E-mental health in the management of depression

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Abstract

Aside from "traditional" and well-known approaches in the assessment and treatment of depression, both clinicians and patients are facing an increasing number of innovative solutions resulting from developments in technology. Since 1959, telepsychiatry has paved the way for current achievements in the provision of mental health care in remote areas. The rapid development of the internet and mobile devices, such as mobile phones and tablet computers, has allowed new solutions to emerge, capable of increasing accessibility and quality of care. Relevant qualified mental health care is not always best provided in person. Video-conferencing, mobile mental health applications and web-based solutions are changing early detection, prevention, assessment and treatment of various mental health conditions, including depression. Promotion of mental health and psychoeducation through the increasing use of telecommunications technology should help in the fight against stigma as professionals in health care accept and adopt the new approaches offered by this technology.

Keywords: e-mental health, telepsychiatry, apps, internet, web-based solutions, mobile devices, general practice

Introduction

E-mental health (eMH) is the use of telecommunication and information technologies to deliver mental health services at a distance (1). eMH interventions have a number of advantages: they are easily accessible, provide anonymity to the user and are less expensive than personal patient-provider contacts (2). Different options enable a variety of approaches including, for example: direct remote audio-video contact between the patient and the clinician; web-based approaches where the patient is working with, for example, cognitive behaviour therapy (CBT) schema at home with low professional support; psychoeducation where no professional support might be necessary; use of mobile apps where no professional support is required; self-help and prevention services with or without professional support; or a combination of these approaches.

Telepsychiatry in general practice

The majority of depressed patients should be treated within general practice (GP). However, general practitioners are not always able to recognize, assess and/or treat various types of depressive conditions. The use of telecommunication technology is capable of increasing competence, collaboration and supervision of general practitioners. Synchronous telepsychiatry (ST) is the most described and evidence-based form of eMH. Patient and doctor can see and hear each other, and interact regardless the distance (videoconference in real time). Research studies have demonstrated that ST is capable of providing mental health care equal to in-person treatment for various mental health conditions, including depression, in at least some cases (3-8). A particularly interesting approach has been developed in Denmark since 2010: the telepsychiatry "shared care" model. GP clinics in the outskirt areas of Denmark have been connected with the Little Prince Treatment Centre in Copenhagen. The centre has telepsychiatry-based cross-cultural expertise more than others in Europe (9). The centre is specialized in videoconference-based psychiatric treatment of ethnic minorities where affiliated clinicians are bilingual, culturally competent mental health professionals. This means that, for example, depressive patients with limited Danish language proficiency may be "remotely" assessed and/or treated by bilingual clinicians via telepsychiatry, with no need for interpreters. Nevertheless, the Danish patient population do also have the possibility to "meet the psychi-

atrist or psychologist" via videoconference while the patient physically is located at the GP clinic. Further advantages of the telepsychiatry-based "shared-care" model is supervision of general practitioners and staff members at the GP clinic as well as psychoeducation of caregivers (family members of the patient).

Web-based solutions

The internet offers new and attractive methods for delivering interventions such as CBT on a large scale at relatively low costs. Web-based approaches are easily accessible and require the minimum of professional clinical support. Web-based CBT (ICBT) depression treatment developed in Sweden and The Netherlands requires low clinical support by enabling the patient to work on cognitive schema via a respective web-site. Both CBT and psychoeducation delivered via the internet are effective in reducing symptoms of depression (10). When used correctly, web-based interventions produce treatment effects similar to those observed in face-to-face treatment (11-16).

"Remote" psychoeducation aimed at enhancing mental health literacy and encouraging help-seeking attitudes is important in fighting against stigma and indirectly improves the treatment of depression as well. Online social media (e.g. facebook, twitter, etc.) are used in order to provide mental health promotion campaigns and to conduct evaluative research (17).

Mobile applications

Some web-based treatment solutions can be "translated" into mobile applications (apps). Mobile phones enable the patients to follow treatment modules that are shortened versions of the modules available via the web. Apps can be used to monitor the patient's progress, for example medication adherence and symptom monitoring. App developers have been able to tap some of the techniques of CBT and translate them into useful mobile applications. The current rapid growth in the use of mobile phone apps provides the opportunity to increase access to relevant care.

Accurate reporting of patient symptoms is critical for diagnosis and therapeutic monitoring in psychiatry. Smartphones offer an accessible, low-cost means to collect patient symptoms in real time and to aid in care. Data collected through an app may potentially be both more sensitive to the symptoms of a major depressive disorder and better able to detect suicidal ideation. Digital monitoring of symptoms seems to be feasible and provides an engaging, real-time, and low-cost supplement to more traditional methods aimed at the maintenance of mental health (18).

Mental health apps have the potential to improve treatment accessibility and efficacy with very limited or no support from the clinicians. This approach is particularly interesting for policy makers in view of the potential economic and resource-related benefits. The World Health Organization (WHO) has stated that mobile technologies have "potential to transform the face of health service delivery across the globe" (19). However, there is still a lack of scientific evidence for their efficacy (20). Less than 1% of commercially available mental-health apps have been studied for their efficacy, including those developed in order to improve treatment of depressive symptomatology.

Apps in general practice

Within the European FP7 project, colleagues from The Netherlands and Sweden developed an ICT (information and communications technology) based system for use in primary care that aims to improve access as well as actual care delivery for depressed adults. Some of the useful innovations include: flexible self-help treatments for depression; automatic assessment of the patient using mobile phone and web-based communication; wearable biomedical sensor devices for monitoring activities and electrophysiological indicators; computational methods for reasoning about the state of a patient and the risk of relapse (reasoning engine); and a flexible system architecture for monitoring and supporting people using continuous observations and feedback via mobile phone and the web (21).

However, not every application is equally relevant or beneficial for each depressed patient. By identifying which predictors and moderators lead to beneficial outcomes, it should be possible to make an accurate selection of the best initial treatment for depressed individuals. Different eMH programs may be more beneficial for specific age groups. For example, for younger people, internet-delivered interpersonal psy-

chotherapy may be the preferred treatment choice, whereas older participants might derive more benefits from internet-delivered CBT programs (22).

Conclusion

eMH services have the capacity not only to overcome traditional geographical, attitudinal and financial barriers to access to care, but also to lower overall delivery costs and reduce demands on the clinical workforce. Clinicians should be made aware of the increasing potential of options that are becoming available through eMH. The aim will be to promote and use the telecommunication technology in mental health provision without compromising quality of care. However, it should be emphasised that eMH is not a substitute but a supplement to existing mental health services. Some patients will still prefer person-to-person clinical contact. Ethnic minorities with insufficient language proficiency might prefer remote contact via mother tongue rather than in-person contact via an interpreter. Autism-spectrum patients might prefer the intimacy of their own homes while speaking with the clinician via telepsychiatry as "home-telepsychiatry". Most young people are in daily communication via mobile devices and computers.

A reasonable combination of "traditional" and "technological" approaches will probably be the most effective way, in future, of dealing with a number of mental health conditions including depression. Access to relevant care, as well as circumventing stigma, is becoming easier due to technological development. Soon we may see a paradigm shift. Relevant and high-quality mental health care might not necessarily need to be provided in-person. The balance between such technological approaches and person-to-person care is changing. What the right balance will be in the future has yet to be determined.

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