Short communication

Mobile phone ownership, usage and readiness to use by patients in drug treatment

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A B S T R A C T

Background: Mobile phone based interventions using text-messages and smartphone apps demonstrate promise for enhancing the treatment of substance use disorders. However, there is limited evidence on the availability of mobile phones among people in substance use treatment, as well as usage patterns, contact preferences and willingness to use phone functions such as geo-location for treatment purposes.
Method: A questionnaire was completed by 398 patients enrolled in four UK community drug treatment services. The majority (74%) reported being in treatment for heroin dependence, 9% for alcohol, 4% prescription drugs, 1% amphetamines, 1% club drugs and 1% cannabis. The remaining reported a combination of different drug categories.
Results: Eighty-three percent of patients reported owning a mobile phone; 57% of phones were smartphones and 72% of clients had a pay-as-you-go contract. Forty-six percent of phone owners changed their number in the previous year. Eighty-six percent were willing to be contacted by their treatment provider via mobile phone, although 46% thought the use of geo-location to be unacceptable.
Conclusion: Mobile phones are widely available among individuals receiving community drug treatment and should be considered as a viable contact method by service providers, particularly text-messaging. However, patients may not have access to sophisticated features such as smartphone apps, and, up to date records of contact numbers must be frequently maintained. Developers need to be sensitive to issues of privacy and invasiveness around geo-location tracking and frequency of contact.

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1. Introduction

Mobile phones are pervasive in the developed world; 91% of adults in the United States (US) and 94% in the United Kingdom (UK) own a mobile phone (Ofcom, 2013; Pew Research Center, 2013). Given the widespread availability of mobile technology there is increasing interest in the potential of interventions utilising these technologies to enhance medical treatment, including treatment of substance use disorders (SUDs; Free et al., 2013; Guy et al., 2012; Rizvi et al., 2011). Smartphones automatically collect diverse data from inbuilt features such as motion sensors and geo-location tracking, which can be leveraged for personalised, multi-faceted app based interventions. For example, smartphones can be programmed to raise alerts when an individual enters pre-defined high-risk area (Gustafson et al., 2014). Equally, text-message based interventions require less sophisticated and less expensive

technology and are generating a growing evidence-base in healthcare settings for improving engagement and retention within treatment services (Milward et al., 2014).

However, concern has been expressed that the introduction of mobile phone technologies into healthcare treatment provision will increase inequalities by widening the 'digital divide' among resource-poor groups (López et al., 2011; Servon, 2008). There is relatively little published research on the use of mobile and smartphones among those receiving treatment for SUDs, although the limited available evidence suggests that this population does have access to, and utilises, mobile phones on a frequent basis. McClure et al. (2012) reported that 91% had mobile phones and 79% had access to SMS text-messaging.

Nonetheless, smartphone-based interventions require the user not only to own costly technology with large data allowances, but also to have a service contract, potentially un-available to resource-poor populations; Scott et al. (2013) reported that among female offenders who owned a mobile phone, only 30% used a smartphone while 70% used pay-as-you-go service plans. Moreover, patients with SUDs may change their mobile phone number frequently; a single study by McClure et al. (2012) reported that 23% of substance

abuse treatment clients changed numbers more than three times within a year.

No research has examined whether the use of geo-location as a function of smartphone apps for SUD treatment is acceptable to patients. This is a pertinent issue in light of the increasing availability of smartphones with in-built geo-location tracking functions and its potential to infringe upon an individual's preference for privacy (Klasnja and Pratt, 2012). Furthermore, there remain unexplored questions around preferences for contact via mobile phone; an important consideration when developing mobile phone based interventions.

We have consequently conducted a cross-sectional survey of individuals in treatment for SUDs, replicating and extending existing research to provide a comprehensive overview of mobile phone availability and type; day-to-day phone usage; level of acceptability for geo-location and to establish preferences around contact from services. Lastly, we have examined whether characteristics of these patients, including socio-demographic and drug use history, independently predicted access to, and preferences for, the use of mobile technology.

