Using Mobile Phone Technology to Provide Recovery Support for Women Offenders

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Abstract

Background: Mobile technology holds promise as a recovery tool for people with substance use disorders. However, some populations who may benefit the most may not have access to or experience with mobile phones. Incarcerated women represent a group at high risk for recidivism and relapse to substance abuse. Cost-effective mechanisms must be in place to support their recovery upon release. This study explores using mobile technology as a recovery management tool for women offenders residing in the community following release from jail. **Subjects and Methods:** This study surveyed 325 minority women offenders with substance use disorders to determine whether or not they use cell phones, their comfort with texting and search features, and the social networks that they access from mobile phones. **Results:** We found that 83% of survey subjects had cell phones; 30% of those were smartphones. Seventy-seven percent of the women reported access to supportive friends, and 88% had close family members they contacted regularly using mobile technology. Results indicated that most of the women were comfortable using a mobile phone, although the majority of them had prepaid minutes rather than plans, and most did currently use smartphones or have the capability to download applications or access social networks via their phones. Most women reported that they would be comfortable using a mobile phone to text, e-mail, and answer surveys. **Conclusions:** The high rate of adoption of mobile technology by women offenders makes them a promising target for recovery support delivered via mobile phone.

Key words: e-health, telehealth, technology

Introduction

The majority of women jailed in the United States are incarcerated for brief periods before re-entering the community. This group is at high risk for recidivism and relapse to substance abuse. Cost-effective mechanisms must be in

place to support their recovery upon release. This study explores the use of mobile technology by this population as a preliminary step in understanding the feasibility of delivering recovery support services via a smartphone.

From 2000 to 2010, the number of women in local jails increased by 30%, and half of all women are incarcerated in local jails rather than prisons.¹ Women coming from jails represent the majority of women offenders re-entering the community. Seventy percent of women entering jail in 2002 reported using alcohol or other drugs weekly in the month before arrest.² Addicted women offenders often suffer from other conditions that contribute to high relapse and recidivism rates.^{2,3} They are more likely than other women offenders and women living in the community to be poor, homeless, single parents, have no high school degree or GED, have child custodial issues, engage in human immunodeficiency virus (HIV)-related risk behaviors, have histories of victimization and corresponding trauma, experience higher rates of serious mental illness, and have family histories of substance use disorders.²⁻¹⁹ These women constitute a high-risk group vulnerable to relapse to substance use, HIV, and reincarceration. Substance abuse treatment research supports the concept of addiction as a chronic condition, characterized by periods of relapse and remission. Policymakers and addiction professionals agree on the need to develop strategies for effective long-term recovery support. This is particularly germane for women offenders who suffer from an array of co-occurring and often chronic conditions. Just as with other chronic conditions such as hypertension, diabetes, and congestive heart failure, recovery from substance use can be managed. Given that the majority of persons leaving treatment often resume alcohol and drug use in the first year following treatment, most within the first 30–90 days, innovative and cost-effective treatment and recovery protocols that help manage addiction are imperative. The Solutions Research Group predicts that the use of mobile technology will have tripled between 2011 and 2013.²⁰ In healthcare, mobile technologies have already been used to deliver reminders or provide education about different treatment options. Ecological momentary assessments administered via personal digital assistants and mobile phones have been used in addiction treatment to help identify some of the internal (e.g., mood, craving, or withdrawal state) and external (presence of the substances, substance-related cues including persons, place, and things) factors that may precede substance use.²¹ Ecological momentary assessments are designed to collect information occurring at an exact moment in real time.

Other methods designed to support recovery such as recovery management checkups,²²⁻²⁷ Internet programs,²⁸ telephone support,²⁹⁻³¹ and text messaging³² have produced positive results.

However, despite these promising results, existing systems cannot afford to offer continuous formal and informal recovery support systems for women as they re-enter the community.

