hmm, that sounds interesting. You know, there are so many rumors floating around these days about pot, some straight facts would be nice.
Kevin You just have to be 18 or older. Shoot, I think I just forgot that number!
Shauna It's 206-616-3457.
Announcer Call the Marijuana Check-Up for more information, 206-616-3457.

Hempfest. This annual one-day summer event, held in a Seattle park, is focused on building support for marijuana and hemp policy reform. Participants listen to free musical performances and drug policy reform speeches, and browse through many booths in which clothing, food, and smoking paraphernalia are sold. Because thousands of individuals attend Hempfest, it is an important opportunity to potentially reach a large group of probable marijuana smokers at one time. We operated a booth with a banner that read “Marijuana Studies at the University of Washington.” Free lemonade was offered to attract people to the booth where publicity materials concerning The Marijuana Check-Up
were distributed. Those who approached the booth were also invited to complete a brief anonymous questionnaire concerning their experiences with marijuana and attitudes concerning policy. The survey served the purpose of prompting people to think about their marijuana experiences, while also giving us the opportunity to introduce the Marijuana Check-Up. Approximately 1500 matchbooks printed with project publicity were handed out during the course of the day.

**Augmenting the University Source.** In addition to the above marketing procedures, the project developed materials to be distributed to gatekeepers and other key individuals in the community for whom we wanted to provide a succinct overview of the project. Five one-page summaries offered a history of the organization conducting the research, core information about the study itself, selected facts about marijuana, a “Statement of Belief” regarding the commitment of the research group to serving a diverse client population, and a five-point plan for doing so. The outreach workers assisted in revising the marketing plan and marketing tools (brochures, radio spots, etc.), distributing those materials, making relevant community contacts, and organizing and facilitating focus groups. The outreach workers also distributed flyers and matchbooks at local festivals and hung posters at service centers, bars, stores, coffeehouses, and community colleges.

**RESULTS**

Data analyses were completed using one-way ANOVAs for continuous measures and chi-square tests for categorical measures. In the event of an overall significant finding, post hoc tests were completed using the least square differences algorithm to test for pair-wise differences among continuous variables, and 2 x 2 chi-square tests were used to measure pair-wise differences among categorical variables. The significance level was set at .05. Participants with unknown channels were not included in the analyses (n = 34).

**Response Rates.** Potential participants responded to one or more of five recruitment channels utilized by the study. Paid print and radio advertisements combined generated 85% of all inquiries. Seven percent of callers came to the study via personal referrals, 4% called in response to outreach efforts, and the remaining 4% were recruited during Hempfest. While there was some variation in the percentage of overall callers elicited by the different channels who were interested in the project (ranging from 53.7% of those responding to outreach activities to 80.6% of those elicited from the Hempfest event), this response rate did not differ statistically across the five channels (see Table 1).
The channels differed significantly, however, with reference to their capacity to elicit eligible callers ($\chi^2, df = 4, p < .01$). Specifically, post hoc tests revealed that Hempfest generated a higher percentage of eligible callers (66.7%) compared to each of the other channels, while outreach activities produced the lowest (22.0%).

Overall, 187 callers (analyses excluded one enrolled participant due to an unknown channel) completed the initial baseline assessment and were enrolled in the study, representing 20.2% of all callers and 50.7% of callers who were eligible. Comparing enrollment rates by channel among all callers revealed statistically significant differences ($\chi^2, df = 4, p = .02$). Hempfest and print advertising were the most effective in generating inquiries that resulted in enrollment (36.1% and 22.9%, respectively). Outreach activities generated the lowest percentage of callers who ultimately enrolled (14.6%). While there was variation across channels in terms of the percentages of eligible callers who enrolled in the study (outreach efforts–66.7%; radio advertisements–42.6%), there were no significant differences among the five recruitment channels ($\chi^2, df = 4, p = .23$).

