Digital Delivery of Mental Health: A Review on Effectiveness and Challenges in Implementation

Dr. KUMARI RANJEETA

Assistant Professor (Guest), Department of Psychology, R. B. S. College, Andaur, Samastipur, L. N. M. U., Darbhanga

ABSTRACT
The digital mental health Inventories (DMHIs) has become a great potential to improve the mental wellness and health in this fast growing digital era. As we know nearly half of the patients of mental health, were deprived from the proper treatment through traditional therapeutic techniques, but now in this digital era, Smartphone and online platforms are easily available to access different way of therapies and diagnosis. The goal of the mental health Inventories are focused on to provide services targeting the mental health problems through online and digital technologies such as web - based programs, virtual reality platforms, mobile health (mHealth), cCBT (computerized Cognitive Behaviour Therapy), Chroma-Key (for social anxiety and interpersonal difficulties). The present paper is a systematic review of different literature about the impacts of digital mental health technologies.
KEYWORDS – Mental Wellness, Digital Mental Health, Digital Mental Health Inventories, Digital Technologies, Digital Therapies

Introduction

Sigmund Freud quotes that unexpressed emotions will never die, they are buried alive and will come forth later in uglier ways, that unfulfilled and unexpressed desires and emotions are the psychological cause of mental health disorders. Many people of the different countries suffering from symptoms of various mental disorders, like, feeling of isolation, stress, anxiety, depression, suicidal thoughts and problems of interpersonal relationships. These symptoms can lead to a multiple of negative outcomes, reduced quality of life, an increased risk of morbidity, including disability to survive properly in the social, professional and economical environment. The digital mental health Inventories (DMHIs) are non-traditional therapeutic relationship that offer therapeutic interventions and tremendous potential to improve mental health and wellness without involvement of therapist. Now these days' digital technologies are familiar with us and it's very useful in everyday of life even in mental health improvement which is developed by the mental health professionals, researchers or even by expert individuals, who need self assessment. Mental well-beings and mental Health care is now accessible through the mental health Inventories. There are several reasons or motives that people using specific website or smartphone apps to talk to someone about their mental health related issues, emotional experiences, feeling listened to, understood as well supported by someone, that the utilize and benefits from digital mental health Inventories. App based mental health treatment programs or technologies can be used at a minimal cost, with fewer stigmas associated, in time saving and less space- constrained manners. The another reason of acceptance of these digital technologies of mental health delivery are feel like a friendship with a digital character, an imaginary friend, or guide, or therapists, who is stranger and who do not know them well. The mental health seeker can communicate freely about them and receive support at their convenience without acquaintances and commitment as prerequisites in face to face therapies or at a clinic. This main aim of this paper is to explore the effectiveness and challenges of the uses of digital technologies in therapies and improvement of mental health.

Digital Mental Health Inventories:
The services to improve mental health or targeting mental health problems and disorders through mobile technologies, websites from online techniques are digital mental health inventories developed by DMHIs. The digital mental health Inventories and other digital technologies are expandable or can be access from digital or technological platforms, such as artificial intelligence, computers, smart phones, Virtual reality, video games and teletherapy. These technologies can reduce problems of mental health and interpersonal relationships. As well as improve mental wellness and provide care through online platforms. The most important aim and goal of these inventories are making balance digital inventories with face to face therapy. These are some mental health inventories:

cCBT Computerized Cognitive Behaviour Therapy) – Computerized Cognitive Behaviour Therapy or cCBT is a type of self-help therapy, such as Beating the Blues and Modgym, used for delivering therapies through computer, laptop, tablet and Smartphone. Lots of sufferers prefer using digital media rather than talking to a therapist about their personal and emotional feelings. In these techniques a therapist would in face to face with the patient. It will help to enhance existing strength and build new skills such as building resilience and problem solving, which occurs due to stress. These digital programmes are learning programmes to control and manage anxious thoughts and feel better the mood of patients through behavior modification.

