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Using Facebook to Maximize Follow-Up Response Rates in a Longitudinal Study of Adults Who Use Methamphetamine

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Abstract: This study examines the process and effects of using facebook (FB) to locate and re-contact study participants targeted for follow up in a longitudinal study of adult methamphetamine users (N = 649). A follow-up interview was conducted in 2009–11 approximately 8 years after previous study participation. Our paper describes re-contact efforts involving FB, including IRB regulatory issues and the effectiveness of using FB compared to mailings and phone calls. A total of 48 of the 551 surviving non-incarcerated participants who agreed to be contacted for follow up studies were contacted via FB, of whom 11 completed the follow-up interview. Those contacted through FB were more likely to be younger, female, relocated out-of-state, and reported somewhat higher rates of anxiety and cognitive problems compared to those not located on FB. Although participants contacted through FB are likely to differ demographically from those contacted by phone or mail, FB provides a potentially effective means to expand conventional methods of correspondence for contacting hard to reach participants.

Keywords: longitudinal study, substance abuse, methamphetamine, facebook, social network technology, retention

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Obtaining high follow-up response rates in longitudinal studies is essential to reduce potential non-response bias, however is especially challenging in long-term studies involving individuals who use illicit drugs. In addition to limited internal and external validity, the effects of low retention include reduced statistical power and lessened ability to explore selection bias. Davis et al¹ assert that these effects justify the importance of identifying factors that increase study retention. Various techniques have been used to locate and retain participants, including collection of detailed and appropriate baseline information, implementing standardized case tracking procedures, conducting frequent case review meetings, contacting collaterals, and offering monetary incentives for study completion.²⁻⁴

A key feature of tracking and locating activities is frequent participant contact attempts by phone and mail. For example, in follow-up studies of three months to one year, Scott⁴ reported contacting study participants up to 38 times to achieve a 90% response rate. Kleschinsky et al³ reported that to achieve a 70% response rate, participants were contacted by phone an average of 9 times; increasing the number of calls continued to yield additional completions at 10, 20, and 30 calls, though at approximately 40 telephone calls, the potential return for additional calls did not justify the added effort. Similarly, Windle and Windle estimated that after little or no contact with participants in a substance abuse study for 3 to 10 years, 9 to 14 attempts were made to contact subjects before they were located and scheduled for an initial interview, and an additional 8 to 12 contacts were made to complete the interview.⁵

As suggested by these repeated contact attempts, several factors, including changes in communications technology, may be contributing to greater difficulties in recruiting and retaining longitudinal study participants. Faden et al⁵ described how some technological advances in phone services have resulted in frequent changes in cell phone carriers and numbers, and call screening, which impeded attempts at making direct personal contact with study participants. Moreover, sustained addiction often creates chaotic lifestyles that lead to physical and social mobility, alienation from friends and family members, and residential instability that leads to greater contact difficulty,⁴ and those who were actively using were found to require greater contact efforts than abstainers.⁶

However, the development and widespread use of facebook (FB) has opened up a new opportunity for contacting individuals who may be difficult to reach by traditional methods. FB is the world's largest social network, with 800 million users worldwide as of September 2011, and according to an article in the *New York Times*, is becoming what many analysts see as the "default platform" of a new age of information organized around personal relationships.⁷ Even among a sample of homeless youth in Los Angeles, 97% used the Internet, and 79% were frequent users of social networking technologies, particularly FB and MySpace.⁸ Although social networking sites had been primarily used by adolescents and young adults, a recent report indicates 57% of users are over the age of 35.⁹

Use of social networking sites may be particularly helpful in finding young adults, as some research suggests younger populations are more difficult to recruit and retain in longitudinal in substance abuse research studies,¹⁰ and they use sites such as FB extensively. Moreover, the primary reason for lower study response rates among young adults appears to be more related to an inability to contact them, rather than their refusal to participate.¹¹ However, results are equivocal regarding demographics of study participants who are more difficult to locate; Davis et al¹ conducted a literature review of retention strategies for a wide range of study populations, including people with mental illness, asthma, HIV and substance use disorders, and reported those who were older, nonwhite male with limited education, multiple health problems, increased life stress, and a pattern of erratic health care utilization were more likely to drop out of a study. Other research indicates both younger and elderly participants had the highest attrition rates in longitudinal studies, and those around age 50 had the lowest.¹²

