

SCOPE OF MOBILE PHONES IN MENTAL HEALTH CARE IN LOW RESOURCE SETTINGS

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Introduction: Mobile apps are used as an aid in the mental health services in many high income countries. The present study was conducted to assess frequency of mobile phone use amongst patients with mental illness.

Methods: Patients attending psychiatric outpatient department of a public funded tertiary care hospital in India were assessed for use of mobile phone and its possible utility in mental health service delivery using a semi structured questionnaire.

Results: The study had 350 subjects, out of whom 307 (87.7%) reported using mobile phone on a regular basis. Mobile phone was used for phone calls, sending and receiving short text messages (SMS) recreation, and accessing social networking sites. Most of the users agreed that the mobile phone could be used as an aid in mental health service delivery, and expressed willingness to receive educational messages.

Conclusion: Patients with mental illness attending psychiatric outpatient services in India use mobile phones and are willing to use as a treatment aid.

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Introduction

In the last few years, there has been a remarkable spread of mobile technology in low and middle-income (LAMI) countries, with its penetration being much higher than the general infrastructure. For example, in India, there are 943.9 million wireless telephones with a teledensity of about 75%, and the mobile phones constitute about 97% of the total telephones.¹ Mobile technologies, with an easy and wider availability, portability, being self powered, increasingly better computational capacities and decreasing costs, user familiarity and internet connectivity,² have opened up new alternatives for health care delivery that can be delivered through the existing

infrastructure, as people carry mobiles with them all the time.

Recent studies from high-income (HI) countries have reported that a number of people use mobile phones to search for health related information. Most patients with mental illness own mobile phones, use it for activities other than spoken conversations like sending emails, web browsing and social networking, and mobile phones have been explored as a potential aid in mental health services.³ Studies from HI countries have demonstrated the use of mobile phones in delivering psychosocial interventions (crucial for recovery) like provision of health information, prompts for medications, reminders,

self-monitoring, and practice of skills in real world situations.⁴

In India, mental health resources for psychosocial interventions are meagre and are not commonly applied in the care of patients with mental disorders⁵ as there is a gross deficiency of mental health resources (0.2 psychiatrists, 0.03 clinical psychologists, 0.05 psychiatric nurses, and 0.03 social workers per 100,000 of the population).^{6,7} In this context, mobile technologies have a potential to become an important mental health care service link between the meagre mental health services and the unfulfilled mental health care needs of the vast majority of unreached patients and caregivers, and can be used for a range of indications in mental health like increasing awareness, training, linkages between services, clinical services and research.

We are planning to develop a mobile based intervention framework for imparting psychosocial interventions to the patients attending psychiatric services. Before making mobile based interventions suitable for the needs of the patients, it is important to know whether the patients with mental illness are using mobile phones as there is absence of research in this field from India. The present study was conducted to find out the frequency of mobile phone use among patients with mental illnesses, and to assess feasibility of using mobile phones in improving service delivery and delivering educational messages in them.

Methodology

The study was conducted in psychiatry outpatient services at the All India Institute of Medical Sciences, New Delhi, India. The service runs a walk-in clinic, where all the first contact patients are seen, and a follow up clinic where the old patients already on treatment from the service are seen. Every fifth patient aged 18–60 years, visiting the walk-in clinic, and every fifth patient visiting the follow up clinic over a period of three months (from February – April, 2015) were recruited for the study.

The subjects were explained the purpose of the study. A written informed consent was taken. In patients with psychotic disorders, who were unable to give consent, consent was taken from the accompanying relative. The data was collected using a semi-structured questionnaire (attached as Appendix), prepared for the study by the investigators. The study was approved by the Institute ethics committee.

The data was analysed using descriptive statistics, reported as mean and standard deviation for continuous variables and percentages for discrete variables.

Results

A total of 350 subjects were recruited for the study, 205 (58.6%) males and 145 (41.4%) females. Two hundred and thirty five (77.1%) subjects were from the follow up clinic and 115 (32.9%) were from the walk in clinic. Mean age of the subjects was 33.3 (± 11.5) years. About 40% of the subjects had received 10 years of formal education, one fifth had studied upto 12th standard, and about 30% were graduate. Mean duration of illness was 6.2 (± 7.6) years, and mean duration of treatment was 1.5 (± 3.5) years. Common diagnosis included neurotic, stress related and somatoform disorders (47.0%), mood disorders (32.0%), schizophrenia and related disorders (14.3%), and disorders due to psychoactive substance use (4.0%).

Three hundred and seven (87.7%) subjects reported using mobile phones regularly. Most of the subjects used mobile phone for making and receiving phone calls, and about two third also used it for sending and receiving short text messages (SMS). About half of them used clock and alarm functionalities, two fifth also used it for recreational activities, and around 30% used for accessing social network sites (Table 1).

Most of the subjects reported that mobile phones could be used as an aid to treatment for psychiatric disorders. This included use as a reminder for appointments (90.4%), and to take medications (72.3%). About half of the subjects suggested that mobile phones could be used for recording and reporting of side effects. Forty two percent of the subjects reported that mobile phones could be used for receiving educational information related to their mental illness. Only 17% of the subjects felt that these could be used for imparting psychological treatments (Table 1).