VR (Virtual Reality) – Virtual Reality or VR used in therapies of anxiety, depression, chronic pain, whispering negative thoughts, radical imbalance, feeling of stress, suffering from exhaustions and trouble sleeping. Virtual Reality is for distress the nervous system, quiets the over-thinking mind and heightens the brain rewiring process. It can help the patient to cope up with chronic pain, trauma or to express identity and creativity. But Virtual Reality can simulate nightmare, flashbacks, distress, addiction, desensitization and dissociation.

Web-based programmes – There are several web-based programmes which can help to improve the mental health and enable to access to digital media, like computers, Laptop, Tablets and Smartphone. A key implication of the study conducted by De Kock et al. described the planning, development and usability of the evaluation of the brief outcome measure for single-session of the Web-based support, an online web-based mental health platform for children and young persons. The web- programmers have a purpose, that users can maintain their self-care with the help of mood control and implement healthy habits. It also happens on websites that other patients share their tips that have may be similar to other patients, and working for others. The sharing options on the websites can validate the own experience of patients and it make them feel less alone.

Wearable devices – It is understood that psychological events effect on the physiological patterns, like increase of Heart Rate (HR) may be indication of presence of anxiety or stress. Wearable sensors can continuously track physiological changes, such as heart rate, breathing pattern, pulse rate or palpitation. It is a kind of electronic device designed to be worn on patient's body. These devices are available in many forms, like medical devices, clothing, jewelries or accessories. Just as NEURO-Stack is developed by a multi disciplinary research team of the California, Los Angeles (UCLA) and other institutes in the US, it can record the activity of single neurons in the brain. The wearable devices can help to improve health and fitness through providing information's about the nutrition, sleep patterns, calories burned, heart rates and other physical activities. But these wearable devices are limited and expensive.

Video games: The video games can improve memory, ability of creativity, develop language and power of concentration. It makes easier to develop cognitive skills, which help to cope with stress and other mental health disorders. Studies have shown that playing video game may increase grey material of brain, which is associated with spatial navigation, perception, memories and muscles control, and boost brain control. There are some video games may help to improve vision of a person, relieve stress, boost mood and make a better heart-rhythm. The video games have been used in therapy for over a decade for mental health disorders. In this era of mobile technology people are more receptive to informal help seeking, especially mental health, and digital media may help them

overcome from various traditional barriers. The people, who struggle with mental health, prefer mobile technology, which has great potential to deliver mental health help, services and web programmes.

