International Journal of Health Sciences and Research
Vol.10; Issue: 8; August 2020
Website: www.ijhsr.org
Original Research Article *ISSN: 2249-9571*

Awareness of Mental Health Applications among Smartphone Users in India: A Population-Based Survey

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ABSTRACT

Background and Objectives: In the present era, modern technology has paved the way for multifunctional devices like smart phones and smart watches. There are around 4.3 million smart phone users in India. And with 2.5 million apps – available across Google and Apple's digital marketplaces, smart phones are impacting day-to-day life in some surprising ways. The smart use of Smartphone increases your brain's functioning helping to stay active. About 89% of the population in India say they are suffering from stress compared to the global average of 86. The purpose of this study is to find the awareness of mental health applications in Indian smart phone users so that it can be utilized for improving mental health.

Methodology: A population based online survey was conducted wherein 303 responses were documented all across the country to determine the smartphone and health app usage. Subjects were asked to fill the online Google form survey. A cross-sectional survey assessed smartphone and health app usage. Further, three focus group discussions evaluated the needs and apprehensions in using these apps. And the idea of using these applications as a platform for improving brain functions was also discussed.

Results: A total of 303 Indians participated in this online survey. Out of which
50.8% population accepted that they are aware of most of the applications in their phones while 46.2% stated that they are aware of only few applications in their smartphones. Out of these only 30.2% are aware of mental health applications which show that irrespective of knowing all the applications of their smartphones most of the population are not aware of mental health apps which suggest the need of awareness of mental health apps among smartphone users in India before launching various mental health applications.

Conclusion: Without awareness among people designing mental health apps (MHApps) will be misleading, as the research results yielded despite the knowledge of almost all the Apps in smartphones the ratio of awareness of people for MHApps is very low which suggests the urgent need of awareness of MHApps among people for better delivery of mental health services in India.

Key Words: Mental health, Mental Health Apps (MHApps), Smartphone

INTRODUCTION

Smartphone term refers to a new class of mobile phones that provides integrated services from communication, computing and mobile sectors including voice communication, messaging, personal information management (PIM) applications and wireless communication capability. [(1)] Modern day smartphones gives the users millions of features rather than basic features of communication and due to this the discovery of smartphone is a major revolutionary change worldwide. The users of smartphones are increasing day by day. Nowadays, no one can imagine their life without smartphone because it provides ease

of life.

India is sharing 2nd largest market share in telecommunication marketing Worldwide. According to market research firm techARC, India had 502.2 million smartphone users as of December 2019, which means over 77 per cent of Indians are now accessing wireless broadband through smartphones. The number of smartphone users in India is expected to rise by 84% to 859 million by 2022 from 468 million in 2017, according to a joint study by Associated Chambers of Commerce and Industry of India and PwC. [(2)]

The utility of smartphones is expanded by software programs in the form of third-party applications (apps). Applications are the heart of smartphones. There are various applications available in the market depending for all our need, be it social networking applications like face book, Instagram, twitter to messaging apps like WhatsApp. In India, most of the population uses these applications for communication, entertainment, online shopping, banking or gaming. What if we use these applications for providing a better door to door health services? Yes! There are physical fitness applications available and people use these apps for generally blood pressure monitoring, tracing their fitness activities, etc. Although there are some projects that deliver mobile based services for health information, [(3)] HIV, [(4)(5)] diabetes, [(6)] tuberculosis, [(7)] cardiovascular diseases [(8)] in India, and two SMS services for mental health issues. [(9)] Statistics suggest that in India most of people have mental health problems like stress, depression, anxiety but the literacy rate for mental health is still low in India. Globally, mental health apps (MHApps) have been used for psychosis, [(10)] bipolar disorder, [(11)] depression, [(12)] suicide, [(13)] anxiety, [(14)] eating disorders and substance use, [(15)] as well as for improving service delivery and monitoring program outcome in the field of psychiatry. MHApp represents an umbrella term incorporating diverse types of apps that differ in their mode of intervention delivery, mobile platforms and the capability of the mobile devices in terms of monitoring sensors and internet connectivity, thereby limiting comparability. In India, awareness of mental health resources is very low, due to which greater than 80% of patients suffering from psychological disorders fail to receive minimally adequate treatment for their illness, [(16)(17)] creating a mental health treatment gap of more than 80%. At the same time, India is going through a digital revolution with its telecommunication network currently reported as the second largest in the world. Therefore, telecommunication can bridge the gap between mental health issues and its delivery.