Channel Effectiveness by Specified Participant Characteristics. Table 2 presents data on specified participant characteristics, with reference to each channel, for callers who were both interested and eligible for the study ($n = 369$). The proportion of callers who were male did not vary significantly among the five mechanisms, with a range of 65.2% of males recruited through personal referral to 79.1% of males recruited via radio ads. There were significant differences with reference to age ($\chi^2, df = 4, p = .02$), where significantly younger participants

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### TABLE 1. Response Rates

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Paid Print</th>
<th>Radio</th>
<th>Personal Referral</th>
<th>Outreach</th>
<th>Hempfest</th>
<th>Test (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Callers</td>
<td>926</td>
<td>410</td>
<td>376</td>
<td>63</td>
<td>41</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Interested</td>
<td>582</td>
<td>260</td>
<td>229</td>
<td>42</td>
<td>22</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>% of all callers</td>
<td>62.9</td>
<td>63.4</td>
<td>60.9</td>
<td>66.7</td>
<td>53.7</td>
<td>80.6</td>
<td>$\chi^2 = (.12)$</td>
</tr>
<tr>
<td>Eligible</td>
<td>369</td>
<td>165</td>
<td>148</td>
<td>23</td>
<td>9</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>% of all callers</td>
<td>39.8</td>
<td>40.2a</td>
<td>39.4b</td>
<td>36.5abc</td>
<td>22.0d</td>
<td>66.7b</td>
<td>$\chi^2 = (&lt;.01)$</td>
</tr>
<tr>
<td>Enrolled</td>
<td>187</td>
<td>94</td>
<td>63</td>
<td>11</td>
<td>6</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>% of all callers</td>
<td>20.2</td>
<td>22.9abc</td>
<td>16.8b</td>
<td>17.5ab</td>
<td>14.6ab</td>
<td>36.1c</td>
<td>$\chi^2 = (.02)$</td>
</tr>
<tr>
<td>% of eligible</td>
<td>50.7</td>
<td>57.0</td>
<td>42.6</td>
<td>47.8</td>
<td>66.7</td>
<td>54.2</td>
<td>$\chi^2 = (23)$</td>
</tr>
</tbody>
</table>

1 Callers with unknown channel not included ($n = 34$).
2 $p < .05$. Proportions with different superscripts (a, b, or c) are significantly different from one another.
were recruited via print ads (mean age: 28.4 years) compared to older participants recruited via radio ads (mean age: 31.9 years). Ethnic minorities were more likely to identify paid print ads (20.0%) or outreach (33.3%) as the recruitment channel compared to radio ads (7.4%) ($\chi^2$, df = 4, p = .01). Readiness for change differed by channel, with 82.8% of those who responded to radio ads classified as precontemplators/contemplators compared to 66.7% of those who responded to paid print ads ($\chi^2$, df = 4, p < .01). There were no differences in the number of days in the past month that callers reported smoking marijuana (range 21.3 days for outreach to 26.6 days for Hempfest). Finally, those responding to print ads tended to live closer to the study site (mean distance: 10.0 miles) than callers responding to other recruitment sources (mean distance: 24.6 miles; $\chi^2$, df = 2, p < .01).

**Channel Cost Efficiency.** Table 3 presents the costs of various recruitment activities for each channel, as well as the resulting costs per caller across enrollment levels. Staff salaries, the costs for producing marketing materials, and direct placement costs (e.g., newspaper and radio advertisements) are included. Marketing funds ($32,792) were spent as follows: paid print (20.8%), radio advertisements (36.3%), personal referral (0%), outreach (39.1%), and Hempfest (3.8%). Costs per screened caller ranged from $26 for paid print ads to $583 for outreach activities, while costs per eligible caller ranged from $41 for paid print ads to $1,426 for outreach. Most importantly, costs per enrolled participant were estimated as: $72 for paid print ads, $96 for Hempfest, $189 for radio, and $2,139 for outreach. Overall, the recruitment cost per enrolled participant was $175.36.

**DISCUSSION**

In order to evaluate the efficacy of The Marijuana Check-Up intervention, a sufficient number of participants with particular characteristics were required to permit appropriate statistical analyses in detecting meaningful differences. Recruitment efforts were tailored to reach the target audience by utilizing a variety of channels and paying close attention to the message and credibility of the source. With reference to target outcome (i.e., response rates), the effort to reach and enroll the target number of intended receivers (n = 188 persons) was successful. The enrolled sample was demographically diverse, with 70% of enrolled participants classified in either the precontemplation or contemplation stages of change. Thus, receivers with key characteristics were reached, most of whom would have been unlikely to seek treatment for marijuana use. Yet there was only limited success in recruiting women and ethnic minorities, and there were large differences between the number of interested callers and
the number successfully enrolled. Channel selection appeared important in
reaching different types of receivers and in terms of the cost efficiency of re-
cruiting target receivers. Findings are discussed and summarized below. Con-
cluding comments reflect on implications for future research and on how
social marketing may be of use to practitioners in community settings.

