Psychotherapy Using Electronic Media

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Introduction

Over recent decades, the upsurge in migration of immigrants, asylum seekers, and refugees has transformed most EU countries into multicultural societies. However, the transformation of mental health care had not followed these sociocultural changes. Improving the accessibility and availability of appropriate (psycho)therapeutic approaches is key in the establishment of effective care. Nevertheless, the structure, distribution, and costs of mental health care (including psychotherapy) make it unavailable for a significant proportion of the world's population, especially refugees, asylum seekers, and migrants [1].

Accessibility and availability may be significantly increased through the use of telecommunication technologies. e-Mental health (eMH) is the term that covers the use of telecommunications technologies in the provision of mental health services to individuals in communities that are underserved due to geographic, linguistical, and/or cultural isolation. The use of mobile devices such as an iPad, mobile phone, web-based applications, and conventional videoconference equipment is finding its place within assessment, (psychotherapeutic) treatment, (psycho-)education, and the monitoring of psychiatric patients. Telemedicine and Internet-enabled clinical systems are already widely available and are starting to have an impact on the doctor–patient relationship, and will increasingly do so in the future. Telemedicine consultations are now so common that they are undertaken on broadband Internet

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systems, and professionals from all areas of mental health (from psychiatrists, psychologists, marriage and family therapists to career counsellors) can now deliver therapy from a distance.

Across telemental health clinics, clients tend to present with the same concerns as seen in traditional clinic settings [2]. The choice of who will be provided such services depends on developmental and diagnostic considerations, reasons for seeking care, the patient's illnesses/disorders, and the therapist's comfort with the technology. This treatment option may cause participants to feel less self-conscious and lessen any confidentiality concerns, as the therapist is usually located outside of the local community. No category of patients has been excluded from mental health services over a distance, but adolescent patients may adapt particularly well. When we speak about participants/patients/clients in further text of this chapter, we also include refugees and migrants as e-MH applications enable remote contact/assessment/treatment via respective mother tongue as well as via interpreter if needed.

Remote (Psycho)Therapy

When telecommunication technologies are used in provision of psychotherapy, they may be referred to as e-therapy, e-psychotherapy, online-psychotherapy, telepsychology, web counselling, distance counselling, cyber-therapy, distance therapy, Internet therapy, web therapy, or even other terms. These experiences and/or services vary in many regard: (1) focus of education, support, and/or formal therapy; (2) individual vs. group participation; (3) synchronous vs. asynchronous interaction; and (4) participants as people, patients, caregivers, family/loved ones, and providers/clinicians across interdisciplinary teams. Most research has been based on patient satisfaction, psychotherapeutic interventions, and the therapeutic alliance comparing remote (videoconference based) and in-person delivery [3, 4]. This includes effectiveness with therapeutic types/formats, populations served, satisfaction, feasibility, and outcome data [5].

Types of Interventions/Treatments

Depending on which medium is in use, remote interventions may be divided as follows:

- Web-based intervention is a primarily self-guided intervention programme that is executed by means of a prescriptive online programme operated through a website and used by consumers seeking health- and mental-health related assistance [6]. An app-based intervention is essentially the same as a web-based intervention except that it is operated through a mobile phone application using phone memory and/or the Internet.
- The intervention programme itself attempts to create positive change and/or enhance knowledge, awareness, and understanding via the provision of sound health-related material and the use of interactive web-based components.

- On the basis of this broad and inclusive description of web-based interventions, three additional sub-categories have been delineated. These are: (1) web-based education interventions; (2) self-guided web-based therapeutic interventions; and (3) human-supported web-based therapeutic interventions. Although each of these categories aims to support or direct cognitive, emotional or behavioral change, they differ primarily with regard to their level of interactivity, support, structure, and directiveness [7].
    - Web-based educational resources are popular with the public, patients, and providers in order to access information, decide whether or not to seek advice/consultation with a professional, and seek self- or provider-directed treatments (e.g., cognitive behavioral therapy or telemental health care). Social networking has been defined as "web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" [8]. A meta-analysis shows that health behaviors change with this medium [9]. Young people with developmental challenges feel more comfortable receiving support anonymously or at a distance [10]. Patients migrate to sites such as PatientsLikeMe (http://www.patientslikeme.com/), a consumer-driven site where individuals log on to connect with others experiencing similar problems. Some use role-playing games (such as "Second Life") as an educational tool, which may improve understanding of psychotic symptoms (i.e., auditory and/or visual hallucinations) [11]. These patients use the Internet as a source of information about the illness and any potential side effects of medication, as well as in the hope of finding better medication with fewer side effects [12]. Anxiety or trauma patients (e.g., military personnel with PTSD) may also prefer the Internet or distance options [13].
    - Self-guided web-based therapeutic interventions are highly structured, derived from theory (e.g., CBT, interpersonal therapy), and modelled on standardized or manualized in-person psychological therapy [6]. The interventions also typically provide automatically generated feedback or a means by which people can monitor their progress as they complete stages of a programme. The main purpose of self-guided web-based therapeutic interventions is to support consumers to make cognitive, behavioral, and emotional change to address particular problems they experience. Self-guided web-based interventions have been developed for conditions such as mood disorders, anxiety, and insomnia, typically by a team of web-designers and consumer representatives led by psychologists within a university setting [7].
    - "Human-supported web-based therapeutic interventions" incorporate a human (usually a health/mental health professional or, in some cases, peer supporters) to provide support, guidance, and feedback" [6]. The human support complementing the web-based material can vary in terms of mode (i.e., video, e-mail, chat), frequency, and whether or not it is synchronous or asynchronous. Human-supported web-based therapeutic interventions differ from self-help web-based interventions and online counselling interventions by specifically combining the human support/feedback with the

self-help material. The feedback and guidance provided by the mental health professional is seen as an additional, active, and critical component of the programme tailored for people with moderate to severe levels of distress compared with self-help web-based interventions which support people with mild to moderate levels of distress.