A smartphone application that delivers recovery support might provide a user-friendly tool that requires little or no staff time over an extended period. With their anytime, anywhere availability, smartphones offer possibilities as behavior management tools for people with many chronic conditions, including addiction.³³ Addiction treatment often consists of helping people identify relapse triggers and the coping skills to respond to them. Individuals early in recovery may struggle to recall and use newly learned skills under stress. A smartphone could help women monitor their surroundings and feelings in real time for risky/supportive people, places, and activities. Smartphones can also help people in recovery connect with others, locate meetings, attend online meetings, listen to stories or relaxation tapes, or do exercises.

Based on a representative survey of 2,277 adults conducted by the Pew Research Center,³⁴ in early 2012, 83% of adults in America own a mobile phone, with 100% using it for voice calls, 73% for texting, 54% for taking/sending pictures, and 44% for accessing the Internet. During the month prior to the interview, 51% reported using their mobile phone to get information, 42% used it for entertainment, 40% used it to help with an emergency, and 27% had trouble doing something because they lacked access to their mobile phone. Although the number of smartphone users grew from 35% in May 2011 to 46% in February 2012, the rates are lower for those who make less than \$30,000 per year (34%) and have less than a high school education (25%).

If women offenders are to use smartphones as recovery management tools, the first question to address is: how much do they currently use mobile phones or smartphones? Although racial minorities appear to have a slight lead in terms of smartphone ownership,³⁴ no data exist on the specific population of low-income addicted women offenders. This study aimed to determine the extent to which addicted women offenders living in the community use mobile phones or smartphones.

Subjects and Methods

RECRUITMENT

Women were recruited for this study from a larger clinical trial that examined the effects of quarterly recovery management checkups provided after release from jail.²³ As part of the parent trial, research staff recruited the women while they were in jail and interviewed them upon release from jail 30, 60, and 90 days after, and then quarterly thereafter, for 3 years. Between October 2011 and February 2012, women who completed an interview for the parent trial and were not currently incarcerated were invited to participate in the current study. Of the 358 unique women who were interviewed outside of a correctional setting during this time period, 325 (91%) completed the supplemental survey. All women completed the survey between 21 to 36 months post-release from jail, with 275 done face-to-face in the office, 36 face-to-face offsite, and 58 by phone.

PARTICIPANT CHARACTERISTICS

At intake, women were 85% African American, 6% white, 4% Hispanic, and 4% self-described as "other." At the time they completed the survey, 1% were between 18 and 20 years of age, 19% were 21–29 years old, 22% were 30–39 years old, 38% were 40–49 years old, and 20% were 50 years of age or older. The majority of women had never been married (72%), and 62% had children under the age of 21 (16% had one child, 17% had two children, and 29% had three or more children). Approximately 69% reported a lifetime history of being victimized, and 34% reported a lifetime history of being homeless. At intake, 21% of the women reported initiating substance use prior to 15 years of age, 79% reported lifetime substance dependence (44% for opioids, 41% cocaine, 15% for alcohol, and 10% for cannabis), and 97% of the women reported prior substance abuse treatment (35% one time, 62% two or more times).

During the 90 days prior to responding to the survey, 50% reported weekly alcohol or drug use (including 39% reporting daily use), 21% had been in treatment, and 10% had been in a controlled environment. Women also reported engaging in HIV risk behaviors, including unprotected sex (60%), multiple sex partners (5%), trading sex for alcohol, drugs, or money (26%), and needle use (1%). During the prior 90 days, 22.5% were employed, 91% made less than \$20,000 per year, 11% had been homeless, and 26.5% had been involved in the justice systems.

The survey population had a higher percentage of black women and lower percentage of white and Hispanic women, lower employment rate, and higher substance dependence rates than the female offender population as a whole.³⁵

PROCEDURES

When women arrived for their follow-up interviews in the parent study, research staff explained that the research team was considering developing a mobile phone application that would provide recovery management services and that the purpose of the survey was to learn more about telephone use by women offenders living in the community. They were told that the survey would take approximately 5 min to complete and asked questions about their mobile phone service plans, usage patterns (e.g., phone calls, texting, Internet), and their phone accessibility to close friends and family members.