2. Method

2.1. Procedure

Three hundred and ninety eight participants completed the questionnaire between March and June, 2014 in a convenience sample of four community drug treatment services operated by Birmingham and Solihull Mental Health Foundation Trust (BSMHFT). These services provide Opioid Substitution Therapy (OST) and other treatments for opiate-addicted patients. All consecutive patients presenting for a routine appointment were asked by reception staff to complete a paper-and-pencil questionnaire and to return it anonymously to a collection box at reception upon completion. Participants were considered eligible if they were: (a) over 18 years old; (b) were receiving addiction treatment and (c) were able to read basic written English. Ethical approval was granted by BSMHFT and by Leicester National Research Ethics Service (NRES).

2.2. Participant characteristics

Participants had a wide age range (20–64 years; mean 36 years; SD 7.73) and were mostly male (74%). Eighty-one percent of the sample was unemployed and 18% were homeless. This sample of the treatment population was broadly representative of patients attending BSMHT services (Day et al., 2013). In the month prior to completing the survey 12% had been released from prison and 8% had completed detoxification. Seventy-four percent were receiving treatment for heroin dependence, 9% alcohol, 1% amphetamines, 1% club drugs, 4% prescription drugs and 1% cannabis. The remaining reported a combination of different drug categories.

2.3. Questionnaire items

The questionnaire consisted of 24 questions replicating and extending the survey conducted by McClure et al. (2012) covering availability of mobile phones, type of phone (smartphone vs non-smartphone), service plan; day-to-day use of mobile phones and preferences for, and attitudes towards, contact from their drug treatment provider (see Table 1).

2.4. Statistical analyses

Data were analysed using R version 3.0.2 (R Core Team, 2013). Univariate analyses (Chi Squares) assessed associations between socio-demographics and technology availability, use and

Table 1
Mobile phone availability, patterns of use and preferences for contact.

Variable		%
Availability (*whole sample, n = 398*)		
Owns a mobile phone		83
Mobile phone owners (*n = 325*)		
Smartphone devices		57
Service type	Pay-as-you-go	72
	Monthly contract	28
Use		
Changed mobile number last year		46
Reasons for change	Changed contract or provider	18
	Phone lost/stolen	44
	To avoid certain people	23
	Ran out of credit	2
Primary purpose for phone	Calls	30
	Text	26
	Same of both	44
Text messages sent per week	Everyday	55
	>once per week, <everyday	24
	<once per week	11
	Never	8
Use up text message limit		42
Preferences for contact (*whole sample, n = 398*)		%
Comfortable with contact via mobile		86
Geo-location	Acceptable	27
	Unacceptable	46
	Given no thought	27
Preferred contact method(s)	Call	53
	Text	41
	Letter	41
	Email	4
Preferred numbers SMS per week	<1	13
	1–2	46
	3–4	27
	5–7	15
Wanted SMS personalisation: time		36
Wanted personalisation: frequency		35

preferences. Multivariate logistic regression analyses examined independent associations between socio-demographics and phone technology availability and use.

3. Results

3.1. Availability and characteristics of mobile phones

Mobile phone availability, use and preferences for contact are summarised in Table 1. Eighty-three percent of patients reported owning a mobile phone; this did not differ by gender (X^2 (1, $N = 398$) = 2.67, $p > 0.05$) or employment (X^2 (1, $N = 398$) = 1.87, $p > 0.05$). Mean age did not differ between those who did vs did not own a phone (36.2 vs 35.03, $t(94.63) = -1.1$, $p = 0.28$). Of those who reported owning a mobile phone, 57% had smartphones while 72% had pay-as-you-go contracts.

3.2. Use of mobile phones

The largest proportion (44%) used their phone for texts and calls equally, with 30% using it predominantly for phone calls and 26% predominantly for text-messages. The majority of participants sent a text-message every day (55%), 24% sent a text-message more than once a week but less than every day while 8% never used