So, we can use this digital revolution as a source to bridge the gaps of delivering mental health services in India. And, to making India ready for mental health apps we need to make people aware of these apps. This study mainly focuses on awareness of people about mental health applications among smartphone users in India as a first step towards filling the gap between mental health issues and its delivery.

METHODOLOGY

Participants and selection criteria

According to a study, while Millennials (ages 18 to 33 years) and Gen X (ages 34 to 47 years) report the highest average stress levels, Boomers (48 to 66 years) and Matures (67 years and older) join them in reporting levels that are higher than they consider healthy. Therefore, study aimed to indulge various age groups ranging from 10 to 70 years of age. Where each group is vulnerable to stress, the reason of stress and consequences may vary. Both males and females were included in the study. Subject's perception of his or her mental health was also noted in order to rule out any severe mental illness which may alter the subject's responses to survey. Subjects daily usage of mobile was also documented ranging from 30 minutes to more than 6 hours, as it may influence the

parameters taken into consideration for analysis. Apart from these other factors like operating system used, awareness and handling of various applications in smart phones were also noted. As some of the applications which are currently available but not readily used, it was considered important to find subjects awareness of availability of these applications. The confidentiality of all participants and their patients were ensured. Participants diagnosed with any severe mental illness like depression, anxiety, schizophrenia or bipolar disease etc were not included in the study as underlying disease may influence their responses and comprehension.

Methods

We conducted a survey by asking subjects to fill up a self developed online questionnaire on Google form which is circulated all across the country. The questionnaire consists of 10 questions of different domains; 3 questions are there for asking their demographics, 3 questions for their mobile phone usage, 1 question for knowing their mental health status, 2 questions for knowing their awareness of MHApp. There were 303 responses which were analyzed. For the purpose of the quantitative survey, the participants for the study were selected using a purposive consecutive sampling method. This was followed by a series of two focused group discussions. Participation in the FGDs was voluntary and followed a purposive sampling technique. Each FGD spanned for two hours wherein experts from various domains like a psychiatrist, physiotherapist, psychologist, occupational therapist, software developer and a neurologist were involved and the idea of mental health applications along with its needs, effectiveness and technological and ground barriers were discussed. A mixed group of experts often helped in initiating discussions, encouraged extensive cross-communication. The two FGDs included a total of 15 experts. Fears and apprehensions of mobile based applications were also discussed.

RESULTS

The study was completed by 303 normal individuals of different age groups all over India out of which 3 responses was not completed. Out of the 303 population 53.8% of population lies between 20-30 years of age group “Fig 1” and about 24.8% of population says they use their mobile phones for 2-3 hours “Fig 2”. 52.1% of population rated their mental health as good “Fig 3”. 50.8% population accepted that they are aware of most of the applications in their phones while 46.2% stated that they are aware of only few applications in their smartphones “Fig 4”. Out of these only 30.2% are aware of mental health applications “Fig 6” which shows that irrespective of knowing all the applications of their smartphones most of the population are not aware of mental health apps which suggest the need of awareness of mental health apps among smartphone users in India before launching various mental health applications.

