Telepsychiatry in an Era of Digital Mental Health Startups

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Abstract

Purpose of Review Telepsychiatry practiced by psychiatrists is evidence-based, regulated, private, and effective in diverse settings. The use of telemedicine has grown since the COVID-19 pandemic as people routinely obtain more healthcare services online. At the same time, there has been a rapid increase in the number of digital mental health startups that offer various services including online therapy and access to prescription medications. These digital mental health firms advertise directly to the consumer primarily through digital advertising. The purpose of this narrative review is to contrast traditional telepsychiatry and the digital mental health market related to online therapy.
Recent Findings In contrast to standard telepsychiatry, most of the digital mental health startups are unregulated, have unproven efficacy, and raise concerns related to self-diagnosis, self-medicating, and inappropriate prescribing. The role of digital mental health firms for people with serious mental illness has not been determined. There are inadequate privacy controls for the digital mental health firms, including for online therapy. We live in an age where there is widespread admiration for technology entrepreneurs and increasing emphasis on the role of the patient as a consumer. Yet, the business practices of digital mental health startups may compromise patient safety for profits.
Summary There is a need to address issues with the digital mental health startups and to educate patients about the differences between standard medical care and digital mental health products.

Keywords Telepsychiatry · Telemedicine · Startups · Digital mental health

Introduction

The Internet has become an indispensable part of everyday life, with about 89% of individuals in the USA having Internet access in 2022 [1]. In a 2021 survey, 44% of US adults those aged 18–49 were online almost constantly [2]. The Internet has modified and shaped how we obtain many services, including mental healthcare. During the COVID-19 pandemic, international psychiatry rapidly adapted to use telepsychiatry, primarily using video telecommunications, and considerable knowledge was gained about the delivery of remote care although questions about its optimal use remain [3–7]. Today telepsychiatry delivered by videoconferencing remains an important and routinely used form of care delivery by psychiatrists, with recognition of clinical, technological, and administrative concerns [8, 9•, 10]. Review articles provide evidence of the efficacy of telepsychiatry [11•, 12, 13•], and future research will advance remote patient treatment [14–17].

At the same time that the use of telepsychiatry grew, there was a rapid investment in digital mental health startups with a global investment of $5.5B in 2021 [18]. These digital mental health firms advertise directly to the consumer, primarily through digital ads, and provide a variety of services including symptom checkers, online individual and group therapy, self-help apps, supportive texts, and the often

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controversial access to prescription medications including controlled substances [19–21]. The growth of the digital mental health startups is occurring at a time when entrepreneurial technology ventures are viewed as important, positive forces to improve society, and patients are increasingly seen as medical consumers [22–24]. The purpose of this narrative review article is to discuss the impacts of the growth of digital mental health firms offering online therapy on patients. To discuss this, it is necessary to first briefly review traditional telepsychiatry. Then we will discuss some of the main contrasts found with the products offered by digital mental health firms.

Telepsychiatry is Standard Medicine

Psychiatrists using telepsychiatry perform standard functions of psychiatry including assessment, diagnosis, treatment recommendation, medication management, therapy, and follow-ups. Multiple studies have assessed the reliability and efficacy of telepsychiatry, including remote diagnosis and treatment with wide-ranging international populations in urban and rural areas. For remote diagnosis, the primary focus was on the use of live interactive videoconferencing. Substantial agreement was found when comparing the diagnosis from an in-person interview by a psychiatrist with that from a videoconferencing interview by a psychiatrist or psychologist using a variety of diagnostic approaches. This agreement was reported for the assessment of adults [25–27], adults presenting to the emergency room [28], adults from a rural minority population [29], inpatient adults [30, 31], adults in a maximum security forensic hospital [32], and children and adolescents [33, 34]. Substantial agreement was also reported for psychologists comparing remote versus in-person administration of rating scales to adults including the Montgomery-Asberg Depression Rating Scale, and the Hamilton Depression Rating Scales [35, 36].