INSTRUMENTS

For this study, the research team asked questions to learn if women offenders residing in the community following release from jail would accept recovery management services delivered via mobile technology. Questions similar to those used in the Mobile Access 2010 study³⁶ were used to assess aspects of mobile phone access and utilization patterns. Although mobile phone ownership has increased in recent years, it was unknown whether this was true of the current sample particularly given the mean age, recent incarceration, and history of substance use. The first set of questions focused on mobile phone ownership, phone type, and service plan characteristics.

Another set of questions focused on access to and use of applications such as sending/receiving texts, sending/receiving e-mails, and using social networking sites. To learn more about their current level of connectedness via mobile phones, women were asked about the number of close family and friends that have phones, how often they talk with or text them, and whether some of these individuals support their recovery. The women's comfort levels with the phone's functions may also influence their acceptance of recovery tools delivered via mobile phone. Women were asked to rate their comfort making calls, texting, e-mailing, and even responding to brief surveys on their phones. Research staff administered the 5-min survey.

Results

MOBILE PHONE OWNERSHIP, PHONE TYPE, AND SERVICE PLANS

Of the 325 respondents, 83% reported having a mobile phone. Of the 268 with mobile phones, 70% used prepaid mobile phones, and 30% had a mobile phone contract (some had both). Forty-six percent had phones that offered some downloading capabilities, 39% had touch screens, and 30% were smartphones with texting, access to social networking sites, e-mail, and Web browsing.

VOICE AND NON-VOICE CAPABILITY AND UTILIZATION

Of the 259 women who owned phones and knew their monthly phone usage, 29% reported 1,001 or more min, 27% reported 401–1,000 min, 23% reported 201–400 min, and 18% reported 1–200 min.

Of the 264 who had texting capability and knew their monthly texting frequency, 27% reported texting more than 100 times per month, 32% reported 11–100 times, 13% reported 1–10 times, and 28% reported less than 1 time per month. Of all respondents, 36% reported using a social networking site, with Facebook (96%) being the most common network. Of the 116 social network users, 53% reported using it on more than 20 days per month, 39% reported 1–20 days per month, and 9% reported less than 1 day per month.

MOBILE PHONE UTILIZATION WITH FRIENDS

Of all respondents, 19% of the women reported having no close friends, 49% reported having one to three close friends, and 32% reported more than three close friends. Similarly, 22% of the women reported having no friends with mobile phones, 48% of the women had one to three close friends with mobile phones, and 31% reported having more than three close friends with mobile phones. On calling on at least a monthly basis, 23% of the women reported speaking to no friends regularly, 46% reported speaking with one to three close friends, and 30% reported talking with four or more close friends. On texting at least a monthly basis, 49% of the women stated that they have no close friends with whom they texted regularly, 29% texted one to three friends monthly, and 23% texted more than three friends regularly. In terms of connecting via social networking sites monthly or more often, 70% of the women reported having no friends with whom they connected via social networking regularly, 16% reported regularly connecting with one to three friends, and 14% connected with more than three. E-mail was least used by the group on a

monthly basis, with 84% of the women reporting that they have no close friends with whom they e-mail monthly, 6% reporting monthly e-mails with one to three friends, and 10% reporting e-mail contact with more than three close friends.

MOBILE PHONE UTILIZATION WITH FAMILY

Of all respondents, 6% of the women reported having no close family members, 30% reported having one to three close family members and 65% reported more than three close family members. Similarly, 7% of the women reported having no family members with mobile phones, 35% of the women had one to three close family members with mobile phones, and 58% reported having more than three close family members with mobile phones. On a weekly basis, 12% did not talk to any family weekly, 42% spoke with one to three close family members weekly, and 46% reported talking with more than three close family members. In terms of texting weekly, 52% of the women stated that they have no close family members with whom they texted weekly, 25% texted one to three family members weekly, and 23% texted more than three family members weekly. As with close friends, e-mail was least used by the group, with 89% of the women reporting that they have no close family members with whom they e-mail weekly, 6% reporting weekly e-mails with one to three, and 4% reported weekly e-mails with more than three close family members.