- Online counselling and therapy refers to the provision of a psychological service directly between a psychologist and client via the Internet. The communication between psychologist and client can be through a variety of modes including e-mail, synchronous "chat," i.e., in real-time, video and/or phone services such as those mediated by a secure online video chat/conference service, and might be between individuals or shared within a group.
- When videoconference in real-time is in use, we speak about "synchronous telepsychiatry." The term "asynchronous telepsychiatry" or "store and forward model" covers the transmission of recorded clinical-related material, i.e., assessment, psychiatric interview/consultation between referring physicians and specialists. Telepsychiatry offers a useful alternative to psychotherapy provision when in-person therapy is not accessible. The most commonly studied type of video-conferenced psychotherapy was CBT.
- Internet-operated therapeutic software refers to "therapeutic software that uses advanced computer capabilities such as artificial intelligence principles for (a) robotic simulation of therapists providing dialogue-based therapy with patients, (b) rule-based expert systems, and (c) gaming and three-dimensional (3D) virtual environments" [6].
- Simulation of therapists through programmes such as "Eliza" (http://www.manifestation.com/neurotoys/eliza.php3) was developed originally as a test of the development and ability of artificial intelligence to simulate human interaction rather than to necessarily represent a genuine therapeutic interaction between a client and therapist.

Depending on the nature of the interaction between mental health professionals and consumers on the Internet, this interaction may be divided into four types. Two types of interaction take place entirely via the Internet, while the others combine Internet communication with in-person treatment.

1. e-Therapy—psychotherapists form ongoing helping relationships that take place solely via Internet communication.
2. Mental health advice—psychotherapists respond to one question in depth, again with communication taking place solely via Internet.
3. Adjunct services—psychotherapists use Internet communication to supplement traditional, in-person treatment.
4. Behavioral telehealth and telepsychiatry—mental health professionals (typically psychiatrists) use sophisticated videoconferencing systems to work with patients in remote locations, as an extension of traditional clinic or hospital care.

The Approach to Psychotherapy at a Distance

The intersection of the patient–clinician relationship with technology may impact the therapeutic frame, trust/safety issues, and expectations. The patient's requests, needs, and preferences among indicated clinical care options should be the clinician's first priority and s/he should consider technology or technologies based on the many factors that determine its suitability. The suitability of such technology—whether it is appropriate to assist in the process and whether it "fits" the circumstance—is a discussion which is held ideally at the beginning of an evaluation as part of the consent process (and at times, discussed before this by the clinician and/or her/his proxy e.g., telemedicine coordinator, staff) [14, 15]. The choice of technology is subsequently considered. The therapeutic frame also includes preparing for emergencies, for example, by gaining familiarity with the availability of community resources and emergency resources where the patient is located.

The clinician also explores with the patient how the use of technology may differ from in-person and/or use in a personal relationship: boundaries (e.g., whether they will use their personal or work e-mail, or not responding to e-mail messages at all hours of the day and night), privacy and confidentiality, the pros/cons specific to the technology selection and use of telecommunications, and therapeutic issues (such as not benefiting from the services provided or the option of calling instead of posting suicidal thoughts). Response to such interventions varies. Some sub-populations may be more comfortable with it than others: children in general report novelty, while those with significant behavioral/conduct/chemical dependency issues report feeling less stigmatization and anxious patients report less anxiety [16]. However, as within in-person therapy there will always be patients who are not motivated for treatment, having ongoing drug or alcohol abuse, etc. In such cases we may not expect better results via remote approaches.

Historically, communication via text and e-mail suffers from the phenomenon of "cluelessness" [17], which leads to a task-oriented focus where depersonalized content may occur [18]. These asynchronous technologies (e.g., text, e-mail, or social media posts) affect and require special effort to create telepresence as they do not include facial expressions and emotions [19]. Examples are eye contact, gestures, posture, fidgeting, nods, grins, smiles, frowns, and lip-reading [20].