There is also a considerable literature supporting the efficacy of Internet-based treatments for mental disorders guided by non-psychiatrist therapists, including psychologists, counselors, therapists, and clinicians. For remote treatment, in addition to live videoconferencing, review articles include approaches such as online self-guided, and email and telephone support. The review articles confirm the efficacy of online cognitive behavioral therapy (CBT) for anxiety disorders and depression [37–43], with less evidence for other psychiatric diagnoses [44–47]. Evidence of the efficacy of online treatment for anxiety and depression includes patients in rural, underserved areas [48•]. When compared to in-person treatment, online interventions may result in inferior longer-term outcomes for PTSD and depression [49, 50], although not in two recent studies [51, 52]. In a large study of patients with frequent suicidal ideation, an

online skills training program supported by a skills coach increased the risk of self-harm as compared with usual care [53]. Various modalities of telepsychiatry did not reliably reduce readmission rates for patients with a range of psychiatric diagnoses [17]. There is widespread agreement that study heterogeneity, exclusion criteria, and small sample size limit the findings of review articles and that additional high-quality research is needed to optimize the use of online patient interventions by non-psychiatrists.

Challenges of Telepsychiatry

Standard medicine also recognizes the challenges and limitations of telepsychiatry. Ongoing human support from a professional, as in most clinical trials, increases patient engagement, completion, and the effectiveness of online mental health treatments [54–57]. Telepsychiatry may make it harder to see facial expressions and detect non-verbal communication [58–60]. Clinicians may feel telepsychiatry is inappropriate for some patients, such as those experiencing psychotic or acute suicidal symptoms [38, 61•, 62]. Some review articles report high attrition rates for telepsychiatry [50, 63–65]. Cultural background may influence patient comfort with technology and affect patient-provider interactions [66]. Other barriers to telepsychiatry include older age, lack of digital access, low income, limited technical competence, and hearing and vision impairments [61•, 67, 68]. Additional research will help to maximize the efficacy of telepsychiatry and improve integration into routine care.

Digital Mental Health Firms

By clinical area, digital mental health startups led all recent investment activity in medicine [69]. The online therapy services market provided by digital mental health firms alone was valued at $945 million in 2021 and is expected to grow at a compound annual growth rate of 28.42% through 2027 [70]. In contrast to telepsychiatry, digital mental health firms are dominated by for-profit businesses offering many services including online therapy with licensed professionals, supportive texting, apps, and prescriptions for medications. The digital mental health firms advertise directly to consumers, spending their advertising budgets primarily on Internet ads and social media [19]. This business model is focused on customers who are college-educated, affluent, white adults [71]. When using online therapy from digital mental health firms, the consumer generally chooses the mode, frequency, and duration of treatment, and often pays directly. Some digital mental health firms offer incentives for online therapy such as free assessments and membership plans. The rapid growth of the digital mental health startups providing online therapy is the result of both stigma and

convenience, since the patient does not have to go in person to a therapist's office and may feel online therapy is more private. The growth is also aligned with ongoing societal changes that view patients as medical consumers who take an active role in healthcare decisions [23, 72, 73], rather than as patients who rely on the physician's expertise and duty to always prioritize their best interest.

The digital mental health firms provide services that are different from standard medicine. Telepsychiatry as practiced by psychiatrists recognizes the complexity of mental illness, follows standard procedures, and emphasizes patient safety. This includes obtaining an accurate diagnosis, using proven treatments, and providing personalized care. In contrast, a digital mental health startup prioritizes growth, focuses on profits, and the resulting business models often disrupt standard practices [24, 71]. This disruption is of particular concern when the new business practices sidestep the norms established to protect patient health. For example, many digital mental health firms providing online therapy offer consumers on-demand or immediate access to therapists, although this conflicts with the traditional time boundaries framing a therapy session [74, 75]. Therapists who formerly worked for some digital mental health firms report feeling pressured to shorten appointments, to see more patients, and clinicians to prescribe drugs [20, 71, 75]. Targeted ads to increase business often contain enthusiastic testimonials from celebrities, but may be misleading, incorrect, and upsetting to vulnerable people [76, 77]. Some firms hire less experienced therapists to control costs [20]. Our society applauds technology visionaries, disruptive innovation, and creative rule-breaking, but there is also a risk of entrepreneurial misconduct along with the rapid growth of digital mental health startups [24, 78]. Although the public may give startups the benefit of the doubt, entrepreneurial misconduct or fraud has occurred repeatedly across industries, including in healthcare [22].