Effectiveness of Digital Mental Health Inventories:
The implementation of digital mental health inventories depends upon consulting and community of the mental health seekers, as well as on the developer of these inventories. It is demanded that these technologies fulfill the need of patients and satisfied them. The primary concern and feasibility goal of the interventions are patient's flow of acceptance, constraints of budget and the number of patients, who need these technologies to improve their mental health with sustainability. During COVID-19 pandemic, it was a caused of global health crisis with extraordinary burdens and challenges across many countries of the world, that time digital technologies are fast forwards adoption in mental health domain and specially health care. Digital mental health inventories are generally affordable and accessible way of treatment. There are many apps, which are free of cost or at low cost and can provide 24/7 support, help and therapy. These technologies identify the problem of patient, like who may at risk of suicide, anxiety, depression, stress, sleep troubles, problem of interpersonal relationship and in chronic situation. With the digital tools patients benefitted to solve the mental health problems and the healthcare providers have an extensive view of the health of patients, it significantly increasing access to health data.
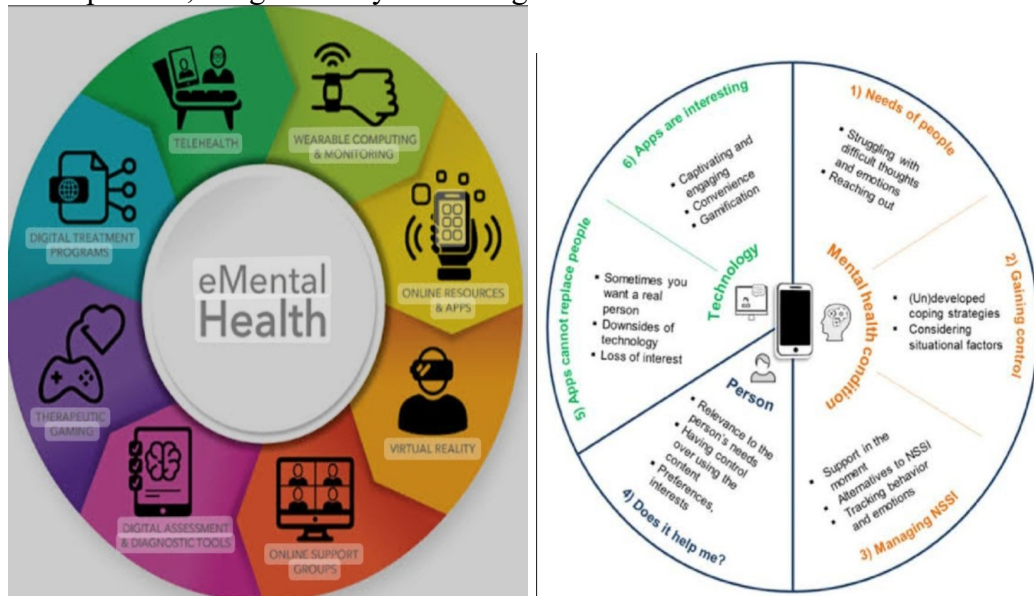
Challenges in Implementation of Digital Mental Health Inventories:
Digital mental health inventories (DMHIs) delivering mental health care and an effective tool to address underutilization of professional mental health services, care and support to suffered patients. But there are lots challenges which should have to note, such as, the absence of clear guideline and regulation may be cause of data theft, misuse of electronic health record, digital prescriptions or fraudulent practices. Another one is how the treatment through digital inventories of mental health compares to traditional treatment in terms of effectiveness. It is a major limitation that there is an absence of emotional touch, means traditional relationship between patients and therapist. In mental health disorders it's necessary that the patient believe on therapist, as well as therapist make a professional relationship with the patient till the disorder treated, person to person therapy, which is more effective than digital technologies or artificial intelligence. Mental health inventories like teletherapy provide support and resources to patient, but they do not provide the same level of human connection as in person to person therapy. This way of non- traditional therapy is not being effective on the patients, who are suffering from social isolation and loneliness as well particularly more chronic mental health disorders. It promotes more screen time, which could have a negative effect on mental health.

Review of Literature:

Unicef, 2018 and World Health Organization, 2020 reported that more than 70% of young people use digital devices, but the mental health problems remain under-diagnosed and under-treated. Kaushik et al., 2016; Freemanetal.,2022 quotes that DMHIs could provide excellent opportunities to expand access to diagnostic and intervention services, as well as to improve empowerment, participation, help-seeking, and essential resources to address the stigma associated with mental health. Neguțetal.,2016; Aboujaoudeetal., 2020; Voinescuetal.,2021 found in their research that mobile based digital health Inventories (DMHI),virtual reality (VR), web based health care service so offer tremendous potential to promote mental health and well-being across arrange of age groups. In addition, interventions designed to enhance psychological well-being may less the negative consequences of the COVID-19 epidemic (DeKocketal., 2022). Several investigations during the COVID-19 epidemic in the community showed a strong negative correlation between psychological well-being and anxiety, despair, and distress (see meta-analysis, Salarietal., 2020). DMHIs may improve accessibility, can bridge social gaps, and allow users to login anonymously whenever they want (Sorkinetal., 2021). A study conducted by Summers et al's, 2021 describing that these digital interventions are more effective on depression and anxiety. Digital mental health technologies are working either on improving general mental health and emotional well-being or addressing specific conditions. A study conducted on the effectiveness of clinician-guided internet-based Cognitive Behavioral Therapy (iCBT) programme and result showed the improving symptoms of depression, anxiety, psychological distress and functional impairment among outpatients with depression in a psychiatric hospital in Singapore by Lu et al., 2020. A review by Kreuze et al., 2016 identified that these digital mental health technologies effective on the suicidal preventions for the people, who are suffering from suicidal thoughts. Firth et al. suggested in a study to focus on face to face psychological care and therapy.

