Exploring the role of e-mental health services in Canadian mental health care: A Review

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Abstract

Barriers to conventional treatments for mental health concerns in Canada posit the emergence of information and communications technology (ICT) as a means of providing mental health care; this is widely referred to as e-mental health care. Such platforms currently provide a myriad of mental health services in four broad categories: information dissemination, screening and assessment, intervention and peer support. Coupled with further research, careful consideration of e-mental health models in other countries and current barriers can be used to refine pre-existing e-therapy approaches.

Introduction

An emerging body of evidence implicates the use of digitized and Internet-based interfaces to address mental health concerns. In recent years, e-mental health services have garnered increased speculation to meet the escalating onset of mental health issues, in addition to the increasing demands for localized and easily accessible interventions (Reynolds, Griffiths, Cunningham, Bennett & Bennett, 2015). Although a uniform and unanimous definition does not yet exist, e-mental health can be most accurately described as a broad, umbrella term encompassing a range of information and communication technology (ICT) based interventions (Mental Health Commission of Canada, 2014). ICT refers to media that enable communication and information exchange; it includes the Internet, wireless networks and mobile devices, among others (Mental Health Commission of Canada, 2014). Specifically, e-mental health services can be delivered through a large array of technologies such as e-mails, web-platform, websites, social media, instant messaging, cell phones, virtual realities, video-conferencing, and games (Wozney et al., 2017).

It is estimated that mood disorders, anxiety disorders, schizophrenia, attention deficit/hyperactive disorder (ADHD), conduct disorders, oppositional defiant disorders (ODD), substance use disorders, or dementia will impact 20% of Canadians every year (Hind, Sibbald, 2015). However, only 33% of these individuals receive appropriate treatment (Hind & Sibbald, 2015). In fact, in 2013, Statistics Canada reported that 500,000 Canadians miss work due to a mental health concern (Bradeley & Wang, 2017). It is also important to note that this figure does not encompass the individuals who are unemployed due to their mental health, and others who simply call in sick because they do not feel comfortable explaining the real mental health concern (Bradeley & Wang, 2017). By the year 2041, mental health issues are predicted to negatively impact the quality of lives for over 8.9 million Canadians (Hind & Sibbald, 2015). Moreover, many studies have established several barriers associated with face-to-face treatment for certain geographic, ethnic and low socioeconomic populations. Advancements in technology have opened doors to e-mental health care, allowing effective interaction and engagement between individuals deprived of such services and their health care providers (Mental Health Commission of Canada, 2014). Examples of technologies that permit such accessible mental health interactions include e-health records, telemedicine, web based screening, videoconferencing and online training (Mental Health Commission of Canada, 2014). The increasing role of technology in the lives of Canadians further validates the use of information and communication technology (ICT) to facilitate e-mental health care delivery (Mental Health Commission of Canada, 2014). Today, of the 22 million Canadians that use mobile devices,

62% are smartphone users (Mental Health Commission of Canada, 2014); this further validates the use of information and ICT as a viable and effective medium to facilitate e-mental health care delivery.

Currently, e-mental health models are mainly used for adult populations suffering from depression and anxiety. Such services facilitate knowledge dissemination, assessment and screening, interventions and peer support (Las & Adair, 2014). Countries such as Norway and Sweden have already implemented Internet-based mental health services through websites created by the general public, professionals, or voluntary organizations for issues ranging from emotional, cognitive, and/or relational problems to addiction and abuse (Andersen & Svensson, 2013). Other countries such as Australia have also utilized e-mental health services as an intervention strategy for Australians experiencing mental illness (Australian Government, 2012). One of its most prominent e-mental services includes "eheadspace," a youth-focused telephone and online counselling service for individuals between the ages of 12 to 25 (Australian Government, 2012). Australia also piloted "Virtual Clinic", an online national counselling service offering physician prescribed self-help courses to alleviate mild to moderate symptoms of anxiety and depression (Australian Government, 2012). Additionally, Australia recently established an e-mental health portal that acts as a search tool to provide users with a plethora of information and resources regarding various conditions, as well as online and crisis support services (Australian Government, 2012). Moreover, the National Institute for Health and Care Excellence (NICE) guidelines at the United Kingdom have recently commended the use of computerized cognitive behaviour therapy (CBT) as a first-line treatment for individuals afflicted with mild to moderate depression (National Institute for Health and Clinical Excellence, 2005). Furthermore, a study was conducted in Spain to evaluate an ecological momentary assessment web application known as MEmind (Bonal, Barrigon, Carballo & Baca-Garcia, 2016). The application was presented to 13883 patients, however, it was actually utilized by 2842 patients (Bonal, Barrigon, Carballo & Baca-Garcia, 2016). Women, young individuals, and those with neurotic disorders are the main populations that used MEmind (Bonal, Barrigon, Carballo & Baca-Garcia, 2016). Strategic planning for the implementation of e-Mental Health has also commenced in the United States as a means of providing e-therapy for substance abuse (Mental Health Commission of Canada, 2014). The success of e-mental platforms in Norway, Sweden, Australia, and the United Kingdom serves provides compelling evidence for the provision of e-mental health services in developed countries such as Canada; both as an alternate mode of therapy and as an adjuvant to pre-existing treatment regimes.