A significant problem with digital mental health firms is the international lack of regulatory standards and oversight of digital medicine products for consumers. The result is a lack of peer-reviewed evidence of efficacy from most digital healthcare firms in all areas of medicine including mental health [79•, 80•, 81]. The therapeutic value of the services provided by digital mental health firms including online therapy is unclear and is often undocumented with limited evidence-based studies of the rapidly growing industry [20, 71, 80•]. Additionally, the appropriate role of online therapy, if any, for people with serious and persistent mental illness is unknown [82]. The general public may not be aware that many digital mental health firms offering online therapy are not to be contacted in a crisis, as stated, for example, in the informed consent of Cerebral [83]. There is also insufficient evidence to support therapy using synchronous texts or chatbots [84, 85]. Other major concerns associated with

the use of online therapy from digital mental health firms include self-diagnosis, privacy, lack of vital sign monitoring, and medication-related issues. Patients need to be educated on the important differences between online therapy from digital mental health firms and standard medical care.

Self-Diagnosis

Self-diagnosis is a frequent prelude to using online mental health services. A troubling result of the growth of digital mental health firms is the increasing self-diagnosis of mental disorders, especially among the young, often involving mental health websites and social media. The general public is not aware of the dangers of self-diagnosis or the difficulties of diagnosing a mental illness.

Challenges of Differential Diagnosis

In standard medical practice, there are many challenges posed by the differential diagnosis of medical and psychiatric diseases. A wide range of medical illnesses may masquerade as psychiatric illnesses including endocrine, neurologic and cardiac diseases, and nutritional deficiencies [86–88]. Frequently occurring psychiatric symptoms of medical illnesses include depression, psychosis, anxiety, and cognitive changes. For example, depression may be due to hypothyroidism, and psychosis may be due to hyperthyroidism [87]. The side effects of many commonly prescribed non-psychiatric drugs, including some sold over the counter (OTC), can mimic symptoms of psychiatric illness [88–91]. Substance use disorders may trigger or exacerbate psychiatric symptoms, both during intoxication and withdrawal. Additionally, psychiatric symptoms can masquerade as medical illness, such as a panic attack mimicking an acute coronary syndrome [92]. There is no single test or procedure to differentiate the cause of depression or psychosis [88, 93, 94]. A comprehensive medical evaluation including laboratory and diagnostic testing is often required to diagnose newly appearing psychiatric symptoms.

Social Media

Many young people may self-diagnose a mental illness based on social media posts before contacting a digital mental health firm. TikTok has been rapidly adopted by young adults internationally and has replaced Google as the world's most popular online destination [95]. There are reports of billions of views on TikTok for the hashtag ADHD, although more than half the top 100 most popular video posts on TikTok about ADHD were rated as

misleading [96, 97]. Videos on TikTok were also associated with a wave of self-diagnosed dissociative identity disorder [98]. There is a high prevalence of medical misinformation on social media posts, and social media platforms frequently spread health-related misinformation [99, 100]. Clinicians need to be aware of young people self-diagnosing based on unregulated and often incorrect posts of medical information on social media.

Symptom Checkers

Consumers may turn to symptom checkers before contacting a digital mental health firm with a diagnosis. Private companies, non-profits, and governmental agencies offer a variety of symptom checkers aimed at the general public, and the use of a symptom checker may precede the use of other online therapy. There are major concerns related to the use of online symptom checkers for self-diagnosis. Reviews of symptom checkers, both online and in apps, for a wide range of medical conditions found that the diagnosis was often inaccurate when compared to a physician's diagnosis and that there was considerable variability in accuracy between products [101–103]. In addition to the risk of an incorrect diagnosis, patients who try multiple products are likely to receive different and potentially contradictory advice [103]. A study of a symptom checker for mental disorders found a similar level of inconsistent performance [104]. Furthermore, the diagnostic accuracy of a symptom checker may be lower when completed by the general public rather than a clinician, as found with a symptom checker app for mental disorders [105]. Most symptom checkers are unregulated and do not provide ongoing evidence of efficacy and safety to the general public [101, 106].