FB has been increasingly used in research to recruit and locate study participants in new and ongoing research. For example, in a longitudinal study of child abuse and neglect, Nwadiuko et al¹³ searched FB and MySpace sites for the profiles of 151 study participants who were age 20–21 and not located by traditional means. The authors found profiles of 35 users, 7 of whom responded to communication and agreed to continue their study participation. FB may be of particular relevance in substance abuse research, as youth



who spent any time on social networking sites were found to be more likely to engage in marijuana and other substance use compared to those who did not use social networking sites.¹⁴ Likewise, Lord et al¹⁵ conducted a study of misuse of opioid medication, recruiting young adults from FB, and concluded that online social networks serve as powerful vehicles to connect with college-aged populations about their drug use.

Another study searched social networking sites to conduct a follow up evaluation of a cancer research training program, and found the use of FB resulted in a moderate response rate from former students who participated in the program from 1999 to 2008.¹⁴ The authors reported a limitation of using FB was that it was extremely time-consuming, since dozens of results may be found for each search, and sending numerous personalized messages with information such as names and year(s) of training participation is cumbersome, however, personalization demonstrated increased responses.

The challenge of locating and re-contacting participants in a longitudinal study of adults who use methamphetamine prompted the use of FB as an additional means of locating those with outdated contact information. Methods of communication have changed rapidly in recent years, however, there is little information about the extent of use and effectiveness of newer communication resources such as FB in meeting study recruitment and retention goals. The purpose of this study is to examine the process and effects of using FB to locate and re-contact study participants who were targeted for follow-up assessment approximately eight years after their previous contact with study staff. This paper first describes our locating procedures using FB, including Institutional Review Board (IRB) regulatory issues specific to privacy and confidentiality, the study FB page, and contact procedures. Overall descriptive results of FB contact attempts, responses, and average number of mailing and telephone contacts made to study participants on FB are then presented. To better understand how FB users may differ from those not found on FB, demographic, substance use and mental health characteristics among participants who were and were not found on FB are examined.

Methods

The overall aim of this longitudinal research was to provide a dynamic picture of substance user behaviors,

health, mortality, treatment needs, and social costs for individuals with long histories of methamphetamine use, as these individuals age and experience lengthening methamphetamine use trajectories. To accomplish this aim, Natural History Interviews were conducted in 1999–2004, providing detailed histories on substance use, treatment, and criminal careers. New data were collected in 2009–11 to provide additional detail, producing life course trajectories averaging at least 28 years in duration. The current analyses describe the process and results of using FB as a component of tracking and locating activities for the 2009–11 interview.

Sample

Data are from two cohorts of adult methamphetamine users: (1) a cohort who received treatment for methamphetamine abuse in Los Angeles County treatment programs ($n = 351$); and (2) a cohort of methamphetamine users from the same communities who had not participated in formal substance abuse treatment ($n = 298$). The treated sample comprised 351 methamphetamine users recruited from a stratified (gender, ethnicity, modality) sample of admission records for treatment for primary methamphetamine use in Los Angeles County in 1995–1997. Detailed description of the sample and study procedures can be found in Brecht et al.¹⁵ These 351 individuals were interviewed in 1999–2001.

In 2001–04, follow-up interviews with 79% of the treated sample ($n = 278$), and baseline interviews with the not-treated sample ($n = 298$) were conducted. The not-treated sample was recruited using community approaches including an acquaintance sampling approach, key informants, and extensive outreach in a range of community venues to achieve socio-demographic and methamphetamine use behavior diversity. All participants ($N = 649$) had used methamphetamine at least 12 times and were English or Spanish speaking.