Boundaries, technology, and clinical care are complex to manage, too, and clinicians must attend to boundaries with tele-behavioral health (TBH) technology-mediated options (e.g., video, e-mail, telephone, text messaging, apps) just as they do with in-person care [15]. Usually this means being in agreement on reasonable expectations, consistency, triaging concerns (e.g., suicidal thoughts in person or by phone rather than text), and professional responsiveness (e.g., not responding to an e-mail until the next day if received at 4.50 p.m. or after hours). For new technologies, though, this may include dealing with terms/symbols with multiple or ambiguous meanings (e.g., sentence/thought fragments, acronyms, emoticons). The use of text messaging and apps particularly affects boundary, privacy, and security issues, as participants may be disinhibited and overly responsive. The flow of conversation,

the impact of the medium, language, and culture (e.g., across time zones) may also shift communication. Creating and maintaining a distraction-free virtual environment is key, and here, there are two types of problem that may arise. First, there are the obvious things like avoiding interruptions due to the location (e.g., roommates or children around), telephone calls, noise, and positioning of equipment/devices—arranging this should be part of the consent process. As above, participants should not be multi-tasking with traffic while driving, typing notes on the computer, or checking their e-mail during a session. Preparation and ongoing fine-tuning of the environment are suggested. The second issue is that when care is provided at a distance such as in telepsychiatry, there is a multiplier effect of "little things"—non-ideal in-person components plus non-ideal technology plus "minor" distractions may negatively affect the ambience. The bottom line, again, should be a focus on the clinical objective(s) and therapeutic impact. Being overly responsive could be therapeutically negative and may not be appropriate for those already struggling with boundaries (i.e., those with personality traits and disorders) to create obstructive chaos. Indeed, those patients may need more literal education and clinicians should approach that care with caution, as such patients already require significant time and energy.

Historical Background

Remote communication between therapist and client is not a new concept. Sigmund Freud utilized letters extensively to communicate with his clients.

- Use of radio and TV in psychotherapy was described in the 1950s [21, 22].
- In 1959, the Nebraska Psychiatric Institute used early videoconferencing to provide group therapy, long-term therapy, consultation-liaison psychiatry, and medical student training at the Nebraska state hospital in Norfolk.
- Telephone sessions were pioneered in the 1960s with the advent of suicide hotlines, and have expanded to cover many areas of mental health counselling.
- In 1969, Massachusetts General Hospital provided psychiatric consultations for adults and children at the Logan International Airport health clinic. During the 1970s and 1980s this became increasingly common, expanding to most diagnostic and therapeutic interactions.
- By the 1990s, it spread further across the world, particularly in Australia, and research began on its ability to facilitate access to care, overcome geographical obstacles, and how it compared to in-person care.
- Within the EU, leading pioneer countries developing remote mental health services are Norway and England, who have been developing remote services since the early 1990s.
- Telepsychiatry has been tested and established on a small scale in Denmark since 2000, as well as in Sweden, Spain, and Greece within the last decade.
- One of the first demonstrations of mental health care via the Internet was a simulated psychotherapy session between computers at Stanford and UCLA during the International Conference on Computer Communication in October 1972.

- The earliest known organized service to provide mental health advice online was "Ask Uncle Ezra," a free service which has been offered to students of Cornell University in Ithaca, NY, since 1986.
- Fee-based mental health services offered to the public began to appear on the Internet in 1995. Most were of the "mental health advice" type, offering to answer one question for a small fee.
- Telepsychology was first described in 2000 [23, 24].
- Videoconferencing has also been used in supervision and psychoeducation [25].
- With the expansion of the Internet, a number of web-based services offering online therapy have enabled increased accessibility and availability of care, ranging from self-help groups and psychoeducation to ordinary therapy usually based on CBT principles.
- The use of mobile technology to support various aspects of health care delivery has been on the rise for more than a decade, and is now commonly referred to as "mobile health" or simply "mHealth" [26]. The first mobile software application ("app") became available for use in 2008 [27]. However, the usage of mobile phones to provide psychotherapeutic services is at a relatively early stage of evaluation.

e-Therapies are now recognized as an integral constituent of future health care solutions in Australia, the UK, and New Zealand, with such therapies also common in many other regions, including the USA and other parts of Europe [28, 29].

Building Bridges over Barriers

Psychotherapy enhances quality of life and promotes adaptive functioning. However, common obstacles such as long waiting lists [30], perceived social stigma [31], and high costs [32] may discourage many individuals with a psychiatric disorder from seeking relevant professional help. Internet-based interventions provided via use of mobile devices (i.e., smartphones, i-pads), computers, and/or stand-alone videoconference equipment offer potential solutions to these barriers. Immediately accessible and usually less costly, online interventions may offer a valuable alternative to in-person therapy. Therapeutic interventions provided via the Internet are often combined with individual and group interventions in person, but may also be used as a stand-alone psychological service. e-Mental health interventions, usually CBT based, are available and effective approaches in the treatment of various psychological health problems for majority of mental disorders [33, 34]. These are considered to be especially suited for offering early intervention after the experience of stressful life events that potentially trigger adjustment disorder [17, 35]; they are effective for panic disorder [36, 37], social phobia [38], depression [39–41], and substance misuse [42, 43].

The treatment of PTSD is particularly interesting for professionals who deal with cross-cultural populations, i.e., asylum seekers, refugees, and migrants. Studies on the use of e-mental health applications (e.g., telepsychiatry) in the assessment and/

or treatment of PTSD show a highly significant decrease in the symptoms of PTSD, depression, and anxiety [44]. Furthermore, quality of life was also higher at post-treatment [45]. Although telepsychiatry is the most researched and oldest of all e-mental health applications, it represents a novel and understudied mode of treatment in conflict zones. The use of telepsychiatry in the Syrian conflict presents a promising solution to addressing mental health needs in complex humanitarian emergencies [46]. In a study of veterans with PTSD which compared in-person to video-conferenced CBT, it was found that both groups improved and were satisfied. However, outcome data was lacking for many studies reported in the systematic review [47]; research using more rigorous methodology would therefore be useful in order to better understand the effectiveness of telepsychotherapy.