The manner in which symptoms are presented in a symptom checker may impact the response by the general public. For a condition with symptoms on a continuum like depression, both the format, such as a checklist versus a subjective frequency scale, and the content, such as the inclusion of extreme behavior in a checklist, may cause questions to be interpreted differently [107]. The length of a symptom list may impact consumers. In direct-to-consumer marketing of antidepressants, a relatively long list of symptoms decreased the perceived lifetime risk of depression as compared to a short list of symptoms [108].

Treatment Delay

There are also concerns that for some people, online self-diagnosis may both exacerbate symptoms of mental illness and delay professional help seeking. A referral to in-person treatment from an online screening website may increase the risk of suicidal intent [109•]. A self-diagnosis of a mental illness may also decrease further online searches related to mental health [109•]. Many young people feel a self-diagnosis validates their symptoms but are unsure of what to do next [110]. Self-stigma occurs frequently in people with mental disorders [111–113] and is a known barrier to seeking professional help including among college students [114–116]. Additionally, an incorrect diagnosis could provide false reassurance and lead to a delay in seeking professional help [117].

Privacy

Many people incorrectly assume that the online therapy websites of digital mental health firms aimed at consumers are regulated and private. Privacy protections vary considerably by country. In the USA, most online therapy websites and apps are not regulated by the federal Health Insurance Portability and Accountability Act (HIPAA) laws that apply to traditional healthcare providers and their business associates [118–122]. The same sensitive personal data that is protected by HIPAA when obtained by a physician is not protected when obtained by most online therapy websites of digital mental health firms [122]. Consumers may not realize that there are entities that collect, share, and use health information but are not regulated by HIPAA [119, 123]. Multiple investigations into mental health websites and apps have found that they share data, including highly sensitive identifying information, with third-party advertisers [77, 124–126]. For example, in a study of 12 websites offering therapy for opioid addiction, all sent individually identifying data to advertisers [127•]. In a study of 50 direct-to-consumer telehealth firms for diverse conditions, 49 of 50 websites had trackers from tech firms collecting data, including 47 with trackers for Google and 44 with trackers for Facebook [128•]. A standard business model for websites that provide free or inexpensive services, including medical, is to collect and sell the user data to brokers, along with metadata (structured data about data) [129–132]. The data brokers then combine this very personal data with data created by other digital technology that is routinely used in all aspects of modern life and sell the combined data as a product. Consumers of online therapy websites may be completely unaware that their most sensitive data is often saved, sold, and included in algorithms that automatically classify people and affect their lives in education, employment, credit and lending, government services, online advertising, and criminal justice.

Privacy policies on websites and apps are not succeeding in explaining the scope and details of data-sharing policies [125, 133]. Privacy policies are based on a "notice and consent" model, offering the consumer a take-it-or-leave-it

choice to agree to the terms, and most people automatically accept the terms without reading [133, 134]. The majority of privacy policies are written at a college level, contain difficult and confusing legal terminology, and state that user information can be shared with third parties [119, 135, 136]. On some websites, privacy policies are difficult to locate, requiring multiple clicks [119]. In studies of mental health apps, less than half even had a privacy policy [137, 138]. Privacy policies can be changed without notification to the user [119].

Another patient data privacy problem relates to employers' wellness plans that include online therapy or apps. People may unknowingly share their private information with their employer, who often share data with third parties [139]. In addition to the privacy issues, international studies report that disclosure of mental health issues in the workplace frequently leads to employer discrimination, negative attitudes, and stereotyping [140–143].