Data from the eight-year follow up interview are from the first 336 respondents in an on-going long-term study. Of the participants in the baseline interview ($N = 649$), 44 declined follow up participation, 37 are deceased, and 17 are incarcerated; thus, 551 potential participants were targeted for tracking and locating attempts. Of these 551 participants, 61% ($N = 336$) completed the follow up interview, and 215 have



not yet been located, confirmed to be deceased or incarcerated, or declined study participation.

The baseline sample ($N = 649$) was 64% male, 41% White, 27% Mexican American, 7% other Latino, 16% African American, and 6% multi-ethnic; the mean age was 34.2 years ($SD = 8.8$). The mean age of first methamphetamine use was 20.1 ($SD = 6.8$). About one-fifth (21%) reported residing in the same zip code at the baseline and eight-year follow up interviews.

Study procedures

The Institutional Review Board at the University of California, Los Angeles separately approved each interview study, and participants provided written informed consent prior to each interview. Beginning in 1999–2004, in-depth, face-to-face baseline interviews were conducted with the full sample, and a follow up interview with the treated sample was conducted, to assess a comprehensive array of variables including socio demographic and substance use characteristics, health status and criminal involvement. Detailed locator information was collected and respondents were asked to initial the consent form indicating whether they agreed to be contacted for a future interview. Eight-year follow up interviews were conducted in 2009–11 targeting all surviving participants from the earlier interviews who agreed to future contact. Respondents were paid \$40 for interview participation.

Measures

To better understand whether study participants who were found on FB ($n = 48$) differed from those for whom FB was searched but respondents were not found ($n = 178$), or respondents who were located via methods used prior to FB searches (ie, not searched for on FB; $n = 423$), we examined the following self-reported measures of sociodemographic, substance use, criminal, and mental health characteristics. FB contact by treatment status, comparing the treated to the not-treated sample, was also examined.

Sociodemographic characteristics

Variables examined from the baseline interview included age, race/ethnicity, gender, education, marital status, legal income and importance of religion. Respondents were asked to report the amount of legal

income from all sources in the past year, including employment, public assistance, support from family/friends, savings, and any other legal sources. To assess importance of religion, respondents were asked, “how important is religion/spirituality in your life,” with response options ranging from 0 = not at all to 3 = very important. Variables examined from the eight-year follow up interview included employment and residence location: respondents were asked whether they were employed in the past 30 days, and they provided the zip code of their current primary residence, which was grouped into four geographic locations: (1) Los Angeles and surrounding area; (2) Southern California desert communities; (3) Northern California; and (4) out of California.

Substance use and criminal involvement

Respondents were asked at the baseline interview whether they had used several types of illegal drugs including marijuana and methamphetamine, and if so, their age at first use and their age when they started using the drug regularly. The number of lifetime arrests and whether respondents were ever incarcerated for more than 30 days were also examined.

Data on recent substance use came from the eight-year follow up interview. Respondents were asked to report whether they had used marijuana, methamphetamine, crack cocaine, and powdered cocaine, and alcohol to intoxication (5 or more drinks per sitting), and if so how long ago they last used each substance. Those who used the substance in the past year were compared to those who reported no use of that substance in the past year. Respondents were then asked to report the number of days in the past month they used each substance, with responses ranging from 0–30. Respondents were also asked whether they engaged in any injection drug use in the past eight years (since the previous interview), with responses coded as no = 0 and yes = 1.

Mental health problems

At the eight-year follow up interview, respondents were asked whether they had experienced specific mental health problems that were not a direct result of drug or alcohol use in the past eight years and in the past 30 days. Problems included serious depression that lasted two or more weeks; serious anxiety that lasted two or more weeks; visual or auditory



hallucinations; trouble concentrating, understanding or remembering (ie, cognitive problems) that lasted two or more weeks; and trouble controlling violent behavior.