Conclusion & Suggestions:

It is true that digital mental health technologies have moved mental health care to a higher level of effective, affordable and accessible treatment options for the help seeker peoples. The review is needed because we were only able to locate a few review of literature with the related issue. It is suggested that there are several important issues to consider while developing such digital mental health inventories or technologies that aim would be to decrease or reduce psychological distress and disorders. It had been evaluated through the literature review is to increase patient's motivations, engagement, considering cost, ease to access the inventories with presence of traditional person to person therapy. There are also needs to be better effectiveness like converge pattern-based and evidence-based therapy system, preventive strategies, process of human centered design and development of self guided tools.

References:

1. De Kock, J.H., Latham H.A., Cowden R.G. (2022). The mental health care of health workers during the COVID-19 pandemic: a narrative view. Curr. OPIN. Psychiatry 35, 311-316. 10.1097/YCO.0000000000000805 [PUBMED] [CROSSREF] [GOOGLE SCHOLAR]
2. Firth J., Torous J., Nicholas J., Carney R., Rosenbaum S., Sarris J. (2017). Can smartphone mental health interventions reduce symptoms of anxiety? A meta-analysis of randomized controlled trials. J. Affect. Disord. 2017;**218**:15–22. doi: 10.1016/j.jad.2017.04.046. [PubMed] [CrossRef] [Google Scholar]
3. Janet Loebach, Kate Tilleczek, Brent Chaisson & Brian Sharp (2019): Keyboard warriors? Visualising technology and well-being with, for and by indigenous youth through digital stories, Visual Studies, DOI: 10.1080/1472586X.2019.1691050
4. Kreuze E., Jenkins C., Gregoski M., York J., Mueller M., Lamis D.A., Ruggiero K.J. Technology-enhanced suicide prevention interventions: A systematic review. J. Telemed.

Telecare. 2016;**23**:605–617. doi: 10.1177/1357633X16657928. [PubMed] [CrossRef] [Google Scholar]

5. Lustgarton, S.D., Garrison, Y.L., Sinnard, M.D., and Flyn, A.W., (2020). Digital privacy in mental healthcare: current issues and recommendations for technology use. Curr. Opin. Psychol 36, 25-31. Doi: 10.106/j.copsyc.2020.03.012

6. Summers C, Wu P, Taylor AJG., (2015). Supporting Mental Health during the COVID-19 pandemic using a Digital Behavior Change intervention: an Open-Label, Single-Arm, Pre-Post intervention study. JMIR Form Res. 2021;**5**(10):e31273. doi: 10.2196/31273. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

7. Wind TR, Rijkeboer M, Andersson G, Riper H. (2020). The COVID-19 pandemic: the 'black swan' for mental health care and a turning point for e-health. Internet Interventions. 2020:20:100317. doi: 10.1016/j.invent.2020.100317.

8. [PMCfree rticle] [PubMed] [CrossRef] [Google Scholar]

9. Veit, C. T., & Ware, J. E. (1983). Mental Health Inventory (MHI) [Database record]. APA PsycTests. https://doi.org/10.1037/t02354-000

10.   * The paper presented in the International Conference on Advancement in Science, Engineering and Technology (ICASET), 2023 on 29th & 30th September 2023 organized by Vidya Vihar Institute of Technology, Purnea, Bihar, India and RSP Conference Hub, Coimbatore, Tamilnadu, India.