Cybercrime has surged along with the expansion of routine daily activities online since the COVID-19 pandemic [144]. Healthcare data are vulnerable to security breaches and are extremely valuable to cybercriminals [145]. A technical review of 27 mental health apps (IOS and Android) found many data privacy issues, such as unnecessary permissions, insecure cryptography implementations, and leaks of personal data and credentials in logs and web requests, which were aggravated by data sharing with third parties [146]. The widespread use of online therapy from digital mental health firms also emphasizes the need to educate consumers on fundamental measures to mitigate the risk of cybercrime.

Medication Concerns

There are multiple concerns relating to self-medication. A person who has used an online screening tool to self diagnose may then proceed to self-medicate. Incorrect self-prescribing may further delay seeking medical advice. The general public may not be aware of the many potential risks of self-prescribing including inappropriate therapy, dangerous drug interactions, serious adverse reactions, incorrect dosage, masking symptoms, and a risk of dependence or abuse [147, 148]. Self-prescribing may involve prescription drugs from an online pharmacy as well as over-the-counter drugs. Some online pharmacies advertise directly to consumers, offer a fixed menu of drugs for a limited set of conditions, and screen to find those who cannot take these drugs, but do not consider the optimal treatment for the patient [149, 150]. There are also many illegitimate, rogue Internet pharmacies that do not require a prescription, including for psychiatric medications, sell counterfeit and substandard drugs, and pose a serious health risk [151–153]. Social media platforms are routinely used to market and sell illegal drugs [154].

There is considerable concern that some digital mental health firms offering online therapy have over-prescribed prescription drugs, including controlled substances and drugs with potentially serious side effects. Since the pandemic, providers in the USA no longer have to first see a patient in person before prescribing some controlled medications. The safety concerns from digital mental health firms include online prescribing of opioid and stimulant medication, and criminal investigations of firms have occurred for improper prescribing [82, 155, 156•, 157, 158]. Online therapy appointments do not require a physical exam nor obtain vital signs [82]. Some former employees at firms under investigation report feeling pressured to prescribe controlled medications and noted that short online 30-min initial screening appointments and suggestive advertising contributed to the pressure to prescribe [159, 160•]. As of February 2023, proposed rules are under consideration in the USA that would add safeguards to online prescribing of controlled medications [161].

Limitations

There are many limitations to this review. International legal issues were not discussed, including those related to privacy, licensing of therapists, and differences between healthcare systems. There was no discussion of the specifics of international regulatory standards, or how to improve regulation. International access and availability of the Internet, the digital divide, and reasons why some patients prefer in-person therapy were not discussed. The references primarily involved websites in the English language. Discussion of mental health apps, digital games as therapy, and the issue of cyberchondria was out of scope. Technical issues related to the ease of use and safety of online teletherapy software were not discussed. Potential solutions to the complex legal, privacy, and technical problems were not addressed.

Conclusions

Telepsychiatry as practiced by psychiatrists is an important, evidence-based approach for providing standard mental healthcare, which has proven results in diverse settings, is regulated, and keeps patient data private. In contrast, the rapidly growing digital mental health market including online therapy has unproven efficacy and is unregulated. There are inadequate privacy controls including for online therapy. A strong and detailed privacy framework is needed. The use of online therapy from digital mental health firms is often preceded by dangerous self-diagnosis involving social media or symptom checkers. There are also major concerns related to self-medicating and inappropriate online prescribing by digital mental health firms. Business practices of digital mental health startups may compromise safety for profits in an era

of widespread public support for technology entrepreneurs. The role of digital mental health firms and online therapy for people with serious mental illness needs to be determined. Patients need to be educated about the differences between standard medical care and the products offered by digital mental health firms.

Declarations

Conflict of Interest EA has served on advisory boards or consulted for Alkermes, Atheneum, Janssen, Karuna, Lundbeck/Otsuka, Roche, Sunovion, and Teva. He has received research support from Alkermes, Astellas, Biogen, Boehringer-Ingelheim, InnateVR, Janssen, National Network of Depression Centers, Neurocrine Biosciences, Novartis, Otsuka, Pear Therapeutics, and Takeda. He serves as an advisor to CAP-NOS Zero, the World Psychiatric Association and Clubhouse International, and the SMI Adviser LAI Center of Excellence (all unpaid). The other authors declare no competing interests.

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