Types/Overall Structure

Delivery of e-mental health care can be classified into one of two broad categories: knowledge dissemination and the use of specific technologies to augment or better facilitate interventions, diagnosis and monitor prognosis (Las & Adair, 2014). Provision of mental health information allows for empowerment via better articulation of one's needs, as health care providers are no longer perceived as the sole resource for acquiring a comprehensive understanding of one's conditions (Mental Health Commission of Canada, 2014). For instance, online platforms such as www.whatworks4u.org allow users to share personal thoughts and experiences regarding the efficacy of specific treatment options (Mental Health Commission of Canada, 2014). Such platforms allow for individuals to play an active role in determining their treatment regimes, and thus serve a crucial step towards patient centered and culturally contextualized care (Mental Health Commission of Canada, 2014).

Specific technologies refer to a broad group of services and applications that directly provide e-mental health care (Mental Health Commission of Canada, 2014). Smartphone applications are emerging as a novel means of e-mental health care due to positive experiences by patients and doctors and willingness to use (Hind & Sibbald, 2015). Coupled with the increasing accessibility of mobile devices by younger generations, such interventions are especially effective for youth populations, as they have an increased likelihood of being affected by mental health concerns (Hind & Sibbald, 2015). Examples of mental health applications include PTSD Coach, which allows users to access information about PTSD, coping mechanisms, or track their symptoms (Anthes, 2016). Other apps include FOCUS for assessing the moods of schizophrenic individuals, ClinTouch for informing a clinical care team if an individual is experiencing relapse, and Ginger.io, which connects users with

a mental-health coach and monitors their regular activity, notifying them if there is an alarming change in their patterns (Anthes, 2016).

Computerized interventions consist of text based and video modules to deliver cognitive behaviour therapy sessions (Mental Health Commission of Canada, 2014). MoodGym and Beating the Blues are two web based platforms that deliver such e-mental health care (Mental Health Commission of Canada, 2014). Websites are also another medium that effectively addresses mental healthcare needs. One example is a Canadian website, eMentalHealth.ca, which provides information about mental health services such as nearby organizations catering to the individual's needs, information sheets, screening tools, mental health events, latest mental health news, as well as ongoing research studies on mental health (eMentalHealth.ca). Wearable gadgets that detect fluctuations in baseline physiological measurements and lifestyle trends are also increasingly being used to ensure recovery symptoms and report relapse signatures.2 Quantitative data conveying electrocardiograms, sleep patterns, diet and exercise patterns as well as light sensitivity as a predictor of mood is currently used within the geriatric population (Mental Health Commission of Canada, 2014). Virtual reality e-mental health care interventions consist of 3D online environments that allow users to navigate real life scenarios and situations (Mental Health Commission of Canada, 2014). Additionally, such models are useful in stimulating environments that may be difficult to replicate in real life; for instance, war field environments for the treatment of soldiers afflicted with PTSD (Mental Health Commission of Canada, 2014). Peer support e-mental networks utilize crowdsourcing to allow for anonymous, peer to peer support (Mental Health Commission of Canada, 2014). For example, Big White Wall specifically addresses individuals afflicted with psychological distress by allowing for peer-to-peer interactions via webcam, audio and instant messaging (Mental Health Commission of Canada, 2014). This allows individuals going through similar conditions to engage in mutual support and share experiences (Mental Health Commission of Canada, 2014).

Robots that mimic animal behaviour and 'health bots' are the two types of robots used as therapeutics for mental health concerns (Mental Health Commission of Canada, 2014). The former plays a large role in palliation and facilitating relaxation, as such technologies incorporate/administer the documented therapeutic effects of animal therapy (Filan & Llewellyn, 2006). Health Bots refer to a larger class of robots that perform pre-programmed structured tasks such as delivery of speech therapies, reminding patients to take medications, as well as assisting individuals with memory and speech impairments (Mental Health Commission of Canada, 2014). Gaming, as a mental health intervention, prompts the development of cognitive behavioral skills, self-awareness and ability to address undesired thoughts and situations (Mental Health Commission of Canada, 2014). The widely popular, Sparx (www.sparx.org.nz), provides such therapeutic potential by prompting users to combat negative automatic thoughts (NAT) and overcome problematic situations, as part of their quest on an imaginary island (Mental Health Commission of Canada, 2014).