Analysis

Descriptive statistics (frequencies, means) of FB, telephone and mailing contact attempts were conducted. Chi square tests, t-tests and one-way analysis of variance tests were conducted to examine demographics, substance use history and criminal involvement for all follow up study members (N = 649), comparing those found on FB to those not found on FB. In addition, current demographic status, recent substance use and mental health problems were examined for participants who completed the 2009–11 interview (n = 336), comparing participants found and those not found on FB; for two-level variables, the Fisher’s

Exact test is reported. Data were analyzed using SPSS for Windows, Version 19.0.

Results

Description of locating procedures using FB

FB was used within a framework of conventional tracking and locating activities, including individualized mailings of recruitment letters and postcards, attempts to contact respondents and collaterals by phone and email, and public records searches including death records from the Centers for Disease Control (CDC), and records from the Department of Motor Vehicles (DMV). In addition, project staff have attempted to locate study participants through home visits or “door knocks” when other contact attempts have not been successful (see Fig. 1). Prior to attempting door knocks, other locating attempts,

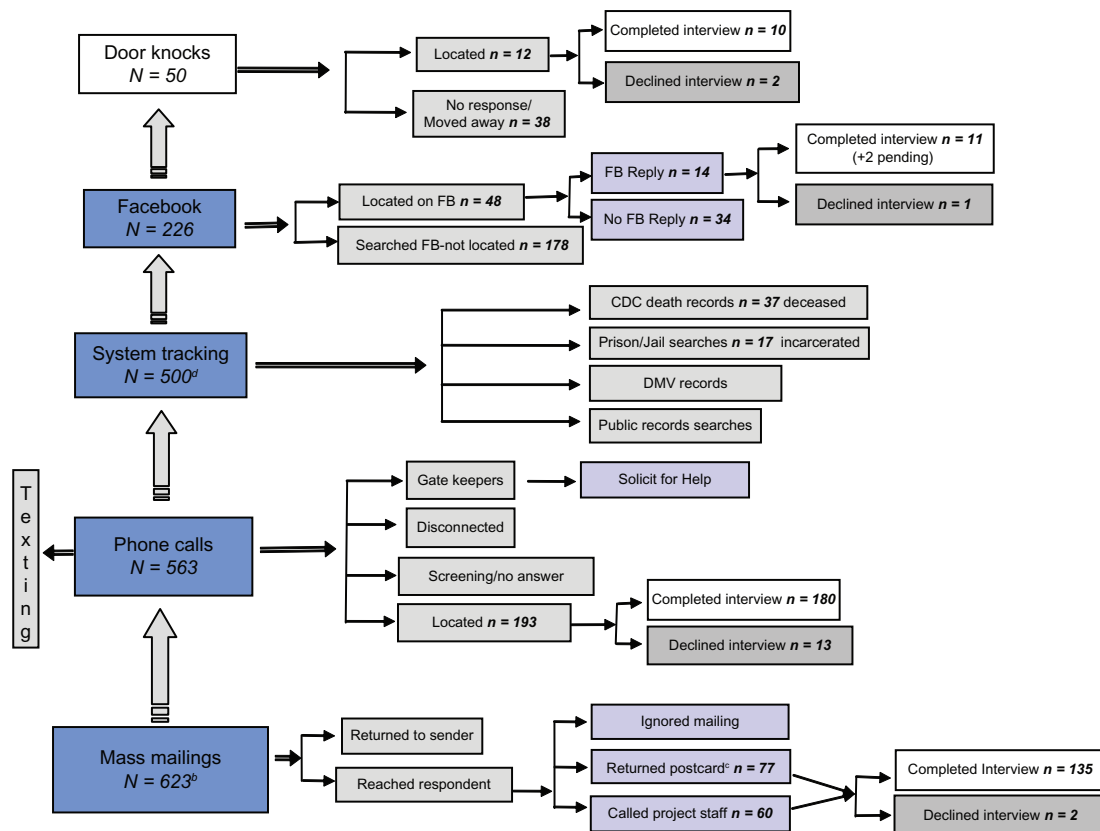


Figure 1. Model of tracking procedures, with numbers of study participants contacted by various methods, and participants who completed and declined study follow-up.^a