In addition, e-therapies have been identified as particularly suitable for use by marginalized populations [48, 49] such as persons living in rural areas [50] or members of the LGBT community [49]. When the only options are no therapy or therapy provided via interpreters, then individuals with limited language proficiencies (i.e., refugees, asylum seekers, and immigrants) tend to prefer a videoconference with clinicians who speak their language rather than therapy provided in person by someone who does not speak their language, via an interpreter [51].

Finally, while the majority of patients benefit from psychotherapeutic treatment, many fail to maintain their treatment gains following discharge. Technology-enhanced interventions such as Internet chat groups can be successful in preventing relapse following inpatient treatment [52] as well as offering transdiagnostic Internet-based maintenance treatment in combination with "treatment as usual", effectively enhancing the long-term outcomes of inpatient cognitive behavioral therapy [53].

Advantages vs. Disadvantages

e-Therapy utilizes the power and convenience of the Internet to allow synchronous and asynchronous communication between patient and therapist. e-Therapies are an attractive option because they are relatively cost-effective [54–58], accessible, and able to maintain user anonymity [54, 55, 58]. e-Interventions offer several advantages such as ease of use, independent of time and place at a self-determined pace, and low cost of delivery to large populations [34, 59]. Further, e-mental health has been associated with benefits such as anonymity and reduced barriers such as stigma.

A further advantage is the disinhibition effect, where people feel more comfortable opening up and discussing problems when they are online. It might be due to the fact that the client does not have to deal with social and non-verbal cues, embarrassment, shyness, and other behavioral barriers that can sometimes impede progress in a traditional counselling atmosphere.

The downside of remote contact is that there is less chance to develop a strong relationship with a therapist. Finally, it is important to underline that e-therapy is not an alternative treatment, but a resource that can be added to traditional psychotherapy.

In particular e-therapy can facilitate access for people:

- in remote locations;
- with specific cultural or language needs;
- seeking specific services that are not broadly available;
- who, by reason of psychological or other impairment, are unable to leave their homes;
- who have limited time availability for appointments;
- who prefer the convenience it provides; and
- for whom high levels of confidentiality or anonymity are important [60].

As services can be accessed online via a computer, smartphone, or tablet, digital mental health can be used for anyone who doesn't want to work in person with a therapist, or anyone who finds it difficult to leave their home (i.e., because of agoraphobia or social phobia). As talking therapies can often have long waiting lists, these services can be used while waiting for in-person services. Rather than replacing traditional services, e-mental health resources can offer support during these waiting times. Being online means that services can be offered to people in rural areas who may find it difficult to access services in person due to long distances. Online or blended approaches are likely to be cost-effective, and can possibly reduce the direct costs of treatment compared to treatment as usual.

Potential disadvantages related to remote therapy (especially non-videoconference provided) are the possible absence of verbal and non-verbal cues due to no in-person contact. The lack of visual cues may reduce a sense of accountability to one's conversational partner, as both parties can engage in other tasks without the other being able to see this occurring. Even for therapists, this can foster a sense of disconnectedness. Confidentiality could be breached (hacked) depending on level of connection and/or the security of the software programme used.

When using non-video media, there is a greater risk of misdiagnosis occurring. Therapist credibility might be questioned as anyone may offer an online service without necessarily being approved by the relevant municipality. If/when absolute anonymity remains, how is a quality service ensured? If a practitioner does not know where a client is, how can they call for help, such as suicidal threats? Psychotherapy at a distance precludes smelling alcohol on the patient's breath, as well as noticing auditory and visual subtleties such as a quiet sigh or dilated pupils. Micro-momentary facial expressions, implicated in unconscious interpersonal communication, may be overlooked.

iCBT

Research shows that online mental health interventions are as effective as traditional in-person therapy for disorders such as depression and anxiety [61–63] (e.g., CBT for panic disorder and agoraphobia) [63]. Based on a 30-month follow-up study for treatment of social phobia, research showed that the long-term effects of in-person

delivered cognitive behavior therapy (CBT) were comparable to the results of Internet-based treatment [62].

Internet-based CBT (iCBT) is most often used for patients with depression and anxiety. iCBT appears to be effective when delivered in clinical practice when guided by a qualified therapist [64, 65]. Results indicated that effect sizes and recovery rates were comparable to, or somewhat superior than, those observed in previous controlled trials, and similar to those of in-person CBT [66]. iCBT approaches may be unguided and/or guided and self-help interventions vary in terms of degrees of therapist contact [59] (e.g., people with PTSD symptoms benefit from a cognitive behavioral treatment provided entirely via the Internet [67], while depressive patients seem to need remote support in addition to in-person treatment). Some iCT may be combined with monitoring by text message (mobile cognitive therapy; mCT) with minimal therapist support (e-mail and telephone). Preliminary results indicate mCT as an acceptable and feasible approach to both patients and clinicians [68].