Table 1: **Distribution and coding of focus group (FGD) participants(n=12)**

Focus group	Participants	Code
FGD1	1 Physiologist	F1P1
	3 Physical therapists	F1PT3
	1 Occupational therapist	F1OT1
	1 Software developer	F1SD1
FGD2	1 Clinical Psychiatrist	F2CP1
	3 Physical therapists	F2PT3
	1 Occupational therapist	F2OT1
	1 Software developer	F2SD1

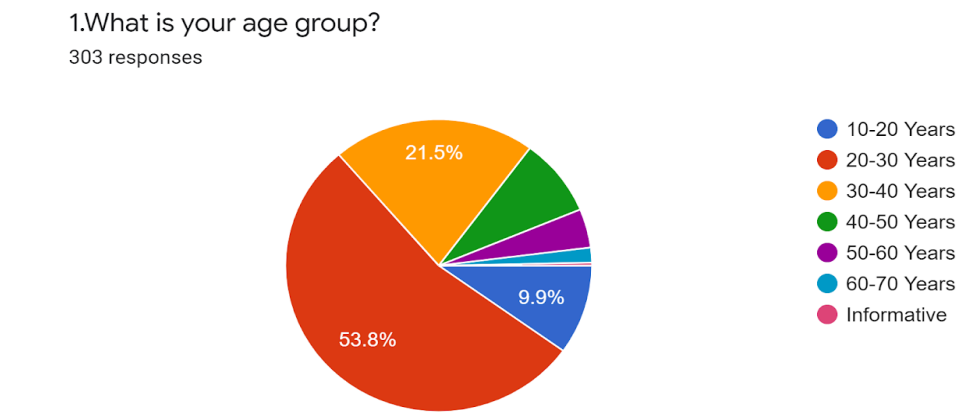

Fig: 1

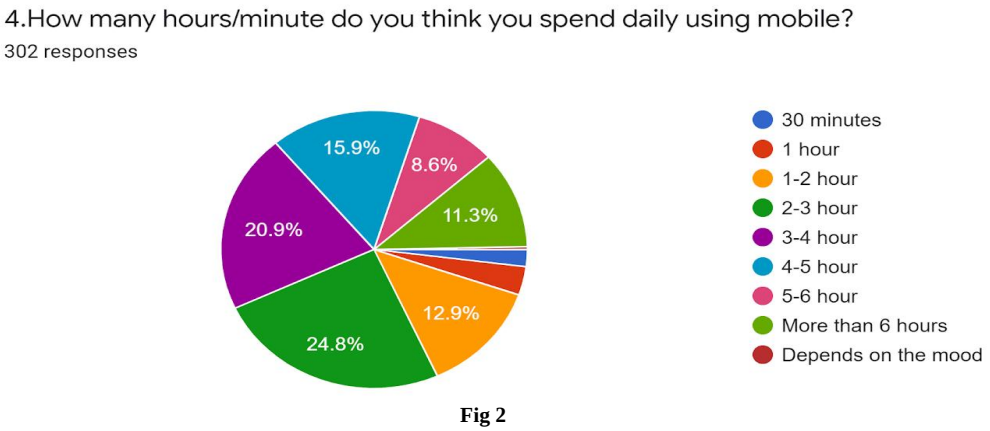

Fig 2

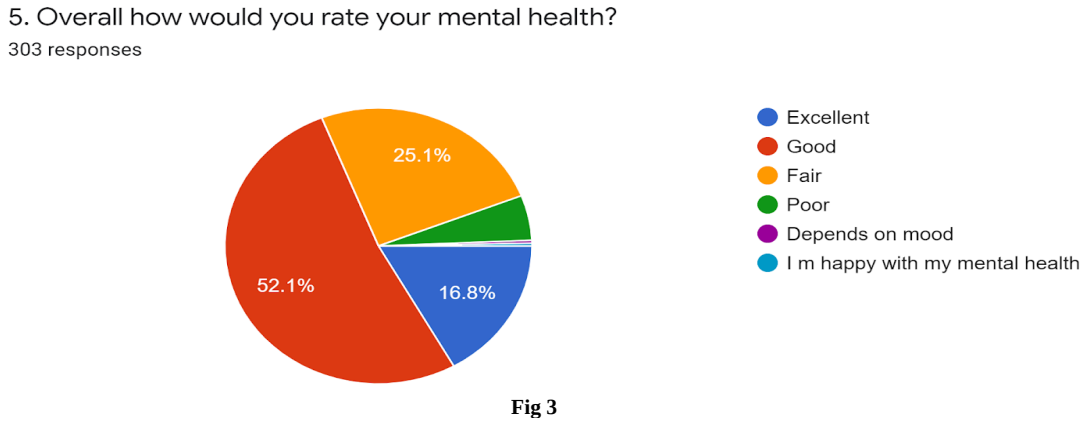

Fig 3

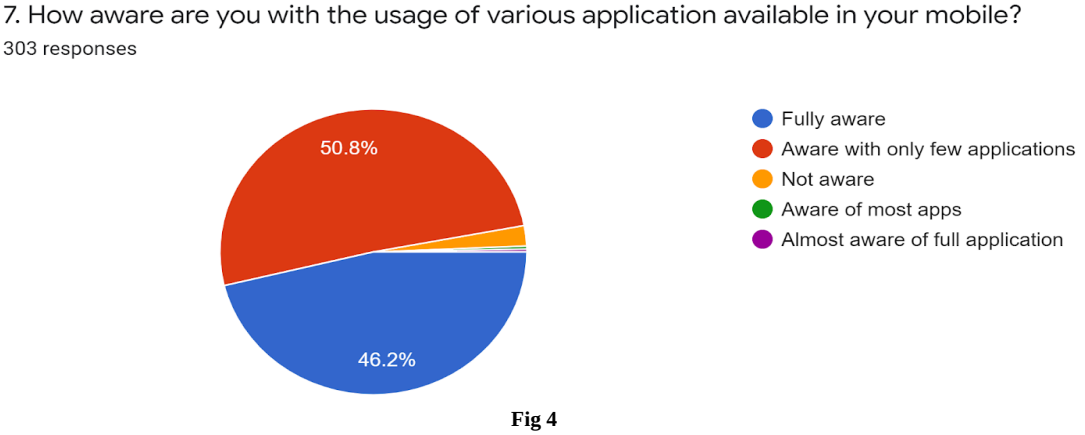

Fig 4

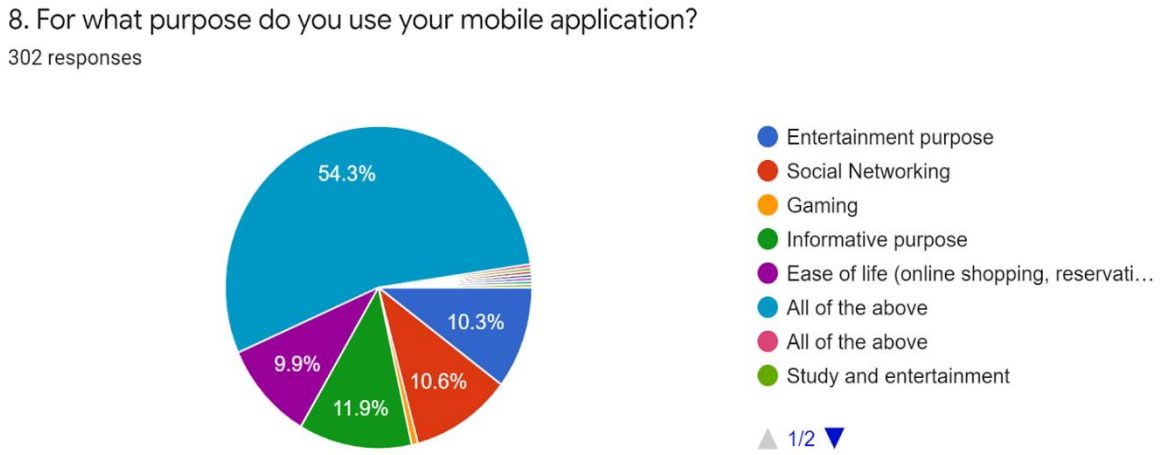

Fig 5

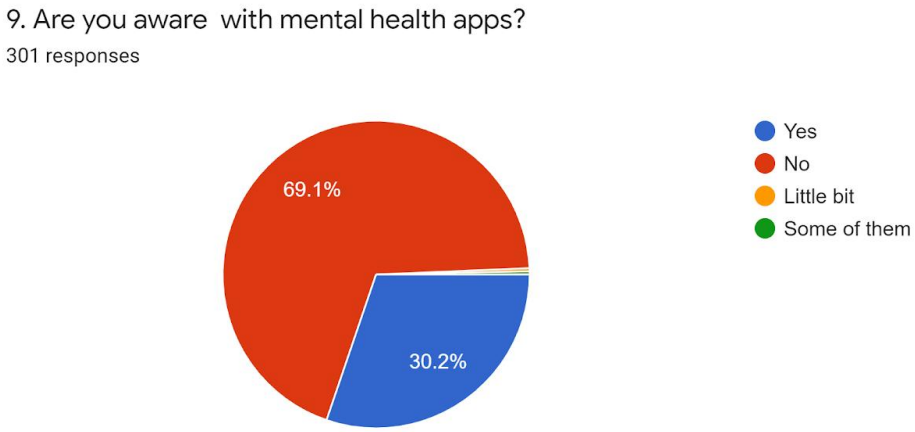

Fig 6

DISCUSSION

This study was an attempt to find the awareness of mental health applications in smart phone users of India irrespective of their age and gender differences. Population's awareness will hence further determine the effectiveness of launching these mental health applications as a mode or medium to reach out to the maximum number of people suffering from variety of stresses and thus disturbed mental health in India.

Smart phone usage in India

According to study conducted by Michael Bauer, a smart phone is a transformational technology. The many benefits include instant communications and access to information from anywhere while using a simple, graphical, finger-based interface. One smart phone eliminates the need to carry many devices including a phone, camera, speakers, Wi-Fi adapter, and a GPS system. [18] A smart phone allows the user to download and run applications (apps). Among Indian population, it was found that 82.5% people