Notes: ^aFor some outcomes/categories, the number of participants was not calculated or could not be determined (eg, the number who ignored the mass mailing). Although some participants provided email addresses during their previous contact with study staff, none could be reached by email at the 8-year follow up interview; ^bThe baseline sample was N = 649, however, 26 participants indicated in a previous interview that they did not want to participate in a future study; ^cA postcard was enclosed with the recruitment letter asking participants to check a box indicating whether they were interested in participating in the follow-up study; ^dThe number of participants who were searched via system tracking is an estimate; as of March 2011, project staff were attempting to locate 215 participants out of 649 who were not located/interviewed [336], confirmed to be deceased [37], incarcerated [17], or who declined to be interviewed [44].



including FB searches were conducted in an effort to locate participants with outdated contact information. FB was searched after conventional phone and mail tracking procedures proved unsuccessful, but prior to door knocks. Before contacting participants on FB, IRB regulatory issues were addressed, and FB contact procedures were established.

Regulatory issues

Ethical principles ensuring privacy and confidentiality of study participants' personal information may be affected by the use of FB. For example, in October 2010, a breach in FB security allowed access to users' names and friends to outside websites. A Wall Street Journal investigation found many of the most popular applications on FB were transmitting identifying information, thus providing access to people's names and their friends' names to dozens of advertising and Internet tracking companies.¹⁶ In addition, lack of experience in using FB may lead to inadvertent disclosure of study participation. To protect study participants' privacy, and ensure that our study FB page does not appear on participants' profiles for other people to see, procedures described in Table 1 were followed. In addition, it is important to stay vigilant regarding changes made to the FB website. For example, recently in response to FB user criticisms, privacy settings were overhauled to make sharing information with friends more customizable. After such changes are made, it is useful to check the study FB page and ensure privacy settings continue to be correctly set to the strictest setting.

Participants located on FB

A total of 48 of the 551 surviving non-incarcerated participants who agreed to be contacted for follow up studies were contacted via FB (9%). On average, we made six attempts to contact these 48 participants by phone, and sent them ten mailings. Of those who completed the 2009–11 interview ($n = 336$), 11 were found on FB and responded to a message sent from the study FB page indicating their agreement to participate in the study. In addition, two participants responded to the FB message, indicating their agreement to participate, but had not found time to complete the interview.

Background characteristics of participants found on FB compared to those not searched or found on FB are shown in Table 2. Participants found on FB were about four years younger on average, and younger when they first started using methamphetamine compared to those not found on FB. FB users were also more likely to be women, with somewhat higher incomes, and did not rate the importance of religion as highly as participants not found on FB. Those found on FB had somewhat higher education ($P = 0.08$), and although both groups had comparable mean numbers of arrests, fewer FB users (33%) reported being incarcerated for more than 30 days than those not found on FB (54%–55%). Differences in race/ethnicity and drug treatment status appear to be larger for participants who were not searched for on FB (ie, were located via phone/mailings) relative to those not located (on FB or otherwise).

Table 1. Description of the study facebook (FB) page and contact procedures.

The study FB page:

To ensure the confidentiality of study participants the strictest FB privacy settings were employed:

- All privacy settings were set to “friends only.”
- No “friends” were added to the study page and no one could request to be added.
- Only basic study contact information was made visible to others.
- FB users could only send personal messages to the study page.
- No posts or uploads were made on to the study page profile.

FB contact procedures:

- Profile search results were cross-referenced with previous locator information in order to confirm participant's identity.
- In situations where little information was visible, “friends” were cross-referenced with names provided by the participant on a locator from previous study.
- When identity could not be confirmed due to insufficient information or commonality of name, no message was sent.
- An IRB approved re-contact message was sent to participants whose identity could be confirmed.
- After 3 unsuccessful attempts at contacting a participant via FB, study staff discontinued FB contact attempts.
- Several respondents indicated their preferred method of communication was on FB, and they did not wish to be contacted by phone or mail; these individuals were only contacted via FB.