Mobile Health and Smartphone-Based Approaches

With improvements in design, methodology, and innovation, mobile phone-based psychotherapeutic applications technology have the potential to play an important role in transforming the healthcare delivery process. The emerging literature highlights the potential benefits, feasibility, and acceptability of the applications across a range of psychiatric conditions. However, effectiveness trials are scarce [69]. Nevertheless, the reviewed evidence provides hope that mobile phone technology will prove to be a useful adjunctive, if not a stand-alone treatment for psychotherapy in a broad range of mental health conditions, e.g., anxiety disorders [70–73], depression [74–76], bipolar disorders [77], substance use disorders [78–81], schizophrenia and psychotic disorders [82–86].

Specific target interventions show promising results [14]. One trial compared a brief mobile-based intervention to treatment as usual among suicide attempters and found significant reductions in suicidal ideations and depression in the mobile phone group [87]. Stress reduction programmes using a mobile phone app has attracted a large number of potential users and may economically impact a community [88]. Many of these have been adjusted so that various patient groups may benefit also via their mother tongue. "FearFighter" is a computer guided self-exposure approach to treat phobia/panic developed at the end of last century [89]. Exposure therapy may be effective for phobia/panic but qualified and trained therapist resources are scarce. Computer-guided approaches provide patient and clinician benefits by saving time and enhance health care efficiency [90].

Psychiatric apps support the drive towards more individualized medicine—rather than epidemiological and consensus-driven algorithms—and are supported more by informatics, laboratory medicine, and testing [14]. Mobile apps offer portability for care anytime, anywhere, regardless of patient geography and transportation barriers and represent an inexpensive option versus traditional desktop computers; they also

offer additional features (such as context-aware interventions and sensors) [91] with real-time feedback. Overall, psych apps are used for many functions, including to: (1) communicate with other patients, caregivers, social supports, or providers; (2) (smart) monitor, that is, use tools that automatically predict relapse behavior or worsening affective symptoms, through sensors and data activity; (3) to practice self-care by equipping patients with new ways to self-assess and reflect about their symptoms; (4) make learning more interactive than traditional paper homework; and (5) organize, track, and thus monitor long-term their activities, moods, and therapy homework [92, 93]. Patients often forget key events between visits, so logging real-time experiences helps with reporting of symptoms; this is known as ecological momentary assessment; (EMA) [94].

Psychometric measures such as the Patient Health Questionnaire (PHQ-9) and other military population measures have been found to have good reliability and validity, but soldiers have preferred using the iPhone rather than paper or computer due to its interface, portability, and convenience [95]. The US National Center for PTSD and the National Center for Telehealth and Technology have created an app called PTSD Coach [96]. The app features information on PTSD and treatments, tools for screening and tracking symptoms, tools to manage stress and direct links to support and help. While such apps are not designed to act as a substitute for treatment, this technology may become an important tool for managing and even initially detecting PTSD symptoms.

Virtual Reality

One of the applications that is being increasingly widely adopted and used for mental healthcare education and clinical purposes is virtual reality (VR) [97]. VR is the concept of being virtually but not physically at a specific place. Some VR platforms involve three-dimensional imaging and surround audio that make the user feel as if they are in the real world. The user can go or do certain things that might be difficult or impossible in real life. Virtual reality exposure therapy (VRET) is an extension of traditional exposure therapy. In a VRET treatment protocol, an individual is immersed in a virtual environment that allows for sensory exposure to the feared stimuli via computer-generated displays. It permits the individual to face their triggers in a safe environment and allows the therapist to control the intensity and duration of the stimuli, based on their clinical appraisal [98]. The environments can be tailored to represent the individual's fears as well as to recreate a traumatic experience, e.g., in the treatment of PTSD [99]. VRET is usually delivered via a head-mounted display, which tracks the users' head-movements and allows for real-time updating of the scenes they can see [100]. Initially designed for the treatment of phobias, the use of VR in behavioral disorders has expanded for other mental health conditions [101].

Systematic reviews of the studies of VR in mental disorders found that the main conditions investigated were anxiety disorders, schizophrenia, substance related disorders, and eating disorders [102]. Another review focusing specifically on the

potential use of VR in interventions for mental disorders [103] demonstrated that overall, VR has been shown to be superior to treatment as usual or waiting lists and as having similar efficacy as conventional CBT or in vivo exposure. Two different randomized, controlled trials [104, 105] have shown at 1-year follow-up that VR had a higher efficacy than the gold standard in treatment of eating disorders, i.e., CBT. The effectiveness of VRET is now well-established: four independent meta-analyses have concluded that such interventions lead to significant decreases in anxiety-related symptoms [106–109].

Prolonged exposure therapy, which has been proved to be highly efficacious in the treatment of PTSD, aims to access the traumatic memory, including information about the traumatic situation and related emotions, thoughts, and behaviors. It helps the patient to understand the context of the traumatic experience as well as its impact in the patient's life. It also enables the patient to achieve a realistic perspective on the traumatic event and its aftermath [110].

VRET can be particularly useful in the treatment of PTSD that is resistant to traditional exposure because it allows for greater engagement by the patient and, consequently, greater activation of the traumatic memory, which is necessary for the extinction of the conditioned fear. The sense of presence provided by a virtual environment that is rich in sensory stimuli facilitates the emotional processing of memories related to the experienced traumatic event [111]. Technology allows gradual exposure to the feared environment which can be tailored to the needs of each patient. Additionally, it can be used in situations where time is limited, as well as in situations that are difficult to control or unpredictable [112] or that could put the patient at risk if the exposure were performed in a real situation. Finally, exposure in a virtual reality environment allows for greater methodological rigor in clinical studies as it allows for the standardization of the duration and type of exposure for all patients [113].