Source and message—common across all channels—likely played important
roles in attracting nontreatment seekers. As the source, the university was pre-
sumably viewed as unbiased by precontemplators and contemplators, having
neither the profit motive nor the mandate to promote abstinence that might be
expected in drug treatment agencies. Further, research staff was carefully
trained to engage interested callers by assuming a nonjudgmental position to-
ward marijuana use, emphasizing confidentiality, and providing relevant in-
formation regarding the MCU’s purposes and procedures. The marketing
message, crafted to be nonthreatening, nonjudgmental, and unbiased, also em-
phasized that the service being offered was not treatment. Both of these com-
ponents seemed to resonate well with participants who were not interested in a
treatment experience, but who had enough questions or concerns about their
marijuana use to warrant approaching a “check-up.”

Response rates were not differentially effective across channels in attract-
ing interested callers. There were differences, however, in the percentage of el-
igible participants. Hempfest attracted the highest percentage of eligible

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**TABLE 2. Channel Effectiveness by Participant Characteristics, Eligible Participants (n = 369)**

<table>
<thead>
<tr>
<th>Gender (n, % male)</th>
<th>Paid Print Advertising (n = 165)</th>
<th>Radio (n = 148)</th>
<th>Personal Referral (n = 23)</th>
<th>Outreach (n = 9)</th>
<th>Hempfest (n = 24)</th>
<th>Test (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>122 (73.9)</td>
<td>117 (79.1)</td>
<td>15 (65.2)</td>
<td>6 (66.7)</td>
<td>17 (70.8)</td>
<td>( \chi^2 = 3.131 ) (.54)</td>
</tr>
<tr>
<td>Age (mean, sd)</td>
<td>28.4 (9.0)</td>
<td>31.9 (10.4)</td>
<td>28.7 (10.9)</td>
<td>27.7 (9.9)</td>
<td>27.7 (9.0)</td>
<td>( F = 2.983 ) (.02)</td>
</tr>
<tr>
<td>Ethnicity (n, % white)</td>
<td>132 (80.0)</td>
<td>137 (92.6)</td>
<td>20 (87.0)</td>
<td>6 (66.7)</td>
<td>20 (83.3)</td>
<td>( \chi^2 = 12.592 ) (.01)</td>
</tr>
<tr>
<td>Stage of Change (n, % precont/cont)</td>
<td>86 (66.7)</td>
<td>82 (62.8)</td>
<td>14 (77.8)</td>
<td>6 (75.0)</td>
<td>18 (75.0)</td>
<td>( \chi^2 = 7.784 ) (.10)</td>
</tr>
<tr>
<td>Days Smoked/30 (mean, sd)</td>
<td>25.4 (5.1)</td>
<td>25.8 (5.3)</td>
<td>25.6 (5.8)</td>
<td>21.3 (5.5)</td>
<td>26.6 (4.7)</td>
<td>( F = 1.900 ) (.11)</td>
</tr>
<tr>
<td>Miles from Site (mean, sd)</td>
<td>10.0 (12.6)</td>
<td>25.3 (16.3)</td>
<td>19.4 (14.4)</td>
<td>28.0 (32.3)</td>
<td>23.8 (18.6)</td>
<td>( F = 21.569 ) (&lt; .01)</td>
</tr>
</tbody>
</table>

\( ^1 \) Unknown channels not included (n = 2). 
\( ^2 \) p < .05. Means and proportions with different superscripts (a or b) are significantly different from one another. 
\( ^3 \) Eligibility criteria excluded action/maintenance callers prior to 8/20/98, data presented based on recruitment after that date (n = 278 total).
receivers, possibly due to the characteristics of individuals attending the event and the amount of time staff could spend directly discussing the project with interested individuals. With respect to enrolled callers, there was differential effectiveness across channels when looking at all callers, but this difference disappeared when looking at just eligible callers. That is, there were no differences between channels once a caller was found eligible in predicting whether they would subsequently enroll.