POTENTIAL RECOVERY SUPPORT

Of the 267 women with close friends and/or family, 9% indicated that none of their friends or family would support their recovery, whereas 30% indicated that 1–10 people would support their recovery, and 64% reported more than 10. Of the 114 with friends and family regularly using social networking, 15% reported no friends and family on social networking who would support their recovery, 17% indicated that 1–10 people would support their recovery, and 68% reported more than 10. Of the 126 with e-mail, 37% had no friends that would support their recovery.

COMFORT LEVEL WITH SMARTPHONES

As shown in *Table 1*, the majority of women indicated that they would be comfortable using a mobile phone to call (83%), text (75%), access social networking sites (57%), e-mail (58%), and respond to a short survey (74%). Another 8–19% expressed an interest in learning to use the various functions on the phone, whereas 3–10% did not know how comfortable they would be. The last column of *Table 1* shows the percentage of women who would *not* use a mobile phone to call (4%), text (7%), access social networking sites (14%), e-mail (12%), or respond to a short survey (7%).

Discussion

Results indicated that most of the women have and are comfortable using a mobile phone, although the majority does not currently use smartphones or have the capability to download applications or access social networks via their phones. Most women felt they would be comfortable using a mobile phone to text, e-mail, and answer

Table 1. Comfort Level with Using a Smartphone (n = 291)

COMFORT WITH	COMFORTABLE	WOULD LEARN	DON'T KNOW	WOULD NOT USE
Using as a mobile phone	83%	8%	2%	4%
Texting on a mobile phone	75%	11%	3%	7%
Using social network site on a mobile phone	57%	19%	7%	14%
E-mailing on a mobile phone	58%	19%	9%	12%
Answering short survey on a mobile phone	74%	13%	3%	7%

surveys. Of those not currently comfortable, most expressed interest in learning. Only a small minority expressed an unwillingness to use a smartphone for one or more of these activities.

The level of mobile phone ownership and use in this population mirrors the national population's use of mobile phones based on the Pew studies,^{34,36,37} which found that at the end of 2011, 83% of the U.S. population had mobile phones and that 75% used them to text as well as to call. In the current survey, 83% owned mobile phones, and 81% texted at least occasionally. Despite the specificity of the demographic group under study, our survey sample has the expected level of ownership of smartphones based on the national survey as well (30% versus 34% of those with an income of less than \$30,000 and 25% of those with less than a high school education). Most of the women who do not own smartphones expressed interest in or knowledge of how they work or a willingness to learn.

A minority of our survey population currently owned mobile phones with technology beyond phone and text. Although most expressed comfort using smartphone features, more than 1 in 5 felt the need to learn or were not sure if they would use features such as social networking, e-mailing, and responding to surveys. Including adequate training and technical assistance will be essential for a study involving mobile technology for this population.

Given that having immediate access to a recovery support network is critical, it was encouraging that 77% of the women reported having at least one close friend and that 88% had at least one close family member with whom they communicated via mobile phone or text. Mobile technology offers a significant opportunity to help them access these human resources, to cope with substance abuse triggers, to minimize the potential for relapse, and to receive immediate support for their continued recovery. As in other fields, smartphone technology may be a viable option for providing immediate and ongoing access to recovery supports for this highly vulnerable group of women.

The results from this study indicate that mobile phone technology may provide an option for recovery support. However, women were originally recruited from a single site in the Midwest whose demographic characteristics do not reflect the general female offender population. In addition, data presented are based on self-report and not on proficiency tests. Study participants' self-assessment of their ability to use mobile technology may be overstated, again

suggesting the importance of providing adequate training and technical assistance.

In summary, the target population's high use of mobile phones, their ability to use non-voice functions, and high level of communication with existing support networks suggest that mobile applications for recovery support could be extremely useful for the group that was surveyed. The survey results suggest further study to learn more about the ways in which daily ecological momentary assessments may be useful, to identify helpful supports for this group, and to test the feasibility of delivering them via mobile phones.

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Disclosure Statement

No competing financial interests exist.

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