Despite the fact that exposure therapy stimulates emotional engagement during imaginal exposure, some patients find it difficult to immerse themselves in the traumatic scene and, therefore, may quit the treatment. However, dropout rates do not seem to be lower than in traditional exposure treatment [114]. VRET proved to be as efficacious as exposure therapy.

Avatars are digital self-representations which enable individuals to interact with each other in computer-based virtual environments. They are increasingly being utilized to facilitate online communication between clients and therapists. As a flexible and creative platform, avatar technology holds significant potential to engage a broad range of clients in need of psychological support who may otherwise be unable or unwilling to participate in traditional treatment. In particular, avatars may foster the development of a strong virtual therapeutic alliance, overcome communication barriers experienced by individuals with various disabilities and mental disorders, offer an anonymous means of seeking treatment, and support clients to explore and extend their identity.

Several studies have utilized various forms of avatar technology to facilitate or augment treatments that are delivered with the in-person support of a therapist. Two models of these avatar-assisted therapies have been implemented: (1) applications

that require the client to "embody" or represent themselves as an avatar in order to participate in the therapy and (2) applications that do not require the client to embody an avatar, but rather require the client to interact with another avatar, be it the therapist or an "other."

Five psychotherapeutic key applications of avatars are identified (1) in the formation of online peer support communities; (2) replicating traditional modes of psychotherapy by using avatars as a vehicle to communicate within a wholly virtual environment; (3) using avatar technology to facilitate or augment face-to-face treatment; (4) as part of serious games; and (5) communication with an autonomous virtual therapist [80].

Across these applications, avatars appeared to serve several functions conducive to treatment engagement by (1) facilitating the development of a virtual therapeutic alliance; (2) reducing communication barriers; (3) promoting treatment-seeking through anonymity; (4) promoting expression and exploration of client identity; and (5) enabling therapists to control and manipulate treatment stimuli [115].

One of the leading more popular VR applications is Second Life (www.secondlife.com). It is a VR platform that is open to the public and can be accessed free of charge. Every user is given an avatar that can be customized to reflect one's own physical appearance or character. Avatars can walk, run, or fly from one island to another. Some can go shopping, visit museums, or even go on a date. It all depends on the user's preference and liking. Consequently, Second Life has strong potential to replicate models of individual and group-based treatments, but conducted entirely online, with both client and therapist interacting with each other in a virtual environment. To date, this model has been trialled in two uncontrolled studies using individual [116] and group formats [117]. Participants reported that they appreciated the convenience of being able to participate remotely in a virtual programme and also commented that the anonymity of participation made the intervention material more approachable.

Using Second Life, Kandalaft et al. [118] delivered a manualized social skills training programme to eight young adults with high-functioning autism spectrum disorder. During sessions, the therapist—represented as an avatar—directed participants to various virtual spaces (e.g., cafes, parks, shops) where they met with a confederate clinician—also represented as an avatar—to practice social interactions in diverse role-playing situations (e.g., attending a job interview). Clinician-administered neurocognitive measures of verbal and non-verbal emotional recognition significantly improved, suggesting that the programme may improve elements of social communication typically impaired in people with autism.

A novel component of (embodied) avatar use in online psychotherapeutic interventions is the capacity they provide for clients to express, experiment with, explore, and construct a virtual, visual representation of their identity and provide therapists with greater control over treatment stimuli that involve an element of exposure or skills training [115].

Virtual reality programmes/environments have been successfully developed and applied to treat, for example, specific phobias and other anxiety disorders. Therapeutic games, though primarily designed to have health, cognitive,

behavioral, or educational benefits, are also intended to be entertaining for the user. The games are often based on research findings and are generally designed for a specific target group (e.g., children with moderate to severe autism) or a broad (commercial) market. Many video games require that the player embodies an avatar to interact with other players or to interact with automated non-player characters. In "serious games," such game-like elements are incorporated into computerized psychotherapies to achieve a serious health-related goal (e.g., to reduce depression symptoms) [119].

Cross-Cultural Populations

Cross-cultural patient mental health-care demands a high standard of communication between the patient and the provider, since linguistic and other differences may influence it and consequently affect quality of care and satisfaction. Unfortunately, both access to relevant culture-appropriate care and availability thereof are often limited due to: (a) a shortage/lack of respective qualified resources; (b) linguistic, cultural, and even racial barriers to addressing the mental health care needs of cross-cultural patient populations.

Narratives from daily clinical work may significantly increase the understanding and acceptance of e-mental health among professionals with no e-mental health-related experience or professionals that are still in doubt, so we share the following story (Davor Mucic's case):

> NN is a 28-year-old female, refugee from my Bosnia-Herzegovina, ex-Yugoslavia (home country of DM). In Bosnia, during the war, NN was unfortunately raped several times while her husband was in the army. After immigrating to Denmark, NN was referred to a psychiatrist due to occurred posttraumatic stress disorder symptomatology. As her Danish language abilities were poor, the communication was provided via an interpreter. Consequently, she received psychiatric treatment with medication and psychotherapy via interpreter for around 3 years prior to our first telepsychiatry session. The video equipment was installed at psychiatric department where NN used to come and speak with her psychiatrist in-person. I was in Copenhagen while NN was located 245 km away in outskirts of Denmark. At the first consultation via telepsychiatry, the first question NN asked was, "Can all of Denmark see us now?"