Advantages and Disadvantages

Overall, e-mental health services offer many advantages to individuals seeking treatment; both in comparison to conventional face-to-face treatment and as an adjuvant to pre-existing regimes. The anonymous nature of such therapies allows individuals who fear social interaction to seek support without judgement (Chan, Farrer, Gulliver, Bennett & Griffiths, 2016). Anonymity may also allow individuals otherwise hindered by cultural beliefs to receive support (Chan et al., 2016). Moreover, the form of therapy curtails the temporal and geographic barriers such as meeting specific business hours and travelling large distances to receive treatment (Chan et al., 2016; Choi, Sharpe, Lee & Hunt, 2013). Furthermore, this allows individuals to overcome financial barriers, due to a reduction in transportation costs and the significantly lower costs associated with online therapy (Chan et al., 2016). Additionally, on a macroscopic scale, e-mental health services are cost effective and feasible in terms of delivery to a large population (Chan et al., 2016; The Royal Australian College of General Practitioners, 2015). Furthermore, in comparison to the average waiting time of 20 weeks to see a psychiatrist upon referral, the low waiting times of e-mental health services address mental health concerns in an efficient and timely manner (The Royal Australian College of General Practitioners, 2015; Barua & Ren, 2016). This also allows professionals to allocate their time and resources to individuals with a

severe mental illness, for whom e-mental health care is not a viable option (The Royal Australian College of General Practitioners, 2015; Barua & Ren, 2016). Consequently, this may also be advantageous to individuals suffering from physical incapacity or anxiety (The Royal Australian College of General Practitioners, 2015).

However, e-mental health services also pose many barriers to effectively meet the mental health care needs of its designated population. For instance, individuals with brain injuries and loss of motor control may lack the ability to use such services (The Royal Australian College of General Practitioners, 2015). In fact, a study revealed that adults with a chronic mental illness were less likely to have access to an Internet connection (The Royal Australian College of General Practitioners, 2015). The lack of confidentiality and privacy that may be associated with computerized health records is also a common concern (Chan et al., 2016). Difficulty in accessing the large amounts of information available online, as well as ensuring its quality and accuracy is a valid concern regarding e-mental health services that facilitate knowledge dissemination (Chan et al., 2016). Furthermore, current e-mental interventions do not address attrition related to such services, as a result of drop-outs and lack of follow-ups (Chan et al., 2016). Moreover, an online medium of expression may not allow individuals to reveal underlying emotions in a wholesome manner (Chan et al., 2016). Acceptability of e-mental health interventions is also a major barrier, as several studies reveal that many individuals prefer in-person mental health care (Chan et al., 2016). This may be due to the novelty of e-mental health care models, and the lack of knowledge regarding the effectiveness of such services (Chan et al., 2016).

FUTURE DIRECTIONS

As evident, e-mental health care has vast implications for transforming mental health care delivery in Canada. Future research should be targeted towards developing methods to integrate e-mental health care into the pre-existing therapies (Mental Health Commission of Canada, 2014). Additional randomized controlled trials and comparison trials with face-to-face therapeutics should be conducted to further validate its therapeutic potential, as the current evidence is sparse. These trials will also serve as further evaluations to confirm whether or not the benefits outweigh the disadvantages of e-men-

tal health care. Novel lines of investigation should also explore its effectiveness within various demographics, delivering culturally contextualized care, and its ability to prevent attrition rates. Furthermore, studies should be directed towards catering e-mental health care approaches towards individuals lacking accessibility to required technology and further expanding this model to third-world countries. Additionally, strict guidelines should be established to prevent concerns relating to ethics, patient confidentiality, and legal issues (Mental Health Commission of Canada, 2014). Lastly, because e-mental health is one branch of e-health services, future studies should evaluate the use of technology in specialties outside mental well-being such as physical and social well-being (Mental Health Commission of Canada, 2014). Examples of such services can include the introduction of e-fitness to promote a healthy lifestyle, and e-care, which would provide individuals with online access to medical professionals for health assessment and information about their medications. Given the fast-paced rise in technology and the number of Canadians that are utilizing such technologies, the reviewed advantages of e-therapy support the development of a novel nationwide strategy to address mental health care, as well as other categories of e-health.

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