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Digitalisation provisions for controlling depression in developing countries: Short review

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Digitalisation provisions for controlling depression in developing countries: short review

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Abstract

Depression is a global health issue which is associated with disability, absenteeism, decreased productivity and high suicide rates. It is the fourth most common cause of disability globally and by the year 2020 it will be the second leading cause of disease burden. In Pakistan, the prevalence of depression is 45.9%. A unique and promising method for addressing the issue is mobile health (m-health). It refers to the utilisation of mobile technology to support various aspects of healthcare. Electronic record, SMS, internet, wearable devices and mobile applications are some of the digitalisation approaches used to bridge the treatment gap in depression through assuring privacy of patients, improving accessibility, reducing taboos related to depression, save cost for patients and reduce hospital burden and consultation time; these will be accessible in remote areas as well. Therefore, this short review is aimed to highlight the m-health forecasting for controlling depression and positional use in developing countries.

Keywords: Digitalisation, Depression and M-health.

Introduction

Mental health has become a global health issue affecting different age groups and socioeconomic backgrounds.[1, 2] Globally, mental and behavioural illnesses account for 7.4% of disability-adjusted life years (DALYs). With escalation in cases of depression to 38% since 1990, depressive disorders ranked as 11th highest cause of DALYs.[2] Depression is one of the most common recurrent mental disorders that affect both the mind and body and leads to decreased productivity, workplace absenteeism and high suicide rate.[3-7] It is the fourth most common cause of disability and by the year 2020 it will be the second leading cause of disease burden globally.[8]

A cross-national research in developing countries revealed that prevalence of depression in urban Pakistan was 45.9%,[9] 29% in rural Bangladesh,[10] 6.1% in a peri-urban clinic of Uganda[11] and 63.2% in India.[8, 12] Factors such as low income, unavailability of insurance, timeliness, privacy and stigma attached to psychiatric illnesses, lead to scarce and unfair psychiatric resources. These factors also create barriers for patients limiting access to treatment and decreasing their retention in treatment.[13] Therefore, there is a need for some unique strategy for addressing mental illness.

In 2008, the first m-health application software became available, and since then more than 10,000 applications have been developed for smart phones.[14] Of these apps, 6% are purely used to evaluate mental health outcomes.[14, 15] Mobile phones and apps signify an opportunity to screen and intervene depressive patients.[16, 17] Various studies conducted in Western countries regarding mobile health intervention for depression show that this technology provides the facility of delivering interactive tools for depressive patients in their environment — also called ecological momentary intervention.[18]

To meet the Sustainable Development Goal (target 3.8) of good health and well-being, which asks for an end to communicable diseases, achieving universal health coverage, and providing access to safe and effective medicines and

vaccines by 2030,[19] need innovative solution. Globally the uptake of digitalisation has been a remarkable impact on the healthcare delivery system. Digitalisation approaches include electronic record, tele-health, SMS, internet, wearable, devices, mobile health, and mobile applications, and offers to bridge the gap in the treatment of depression by providing access to information on depression and encouraging health seeking behaviour.[20] Electronic health provides enriched medium for information and communication that can be transferred.[21] Mobile applications allow global access, empowering assessment of patients with depression and other mental illnesses.[16] E-health also overcomes multiple barriers in treatment, including cost, timeliness and concerns regarding confidentiality therefore levels of satisfaction is high among patients with E-mental health programme as a self-care digital tool.[17]

The studies included in this review make use of digitalisation for depressive patients in our country. This innovation will help us in detecting actual and hidden cases of depression as there is a stigma associated with this illness. Furthermore, early screening and diagnosis of cases is also possible which helps in prompt and optimised treatment. Moreover, it assures the privacy of patients, saves travel cost, consultation time and is also accessible in remote areas. Thus, there is a dire need for m-health /digitalisation services in our region that will lessen public health burden, hospital cost and stay. Therefore, the current study is designed to emphasise m-health opportunities and prospects that should be utilised for depressive patients in Pakistan. Therefore, this short review is aimed to highlight the m-health forecasts for depression as there is a dearth of using this innovation in developing countries, and its impact on sustainable development goals.

An initial literature review was carried out to develop this report. The idea of this short review came when one of the authors working at the Aga Khan Development Network's eHealth Resource Centre (AKDN eHRC) was applying this technology for maternal health of patients in remote and rural settings of

lower-middle income countries. It was a unique programme, helped to overcome the three major challenges for providing healthcare — access, quality and cost — in low-resource settings through Information Communication technology such as tele-consultations and eLearning sessions. The intention was not to do a systematic review of all the available literature, rather selected articles were reviewed for building this paper. This paper focus on digitalisation, its roots in the public health perspective of depression and its reduction.

The role of m-health is evident in the developed world. Examples of such interventions include 'Mobilyze', an app to target depression; it provides ecological momentary intervention in which context-aware system detects participants' location, activity, social context, mood and emotions.[18] Likewise another intervention app, 'SituMan' provides situation awareness. 'MoodBuster', an ecological momentary assessment and intervention mobile application, is used for self-assessment of depressive patients.[13] A randomised trial on young adults (YAs) revealed that eSMART –MH was based on critical parameters such as necessity, acceptability, fidelity, and safety. However, feasibility findings were mixed.[22] A study conducted in Australia, Canada, New Zealand, and the United Kingdom included 2,538 participants who monitored depression with the help of mobile phone app.[23] Of the participants, 322 participants had severe depressive symptoms that were undiagnosed previously and were directed through an app to seek immediate advice from healthcare provider. Moreover, a follow-up message was also sent to them after one month for advice from healthcare professional through mobile phone. The study revealed that around 74% of the participants who had severe scores completed the follow-up.[23] Another study conducted in China showed that a smartphone application called iHope was used to perform daily ecological momentary assessment (EMA) of different mental illnesses, including depression, in outpatients. This study revealed the viability of smartphone-based

EMA in patients with depression.[24] A study conducted in Kenya used mobile based mental health Global Action Intervention Guide (mhGAP-IG)for depression.[25] This study concludes that the use of mobile-based guide in remote healthcare settings is important because mostly non-mental healthcare specialists tackle all mental health problems. This mobile-based mhGAP-IG screening save travel cost, consultation time and utilisation of evidence-based screening tool.[25]

The “Kokoro” app is a smartphone-based Cognitive Behaviour Therapy (CBT) program which has shown viability and suitability of therapy for treatment-resistant depression.[26] Moreover, the “myCompass” is another programme for different mental illnesses, including mild to moderate depression, that track symptoms and give medication reminders.[27] Tele-mental health has widely been used for the benefit of patients with depression.[28] Moreover, improvement in symptoms of depression due to tele-mental health than in-person groups is also reported.[28] Another study conducted in community clinics also revealed that patients’ access improved in depression-specific care using tele-psychiatry.[29] Studies have also pointed out that utilisation of tele-psychiatry can help in long-term cost savings.[30]

This short review concluded that mobile phones have reached almost all strata of the world and provide such treatment platform that build continuous two-way connection between the patient and healthcare staff. Mobile technology helps in monitoring an individual’s physiological and psychological state. The use of this technology in healthcare interventions may lessen the rising trend of healthcare costs that ultimately improve access to health services. Thus, digitalisation should be made use of in developing countries for depressive patients, particularly in Pakistan.

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