> When assured that no one follows our conversation and that the session will not be recorded, NN replied, "Then I have a secret I would like to disclose" and so she started her story about traumatic events, i.e., rape and torture in home country. NN cried while spoke in a stream without a break except to wipe her tears and blow her nose. She said that it was not possible for her to speak about it with her past psychiatrist as all communication runs via the interpreter. The presence of the interpreter for her changed the dynamic of the interview and more tangibly, it increased the risk that her husband would find out about the rape and consequently divorce her.

> While NN spoke about her painful experiences, the Internet suddenly disconnected. When that happens, the last frame remains on the screen as a frozen picture. So NN could see me as a still image and I could see her frozen in the middle of a movement…and of course we could not hear each other. I panicked, thinking what she would say to this, or fearing that

she probably would never come again (i.e., use the video). My technician was in the office next door, so he restored the connection. The break varied about 30 seconds in total, but it felt like much longer. To my surprise, when the connection was restored, I could see and hear NN who spoke in a stream and cried at the same time. She didn't even notice that I was gone for a while.

Personally, it was an experience that shaped the next 15 years of dedicated work on developing of the "cross-cultural telepsychiatry concept", whereby the treatment of ethnic minorities de-emphasized use of interpreters. Further, we realized that telecommunication and information technology has the potential to increase the exchange of expertise across national borders without need for travel.

Perhaps the most significant changes in approach to culturally competent care over the past three decades are: (1) shifting from knowledge to skills as central to training; (2) moving from a specialized clinician based on a single culture (e.g., matching his/her own to training that provides flexibility/versatility to help many diverse populations); and (3) team-based collaboration across disciplines [120]. This work is shaped by many disciplines including cultural anthropology, psychology, social work, and other BH/social sciences. The gold standard for clinical care is linguistic, cultural, and racial concordance—but this requires training.

In all, eMH can play an enormous role both in leveraging mental health expertise around the world and in providing hope to patients in accessing healthcare. This is particularly important, since the boundaries of normality and pathology vary across cultures for specific types of behavior. Thresholds of tolerance for specific symptoms also vary across cultures, social settings, and families. A judgment of a behavior depends on norms internalized by individuals, family members, and clinicians. Mistaken interpretations may contribute to vulnerability, suffering, and missed opportunities for care. Traditions affect others' responses to mental illness, too, though some coping strategies may enhance resilience in response to illness, and increase access to care and patients' engagement of alternative care. Of course, differences between the clinician and patient have implications for accuracy, mutual understanding, acceptance of illness, treatment planning, and prognosis.

Stories are perhaps more important in the field of healing than in any other field, both in conveying abstract meaning (myths), moving people to change (politics), and teaching learners to apply knowledge and learn skills [121]. Stories are sometimes the only way to understand a patient's path and constitute a less hierarchical approach by facilitating a patient to tell his/her story in his/her own words.

It is a common practice to use "interpreters" on-site where the patient is, but family members, nurses, or untrained interpreters sometimes miscommunicate medical complaints [122] or de-emphasize information [123, 124]. In one study, primary care providers and staff rated the importance of valuing cultural differences and being able to speak (or use an interpreter). Enabling the conversation in the patient's primary language was rated at 5.4 on a Likert scale from 1 to 7 (not important to very important) [125]. Ratings of the importance of quality of care were at 4.9, access to care better with videoconferencing at 4.5, and the availability of a competent trained interpreter at 4.4 [125]. A subanalysis showed that those surveyed did

not think providers and patients must share the same ethnicity, culture, or language, but they thought more interpreters were needed. A review of the available scientific literature shows that the presence of a third person (i.e., an interpreter) in a confidential relationship (such as within psychotherapeutic treatment) affects patient satisfaction, as it influences both transference and countertransference between the individuals involved, with unavoidable consequences for the therapist–client relationship [119].

eMH applications offer new possibilities for reducing disparities in access to relevant mental health care to vulnerable patient groups, such as refugees, migrants, and asylum seekers worldwide. For asylum seekers, refugees, and migrants access to mental healthcare is a problem due to lack of clinicians who understand their language, culture, and special needs. It is well known that patients who do not speak the language of respective care providers report feeling discriminated against in clinical settings, whereas communicating with health professionals in a common language is associated with increased trust and confidence. That is probably why "ethnic matching" appears to be the most desirable model used in addressing language barriers and cultural disparities in mental healthcare provision. The use of eMH applications enables opportunities to build bridges over cultural and linguistic barriers by connecting patients with professionals that "match" culturally and linguistically [126].

The Little Prince Treatment Centre in Copenhagen, Denmark [127], was the first to use the medium of videoconference in order to connect patients with culturally competent bilingual clinicians, thereby side-stepping the need for interpreters (www.denlilleprins.org). Since then, different approaches have been described to deal with the specific needs of Hispanics/Latinos, Asians [128–132] and Native Americans [133, 134]. Patients report preferring to receive health care from a provider who speaks their native language rather than through interpretation, citing concerns about confidentiality and the accuracy of translations [135, 136]. The large majority of patients accepted the cross-cultural telepsychiatry model regardless of the type of service setting [135].