use Android operating system and 46.2% are fully aware with smart phone usage. Statistical analysis also revealed 24.8% individuals spend on an average 2-3 hrs daily using mobile phones, 20.9% for 3-4 hours, 11.3% uses for more than more than 6 hours. Where only 11.9 % individuals use mobile for informative purpose, 9.9% for ease of life, 54.3% individuals use mobiles for all informative, social networking, gaming, ease of life, official and personal life.

Awareness of mental health applications

Viewing through the results it was found that only 30.3 per cent of Indian population is aware of mental health applications whereas 69 per cent of population has never heard of these applications. The app-scape (app landscape) targeting mental health has increasingly been growing. According to a 2017 report, more than 318,000 health-related mobile apps were available for consumers of which 490 unique apps were targeted at mental health and behavioral disorders. [19] What's up, Mood kit, quit that, mind shift, Self – help for anxiety management (SAM), CBT thought record diary are among popular mental health applications available in 2020. Although these applications are popular globally but in Indian population as revealed through our study findings, their awareness is still very low. These findings imply that the accumulating evidence for digital mental health interventions delivered through the internet as an effective mean to treat mental health disorders or reduced stress levels in Indian population, cannot be directly translated to digital interventions delivered via mobile apps for all mental health disturbances. In order to bring out the effectiveness and before launching such applications as a tool for combating mental health hazards in India we need to first make the population aware of such applications by various means like awareness programs, tele-rehabilitation, more frequent follow ups, using social media platforms, advertisements etc.

Limitations and Future Research

First, limitation of this study is its' sample size. Although we tried to include population of every age group but due to time constraints, we have completed with 303 participants. Secondly, we can correlate with the age group is out of the population which age group are mostly aware of MHApps; so that we can work on that particular age group of people.

Future research can be done on a large sample size including by what other means we can increase awareness among people or finding the reason why people are not aware of mental health apps in India irrespective of knowing all the major Apps in their smartphones.

CONCLUSION

We concluded from this study that there is an urgent need of awareness among smartphone users in India for mental health apps. Bringing awareness among people can fill the gap between mental health issues and delivering mental health services in India.

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How to cite this article: Chakraverty S, Arora C. Awareness of mental health applications among smartphone users in India: a population-based survey. Int J Health Sci Res. 2020; 10(8):223-229.

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