### TABLE 3. Cost Efficiency

<table>
<thead>
<tr>
<th>Channel</th>
<th>Cost in Dollars ($)</th>
<th>Cost/Screened Caller (n = 582)</th>
<th>Cost/Eligible Caller (n = 369)</th>
<th>Cost/Enrolled Caller (n = 187)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paid Print</td>
<td>$6808</td>
<td>$26 (260)</td>
<td>$41 (165)</td>
<td>$72 (94)</td>
</tr>
<tr>
<td>Staffing (Labor)/Development</td>
<td>$609</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ad Placement</td>
<td>$6199</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio</td>
<td>$11,907</td>
<td>$52 (229)</td>
<td>$80 (148)</td>
<td>$189 (63)</td>
</tr>
<tr>
<td>Staffing (Labor)/Development</td>
<td>$320</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production Costs</td>
<td>$157</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ad Placement</td>
<td>$11,430</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Referral</td>
<td>$0.00</td>
<td>$0.00 (42)</td>
<td>$0.00 (23)</td>
<td>$0.00 (11)</td>
</tr>
<tr>
<td>Outreach</td>
<td>$12,835</td>
<td>$583 (22)</td>
<td>$1426 (9)</td>
<td>$2139 (6)</td>
</tr>
<tr>
<td>Outreach Workers</td>
<td>$9396</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staffing (Labor)</td>
<td>$1525</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Posters/Printing</td>
<td>$1314</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matchbooks</td>
<td>$490</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Powwow</td>
<td>$50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation</td>
<td>$60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hempfest</td>
<td>$1242</td>
<td>$43 (23)</td>
<td>$52 (24)</td>
<td>$96 (13)</td>
</tr>
<tr>
<td>Staffing (Labor)</td>
<td>$667</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rentals/Supplies</td>
<td>$180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Booth Cost</td>
<td>$150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matchbooks</td>
<td>$245</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Unknown channel calls were not included (n = 5).
2 Unknown channel calls were not included (n = 2).
3 Unknown channel calls were not included (n = 1).
With reference to channel effectiveness in reaching participants with specified characteristics, the gender ratios, although not ideal, were anticipated. Women made up 25% of the overall sample, a ratio that has remained fairly constant among marijuana intervention studies conducted by this research group. There were no gender differences among the channels.

Age was consistent across the recruitment channels, with the exception that participants recruited via print advertisements had a significantly lower mean age than did those recruited via the radio. The differential demographics of the alternative newspaper readership, in contrast with the audience of the “classic rock” radio station, might explain this finding. Otherwise, the age profile data overall suggest that this type of project is attractive to marijuana smokers in their upper 20s and early 30s, conventionally a time to begin taking stock of one’s life, achievements, and responsibilities. Although the percentage of people of color recruited by the project (13%) was lower than hoped for, the combined impact of the five channels resulted in minority representation that approximately mirrored the local county population.

The five recruitment channels appeared to be equally effective in reaching precontemplators and contemplators. Three of the channels (personal referral, outreach, and Hempfest) involved face-to-face conversations, with a credible individual serving as the source. With reference to the effectiveness of the radio advertisements, the tone used was purposefully nonjudgmental, light, and non-threatening. The informal and conversational delivery of the project’s radio ad message may have convinced individuals who would not have approached treatment agencies that it was safe to seek information or, with the promise of not being pressured to change, to express concerns about their marijuana use. Additionally, with the ever-increasing use of cell phones, potential participants were able to phone the project almost instantaneously after hearing the ad. During the three- and four-day periods in which radio spots were played, 40 to 50 calls would be received daily, often using all incoming lines within minutes of each advertisement airing. Staffing considerations must be made for this type of recruitment effort, as it is beneficial to respond to potential participants when they call, rather than having to return their calls at a later time or burdening callers with the necessity of calling back.

Finally, the paid print channel, despite the absence of a credible person-to-person communication, was also effective in reaching precontemplators and contemplators. In addition to the contributions of the project’s message and the university source, this channel’s effectiveness may have been a function of the placement of these advertisements in alternative weekly newspapers, both of which would be expected to represent tolerant attitudes about drugs.

The distance between the caller’s residence and the university was important because we did not want transportation difficulties to impede study com-
pletion. The finding that participants recruited via paid print advertising tended to live closer to the university is likely explained by the geographic area limitations in which the two free alternative newspapers were distributed. The majority of participants in this study did not have transportation challenges, and distance to the site did not become an issue. A small stipend was offered to the 7.3% of the sample who indicated that the cost of transportation to the university for interviews would be prohibitive.

The data concerning the outreach channel, an important approach to reaching ethnic minority populations in many behavioral intervention trials, were disappointing. As anticipated, when compared with the other channels, a higher percentage of eligible individuals reached via outreach were ethnic minorities. Yet only six individuals recruited through outreach enrolled, and the cost per participant enrolled via this channel was very high. While the percentage of minority enrolled participants was 13%, outreach efforts accounted for only a small percentage of these individuals.