**Table 2.** Background characteristics reported at baseline interview by whether participant was searched for, and found on facebook (FB; Baseline sample N = 649).

	Not searched for on FB ^a (n = 423)	Searched FB, not found (n = 178)	Searched and found on FB (n = 48)	Statistical test
Demographic characteristics				
Age, mean (SD)	33.3 (8.6)	32.4 (9.0)	29.5 (7.1)	$f(2,646) = 7.6, P = 0.001$
Race/ethnicity, %				$X^2(8) = 46.2, P = 0.000$
African American	17.4%	9.4%	8.7%	
Mexican American	23.7%	44.3%	28.3%	
Other hispanic	6.8%	13.2%	2.2%	
White	43.3%	30.8%	54.3%	
Multiracial	6.5%	1.7%	6.5%	
Female, %	38.3%	20.8%	50.0%	$X^2(2) = 17.7, P = 0.000$
Education, mean (SD)*	1.6 (1.4)	1.3 (1.5)	1.9 (1.6)	$f(2,646) = 2.5, P = 0.081$
Marital status, %				$X^2(8) = 7.8, P = 0.457$
Married	13.3%	12.6%	15.2%	
Widowed	2.7%	0.8%	0.0%	
Separated	8.9%	8.4%	0.0%	
Divorced	19.7%	14.3%	15.2%	
Never married	55.4%	63.9%	69.7%	
Legal income, past year, mean (SD)	\$13,020 (16,959)	\$11,540 (12,305)	\$17,603 (19,270)	$f(2,642) = 2.8, P = 0.061$
Importance of religion, mean (SD)**	2.2 (1.0)	1.9 (1.0)	1.7 (1.1)	$f(2,643) = 6.2, P = 0.002$
Drug use and criminal background				
Age 1st marijuana use, mean (SD)	13.7 (4.1)	14.9 (5.3)	13.0 (3.5)	$f(2,636) = 5.0, P = 0.007$
Age 1st methamphetamine use, mean (SD)	19.6 (6.2)	22.2 (8.0)	18.1 (5.9)	$f(2,646) = 10.5, P = 0.000$
Age 1st regular methamphetamine use, mean (SD)	21.6 (6.7)	23.7 (8.4)	20.0 (7.5)	$f(2,626) = 7.7, P = 0.001$
Received drug treatment, %	63.4%	24.9%	47.9%	$X^2(2) = 62.3, P = 0.000$
Number of arrests, mean (SD)	10.4 (15.9)	9.7 (15.7)	10.8 (24.3)	$f(2,626) = 0.2, P = 0.821$
Incarcerated >30 days, %	53.5%	55.0%	33.3%	$X^2(2) = 11.2, P = 0.004$

Notes: ^aThese participants were found via other methods (mailings, death records), thus, FB was not searched. * <HS = 0 and Post-graduate = 6; **0 = not important at all; 3 = very important.

FB users who completed the 8-year follow up interview

More FB respondents moved out of California (40%) compared to respondents not found on FB (10%; $P < 0.05$; Table 3). A somewhat higher percentage (80%) of FB responders used marijuana in the past year versus 50% of respondents not found of FB ($P = 0.06$); similarly, somewhat more FB respondents reported using cocaine ($P = 0.09$). Although not statistically significant, FB responders reported more days of use of all substances in the past month except crack cocaine, and 40% reported injection drug use since the last interview versus 24% of non-FB responders. Regarding mental health problems, FB responders reported a higher rate of serious anxiety since the last interview compared to non-FB respondents, and were

somewhat more likely to report cognitive problems in the past 30 days (40%) compared to non-FB responders (16%; $P = 0.07$). Both groups reported similar rates of other mental health problems including violent behavior and hallucinations.

