Information and Communication Technology for Mental Health:
A Systematic Literature Review

Shrutika Namle
Griffith University, Australia

Amir Hossein Ghapanchi
Griffith University, Australia

Alireza Amrollahi
Griffith University, Australia

INTRODUCTION

Information and Communication technology (ICT) is the tool of choice for a range of problems that exist around us. On the other hand, "health care is described as a complex, often cumbersome mix of community and hospital – based services, provided by a bewildering array of health professionals located in public and private facilities and organizations across the country"(Whetton, 2005). The need to manage the surge of expectations gives rise to the use of ICT in health care (Whetton, 2005). Gradually, the adoption of ICT in the various clinical departments of health has taken strength. There has been a reasonable amount of improvement since then.

There is an abundance of research available about the use of ICT in mental health. Literature demonstrates that ICT has been used for a variety of purposes in mental health. Mental health is an umbrella term covering a vast number of disorders and diseases. Also, technology has a wide range covering the simplest telephone to the most advanced smartphone and the simplest computer to the super computers that we have today. Due to the above variability, abundance of information and data is available on the use of ICT in mental health. However, there is no uniformity of the studies and of the data that is available. Thus, this systematic review on the various information and communication technologies associated with mental health is necessary in order to summarize the vast amount of literature available. The study aims to establish the effectiveness of the information and communication technologies used in the field of mental health. It will clarify what particular technologies are more commonly utilized to achieve various outcomes in mental health. Also, it will highlight what types of mental health problems could be better targeted, with the help of information and communication technology. The study will point out the areas which lack adequate research and would prove to be a good starting point for further studies. The following questions have been addressed in the study:

RQ1: What different types of information and communication technologies have been used for different types of mental health problems?
RQ2: Which mental disorders have been targeted for treatment with ICT?
RQ3: For which purposes ICT have been used in mental health area?

The remainder of this paper is organized as follows. Section 2 gives an overview of the literature. Section 3 describes the methodology used for conducting the literature review. Section 4 illustrates the results of the systematic literature review. We discuss the results of the study in Section 5 and provide some recommendations for future research.

BACKGROUND

Mental Health

Mental health disorder consists of a range of diseases including psychotic illnesses and other disorders, eating disorders and personality disorders. The scope of mental health is not well defined and there is a thin line between mental disorders and brain disorders. Mental health does not depend on clinical biomarkers but on a cluster of symptoms for the diagnosis of a condition unlike the other physical conditions. The mental disorders are currently classified by the Diagnostic and Statistical Manual of Mental Disorders, (DSM) (APA, 1980), currently in its fourth edition, and the International Classification of Disease (ICD) (WHO, 1992)

The nature of mental health disorders is such that these disorders co-exist and are inter-related with other mental disorders or physical disorders.(AIHW, 2010) This involves multiple health interactions at the different levels in the health care system. This requires for an accelerated system of information and communication management to ensure a proper and coordinated system for delivering health care services. Thus, technology plays a crucial role by enhancing communication paths in this respect (Cleary et al., 2008).

Mental health in Australia is one of the seven National health Priority areas, which concentrate on diseases causing the highest morbidity and mortality in the country. The proportion of mental health patients has been increasing steadily from 2001 to 2011- 2012 ("Australia's Health 2012," 2012).

The Global burden of disease study, 2010 states that depression, anxiety and substance use accounts for one quarter of years lived adjusted to disability (GBD, 2010). Mental health problems are a leading cause of disability in Australia. Over 27.3% of the people receiving disability- support pensions have a psychiatric or psychological disorder (AIHW, 2010). According to the ABS 2003 report, the prevalence of psychiatric disability was 5.2% of the Australian population (AIHW, 2010).

A broad range of medical and rehabilitative services are available for the mental disorders. These include hospitals, residential care units, hospital out–patient units, general practitioners and community health care services (Ghanbarzadeh et al., 2014). The amount of psychiatrists working in Australia during 2011, were 2813 and mental health nurses amounted to 17,916. The total amount of subsidized mental health medications accounted for 11.2% of the total subsidized medications (AIHW, 2013b).

Literature suggests that there has been a higher prevalence of mental health illness in the rural areas due to socio-economic conditions, harsher climatic conditions, social environment and isolation (Morrissey and Reser, 2007).

There are certain underserved communities that are unable to reap the benefits of the mental health services provided. These communities include veterans and prison inmates. The prison health census suggests that almost one third of the prison entrants were reported to be suffering from a mental health problem (AIHW, 2010).

In Australia, at least $28.6 billion dollars per year, excluding the capital expenditure, is spent on supporting people with mental health. This $28.6 billion occupies 2.2% of the Gross Domestic Product

Related Content

Mathematical Models for Computer Virus: Computer Virus Epidemiology
Stelios Zimeras (2019). *Mobile Health Applications for Quality Healthcare Delivery (pp. 203-212).*
www.irma-international.org/chapter/mathematical-models-for-computer-virus/219860

Investigation on Identification of Three-Compartment Model for the Benchmark Pharmacokinetic System
V. Sujathaand Alex Khang (2024). *Driving Smart Medical Diagnosis Through AI-Powered Technologies and Applications (pp. 198-206).*
www.irma-international.org/chapter/investigation-on-identification-of-three-compartment-model-for-the-benchmark-pharmacokinetic-system/340368

A survey of unsupervised learning in medical image registration
(2022). *International Journal of Health Systems and Translational Medicine (pp. 0-0).*
www.irma-international.org/article//282677

Unveiling the Future: Blockchain-Powered Digital Twins for Personalized Privacy Preservation in Metaverse Healthcare Data
Rita Komalasari (2024). *Innovations, Securities, and Case Studies Across Healthcare, Business, and Technology (pp. 321-342).*
www.irma-international.org/chapter/unveiling-the-future/336898

Exploring Organizational Behavior and Workplace Diversity in Healthcare
Amalisha S. Sabie-Aridi, Darrell Norman Burrelland Kevin Richardson (2022). *International Journal of Health Systems and Translational Medicine (pp. 1-13).*
www.irma-international.org/article/exploring-organizational-behavior-and-workplace-diversity-in-healthcare/306970