In spite of the disappointing results, the authors believe that the minority outreach effort was worthwhile and important, especially the key informant interviews and the focus groups. We suspect that the low numbers of minority recruits was largely a result of having incorporated this focus later in the planning phase of the study. As such it was not as fully integrated into the marketing plan as it might have been. Although considerable resources were allotted to this effort, there is no substitute for the time it takes to identify the most effective channels and develop relevant messages for ensuring higher levels of minority participation. We suspect that earlier development of community partnerships and opportunities for collaboration would have led to greater effectiveness. It was also suggested by key community members that it would be important in future studies to solicit and incorporate the views of key minority community members within the overall study design process, not just solely in the marketing aspects of the research study, in order to insure that a significant number of minority community members participate in the project.

In considering the recruitment costs per enrolled individual, it is important to keep in mind the research context. Of necessity, the requirements of a randomized controlled trial impose budgetary conditions unlike those faced by service providers: a specified enrollment timetable, eligibility criteria that may greatly restrict study entry, burdens on participants that may discourage enrollment (e.g., periodic follow-up assessment interviews), and the necessity of marketing an intervention that has not previously existed.

When compared with other randomized controlled trials, the costs for recruitment in this study via paid print advertisements, radio advertisements, and the Hempfest booth were reasonable (Fisher et al., 1996; Piotrowski, Clark, & Hall, 1994). Personal referrals, a channel that involved no cost to the project, were responsible for recruiting a small number of study participants.
IMPLICATIONS OF FINDINGS

The results of the social marketing efforts for the Marijuana Check-Up have implications for future efforts not only in the formal research arena, but for practitioners in community settings as well. When conducting an efficacy trial such as the MCU, one creates optimal conditions in which to determine if the intervention being tested works well enough to warrant further study (Nathan, Stuart, & Dolan, 2000). For the MCU, optimal conditions included, but were not limited to, being able to offer incentives for participation, conducting toxicity screens, and having a budget for participant recruitment. Further study, if warranted, might mean additional formal research, or the implementation of an effectiveness study to determine the transferability of the intervention into community settings (Nathan et al., 2000). However, agencies and practitioners need not wait for an effectiveness study to potentially benefit from certain aspects of formal research.

At least two aspects of the MCU social marketing effort, targeted message development and channel selection, are potentially relevant for agencies providing services to substance users. With careful attention to message content, an agency could create print ads or radio spots that effectively inform the target audience (receivers) of services that are available for persons in the early stages of thinking about change. We know, as a result of this marketing effort, that individuals in precontemplation or contemplation in reference to their substance use will approach a source that they perceive as credible. For agencies offering evaluation and treatment services, this group of individuals may constitute a unique and relatively untouched pool of potential clients. Because treatment agencies and universities may be viewed differently, the perceived credibility of the source (the agency) would be an important consideration in developing these kinds of marketing tools.

In reference to channel selection, what may be reasonable for recruitment costs in a research environment may be less so for a community-based agency. However, in agency settings, the absence of the conditions noted above make some of these recruitment channels potentially more viable. When looking at the cost per enrolled participant, print ads, a booth at Hempfest, and radio ads were the three least expensive forms of paid advertising, $72, $96, and $189, respectively. These costs would likely be reduced in a less restrictive environment where factors such as strict eligibility criteria and the burden of participation inhibit many eligible persons from enrolling in formal studies. If these channels were employed in an agency setting, they might be more reflective of the cost per eligible caller estimates: $41 (print ads), $52 (booth at Hempfest), and $80 (radio ads).

Three overall conclusions appear evident concerning this study’s marketing effectiveness. First, the message and source were a good fit with the intended receivers, with certain channels demonstrating selective usefulness in reaching specific subpopulations. Second, to ensure the likelihood of recruiting a diverse client population, the development of an effective minority recruitment effort should be
undertaken at the onset of the planning phase of a study when decisions about intervention development and staffing are taking place. Third, the findings concerning channel effectiveness offer cost-effectiveness guidelines for future trials.

Finally, the marketing, planning and evaluation approach utilized in this paper would appear to have considerable relevance for service providers who similarly face challenges in reaching and enrolling members of their target populations. As issues emerge with reference to enhancing access to services, overcoming barriers to contacting subpopulations whose members are difficult to reach and incorporating cost-efficiency reasoning into marketing decisions, the McGuire model may offer a helpful framework.

REFERENCES


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