Discussion

Longitudinal studies have been essential to better understand the life-course of substance abuse problems, including onset, escalation, deceleration, and possible cessation and recovery. However, with changing demographics and hard-to-reach, highly mobile potential study participants, future studies may need to adapt tracking procedures to ensure the continued success of this vital research.⁵ Although contacts via FB only yielded an additional 3% to the study response



Table 3. Demographic, mental health and substance use characteristics reported at 2009–11 follow-up interview by whether participant was contacted on facebook (FB; N = 336 recently interviewed).

	No FB contact (n = 325)	Contacted on FB (n = 11)	Statistical test
Demographic characteristics			
Employed in past 30 days	41.4%	30.0%	$X^2(1) = 0.5, P = 0.353$
Geographic location			$X^2(3) = 9.1, P = 0.028$
Los Angeles/surrounding area	69.0%	40.0%	
Southern California desert communities	16.9%	20.0%	
Northern California	3.7%	0.0%	
Relocated out-of-state	10.4%	40.0%	
Substance use in past 12 months, %			
Alcohol to intoxication	49.1%	70.0%	$X^2(1) = 1.7, P = 0.163$
Marijuana	50.0%	80.0%	$X^2(1) = 3.5, P = 0.058$
Methamphetamine	39.3%	30.0%	$X^2(1) = 0.4, P = 0.554$
Crack	12.3%	10.0%	$X^2(1) = 0.0, P = 0.829$
Cocaine	10.4%	30.0%	$X^2(1) = 3.8, P = 0.086$
Injection drug use in past 8 years	23.9%	40.0%	$X^2(1) = 1.4, P = 0.208$
Mean (SD) days of substance use in past 30 days			
Alcohol to intoxication	1.5 (5.4)	2.3 (3.3)	$t(334) = -0.7, P = 0.739$
Marijuana	4.8 (9.0)	6.8 (8.4)	$t(334) = -0.5, P = 0.501$
Methamphetamine	2.9 (6.8)	3.4 (8.6)	$t(334) = -0.2, P = 0.827$
Crack	0.7 (3.4)	0.0 (0.0)	$t(334) = 0.6, P = 0.530$
Cocaine	0.1 (1.7)	0.3 (0.7)	$t(334) = -0.3, P = 0.763$
Mental health problems in past 8 years			
Depression	43.9%	50.0%	$X^2(1) = 0.1, P = 0.471$
Anxiety	29.4%	60.0%	$X^2(1) = 4.3, P = 0.047$
Hallucination	11.3%	10.0%	$X^2(1) = 0.0, P = 0.685$
Cognitive problems	24.8%	40.0%	$X^2(1) = 1.2, P = 0.229$
Trouble controlling violent behavior	18.1%	10.0%	$X^2(1) = 0.4, P = 0.441$
Mental health problems in past 30 days			
Depression	13.2%	10.0%	$X^2(1) = 0.1, P = 0.615$
Anxiety	14.1%	20.0%	$X^2(1) = 0.3, P = 0.431$
Hallucinations	4.9%	10.0%	$X^2(1) = 0.5, P = 0.409$
Cognitive problems	16.3%	40.0%	$X^2(1) = 3.9, P = 0.071$
Trouble controlling violent behavior	7.7%	0.0%	$X^2(1) = 0.8, P = 0.457$

rate, it provided a potential opportunity to contact a fairly significant proportion of the study sample (9%) whom project staff were not able to reach via conventional tracking and locating procedures. Overall, this study sample has reported long histories of methamphetamine use and criminal involvement, and has not had contact with study staff in approximately eight years. Presently, the most difficult of a hard-to-reach sample has not yet been located, thus, obtaining an additional 3% of the most difficult to reach individuals was determined to be worth staff time and resources, given participants could not be located by other means. Moreover, had we attempted to contact participants on FB prior to, or in conjunction with mailing and phone

tracking procedures rather than after these procedures proved unsuccessful, higher FB contact and response rates may have been attained.