Only few international eMH services have been described so far: (1) Videoconferencing provided psychoanalytic clinical care and training to psychoanalytic candidates in China by US psychoanalysts, and this involved 40 psychoanalytic and 30 psychodynamic psychotherapies [137]; (2) The Little Prince Treatment Centre in Copenhagen connected bilingual clinicians from Sweden with non-native patients in Denmark in order to provide care (including psychotherapy) by professionals with cross-cultural skills, including clinicians who spoke Arabic, Polish, Kurdish, and ex-Yugoslavian languages [138].

Most European countries have established rehabilitation and research centers for torture victims providing assessment, medical and/or psychotherapeutic treatment mostly via interpreters. eMH mediated collaboration between the centers will enable the international exchange of expertise and enhance research in the field. Such a network could, by the use of various eMH applications, improve assessment and/or treatment of primarily asylum seekers, refugees, and migrants within the EU. National and international cross-cultural eMH services may contribute to reduce stigma and improve the quality of health care for these groups in their host countries.

Ethical Issues in Providing Online Psychotherapeutic Interventions

Online psychotherapy offers new ethical challenges for therapists interested in providing online psychotherapeutic services. The differences between interactive text-based communication and in-person verbal communication create new ethical challenges, and ones not previously encountered in face-to-face therapy. Ethical and legal issues in virtual environments are similar to those that occur in the in-person world. For example, individuals represented by an avatar have the same rights as any other individual and should be treated as such [139]. The American Psychological Association advises that psychologists " … take reasonable steps to ensure the competence of their work and to protect [participants] from harm" [140]. Consensus guidelines encourage transparency, dialogue with patients as part of the informed consent process, and discussion of the risks/benefits of therapy overall. Other treatment options—in the community or by travel—are discussed to encourage patient choice, although this is difficult when there are few local options.

A new tele-behavioral health (TBH) competency framework [15] includes the following domains: (1) Clinical Evaluation and Care; (2) Virtual Environment and Telepresence; (3) Technology; (4) Legal and Regulatory Issues; (5) Evidence-Based and Ethical Practice; (6) Mobile Health and Apps; and (7) Telepractice Development. There are three levels of competency (?)—novice, proficient, or authority. For the domain of Legal and Regulatory Issues, the four competencies are: (1) Adheres to TBH-relevant laws and regulations; (2) Practices in accordance with and educates others on adherence to TBH-relevant legal and regulatory requirements; (3) Applies/adapts in-person standards to TBH; and (4) Attends to TBH contextual and overarching jurisdictional issues in a reasonable fashion, with adaptations made for atypical practices that facilitate "good enough" care and attend to requirements [15].

Legal and regulatory issues affect TBH practice internationally. Using the USA as an example, this includes federal laws and benchmarks from regulatory agencies, related to privacy, confidentiality, data protection/integrity, and security (e.g., Health Insurance Portability and Accountability Act (HIPAA)), Health Information Technology for Economic and Clinical Health (HITECH), inter-jurisdictional practice and prescribing (e.g., Food and Drug Administration, the Ryan Haight Act). Likewise, state/provincial laws and regulations for TBH practice may be further defined, implemented, enforced, and interpreted (e.g., inter-jurisdictional practice). Again, in the USA, there are licensing boards for medicine, nursing, pharmacy, behavior analysis, counselling, marriage and family therapy, psychology, and social work. Relevant state/provincial and federal laws and regulations may also overlap.

Non-governmental regulatory requirements and recommendations from professional organizations, agencies, and other authorities in other countries may also apply to TBH practice. Examples of such entities include the Joint Commission, Council on Accreditation (COA), Commission on Accreditation of Rehabilitation Facilities (CARF), Utilisation Review Accreditation Commission (URAC),

American National Standards Institute (ANSI), and Healthcare Information and Management Systems Society (HIMSS) in the USA and according to other authorities in other countries.

Conclusion

The Internet is providing a bridge across some of the barriers that keeps people from getting the help they need. As psychotherapists have ventured into cyberspace, more and more people who would not otherwise have been helped are finding a path to healing. One may conclude that psychotherapy is on the verge of a technology-inspired revolution. The concurrent maturation of communication, signal processing, and machine learning technologies begs an earnest look at how these technologies may be used to improve the quality of psychotherapy. While research supporting the use of the Internet and other telecommunications technologies is emerging, in many instances, the research base remains behind practice. Therapists involved in e-therapy may ensure that they evaluate the effectiveness of their interventions. Furthermore they may keep up to date with developments in this rapidly moving area. Online counselling clearly does pose some unique problems, but also some unique possibilities for both clients and therapists. As such, both mental health practitioners and potential clients must be informed of both the benefits and limitations of remote therapeutic approaches.

Ultimately, psychotherapy is a decidedly human endeavor, and thus, the application of modern technology to therapy must capitalize on and enhance our human capacities as professionals. Online therapy introduces new pitfalls, and it is wise to be aware of these before choosing to practice in this way. While face-to-face treatment remains the gold standard, remote contact allows the creation of therapeutic situations where they might otherwise not have been possible, and may even be preferable to in-person contact in certain situations.

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