More than 70% of the mobile phone using subjects expressed that the phones could be used to receive educational messages regarding any precautions to be taken (70.5%), activities and exercises (55.4%), information about their mental illness (36.5%), dietary advice (26.9%) and information about stress reduction techniques (24.7%) (Table 1).

	n (%)
Purpose	
Type of application (n = 307)	
Making and receiving calls	301 (98.1)
Sending & receiving SMS	210 (68.4)
Clock & Alarm	153 (49.8)
Recreational activities	121 (39.4)
Use of social networking sites	93 (30.3)
Utility of mobile phones in treatment as an aid (n = 271)	
As Reminder	
Reminder for appointment	245 (90.4)
Reminder to take medicines	196 (72.3)
Recording and reporting of side effects	142 (52.4)
Receiving information about mental illness	115 (42.4)
Psychological treatment	46 (16.97)
Kind of Educational messages	
Any precautions to be taken	191 (70.5)
Activities or exercises	150 (55.4)
Knowledge about their mental illness	99 (36.5)
Dietary advice	73 (26.9)
Information about stress reduction techniques	67 (24.7)

Table 1: Mobile phone use and its utility as aid to psychiatric treatment. Application of mobile phone in day-to-day life (n = 307)

In a single open-ended question about any other use of mobile phone related to psychiatric treatment, about 11% of the subjects provided a suggestion. Sixteen subjects felt that mobile phones can be used to give feedback regarding treatment. Fifteen subjects felt that these can be used for sharing experience regarding treatment through specific patient groups on social networking sites.

Discussion

More than 85% of the patients with mental health problems in our study were using a mobile phone. The mobile phones were being used for a range of activities besides making phone calls. Most subjects opined that it could also be used as an aid in the treatment.

All of our subjects used mobile phone for making and receiving phone calls, but over two third also used it for sending and receiving SMS. The phone was also used for other functions like clock and alarm by about half of the subjects, for recreation by about two fifths, and for accessing social network sites by 30% of the subjects. Earlier studies have also reported the most common uses of mobile phones in patients with severe mental illnesses as for making phone calls, texting, and internet.³

Regarding the potential usage of mobiles phones in treatment, most (90%) of the subjects reported that these can be used to remind them for appointments. Majority of the subjects indicated use of mobile phones in pharmacological treatment as reminder for taking medications and reporting side effects. However, only less than half of the subjects indicated that mobile phones can be used for receiving educational information related to their mental illness, and even fewer subjects felt that these can be used for imparting psychological treatments. The finding is not unusual as majority of the patients with mental illnesses receive pharmacological treatment with minimal psychosocial interventions due to lack of resources for the latter.⁵ However, when asked specifically about the kind of educational messages they wanted to receive, majority of them listed only psychosocial interventions. About three fourth of the subjects wanted to receive messages regarding any precautions to be taken regarding illness or medications. Other areas of requested information included messages regarding activities and exercises, information about their illness, dietary advice and stress reduction techniques. This shows that the mobile phones appear to have a high potential of use in the mental health care settings.

Our results are in line with the studies from HI countries which have reported that 72%–97% of

patients with mental illnesses and substance use disorders own a mobile phone.^{2,8,9} The results are not surprising since compared to an average 2008–2012 growth rate of mobile subscriptions of just 10.15% in the HI countries, the growth rate was much higher (75.07%) in South Asia driven mainly by growth in India.¹⁰

The study had a limitation of being conducted in a tertiary care setting in a big city and hence the findings may not be generalizable to other settings. We did not screen specifically for the use of smart phones, since most of our subjects use ordinary phones.

Conclusion

The study concludes that most of the patients with psychiatric disorders attending outpatient services in India use mobile phones, and welcome its use as a treatment aid. Mobile phones offer a potential to be utilised in India with limited human resources in mental health and a potential use in psychosocial treatment.

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Appendix A:

Feasibility of using mobile phones in improving service delivery and creating health awareness in patients with mental disorders

(Please tick mark the answers)

Date	Regn No.	Name
Age	Gender	Education
Address:		
Mobile:	E mail (if any):	
Diagnosis		
Duration of Illness:		
Duration of treatment at AIIMS:		
1. Do you have a mobile phone?	Yes/No	
2. For what all functions do you use mobile phone? (Kindly mark as many as applicable)		
<ul style="list-style-type: none"> • Making & receiving calls • Sending & receiving messages • Clock & alarm • Contact list • Any other 		
3. Do you think that it can be used as a helping aid in your treatment?	Yes/No	

4. If yes, kindly tell, how? (Kindly mark as many as applicable)

- Reminder for appointment
- Reminder to take medicines
- Recording & reporting of side effects
- Receiving education messages related to your illness
- Psychological treatment
- Any other

5. What kind of educational messages you would like to receive?

- Any precautions to be taken
- Activities or exercises
- Dietary advice
- Any other

Any suggestions, you would like to make