Within a framework of conventional methods of tracking and locating hard to reach participants, FB provided a cost-efficient and moderately effective method of contacting those who may not have otherwise been contacted. Although limitations similar to those reported in Daniel et al¹⁴ were also observed in this study (eg, numerous FB results found for those with common names), collection of detailed information at the previous interview helped to minimize this limitation. For example, FB friends, birthday, and other information on FB were cross-referenced with previous locator



contacts and information to confirm the participant's identity. In future studies, when collecting or updating locator information, it may be helpful to ask whether study staff may contact the participant on FB, and if so, the FB web address should be added to the locator form. Unlike emails, phone numbers and postal addresses, FB web addresses are generally not changed, thus may be particularly useful for studies involving long periods between participant contact.

Recruiting and retaining appropriate and sufficient numbers of research participants in longitudinal studies while ensuring human subjects' protections is critical to scientific integrity and generalizability of study findings. Use of FB creates additional IRB human subjects protection and privacy requirements which can be potentially time-consuming and complicated to address. Evans et al¹⁷ describe how the growing use of computer-based search engines, databases, and communication methods may lead to an increase in accidental disclosure of sensitive information, greater numbers of people impacted, and more severe consequences (eg, identity theft, computer crime). However, as our findings indicate, with knowledge of potential FB privacy issues, and specific procedures to set up the study FB page and contact participants, privacy and confidentiality can be maintained.

Although somewhat time-intensive, incorporating FB into tracking activities will likely yield favorable results if current trends continue, indicating increasing numbers of individuals from diverse sociodemographic backgrounds are using social networking sites. Anecdotal evidence suggests some respondents utilize FB as their preferred method of communication, and rarely respond to phone or postal contact. While older research indicates phone contact was more successful than postal mailings,¹⁸ changes in communications technology highlight the continuing importance of taking into account study participants' personal preferences and perspectives. For example, interviewers' personal observations indicate that some participants rarely answer their phones verbally, but respond to text messages fairly quickly. Using a different method of communication on subsequent attempts to establish contact, and employing various types of communication at different time-points may yield new success in achieving participant response.^{17,19}

The importance of using all available tracking and locating resources is exemplified by what Watson and

Wooden¹² describe as the mounting evidence indicating sample attrition is getting worse over time. For example, attrition rates for the 1997 cohort of the National Longitudinal Survey of Youth were noticeably higher than rates for the 1979 cohort, and a similar deterioration of response rates over time was reported for the Survey of Income and Program Participation, run by the US Census Bureau.¹² Creative team work and persistence have been identified as among the most important resources for tracking out-of-treatment drug-users in longitudinal studies,²⁰ and given the growing challenges of locating study participants, these resources continue to be essential in navigating new and changing information technologies.

Participants located on FB appear to differ on some demographic, mental health and substance use characteristics compared to those located by conventional methods. Younger study participants who moved out-of-state were more likely to be found on FB, suggesting FB may be useful in finding these highly mobile individuals. Those who used marijuana and cocaine at a higher rate, and reported experiencing serious anxiety and cognitive problems may also be more likely to be found on FB than those without such problems. Similarly, other research suggests study participants with mental illness, increased life stress and those with greater substance use severity were found to be more likely to drop out of research studies or present greater contact difficulties.^{1,4,6} Accordingly, using FB for locating purposes may be useful in decreasing selective attrition for some of these sub-samples who may be more difficult to retain in research studies.

Results of this study should be interpreted within several constraints. Data are self-reported and retrospective, thus may be affected by respondents' ability to remember and accurately report information. The sample size for respondents found on FB who completed the 2009–11 was limited, therefore, future work with larger sample sizes should further assess the utility of FB and other creative strategies in locating and retaining study participants in longitudinal research over diverse geographic regions and across time. Despite study limitations, our findings indicate that given a comprehensive set of tracking procedures and considerable commitment and persistence from the entire project staff, it is possible to retain research participants with long histories of methamphetamine use in a research study eight years after their previous



interview. The addition of FB to existing procedures can potentially increase responses from participants who may not have otherwise been located.

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Disclosures

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