



Incorporating Digital Interventions into Mental Health Clinical Practice: a Pilot Survey of How Use Patterns, Barriers, and Opportunities Shifted for Clinicians in the COVID-19 Pandemic

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Received: 1 August 2021 / Revised: 23 March 2022 / Accepted: 20 April 2022
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Abstract

Although many digital mental health interventions are available, clinicians do not routinely use them in clinical practice. In this pilot survey, we review the factors that supported the rapid transition to televisits during the COVID-19 pandemic, and we explore the barriers that continue to prevent clinicians from using other digital mental health interventions, such as mindfulness applications, mood trackers, and digital therapy programs. We conducted a pilot survey of mental health clinicians in different practice environments in the USA. Survey respondents ($n = 51$) were primarily psychiatrists working in academic medical centers. Results indicated that systemic factors, including workplace facilitation and insurance reimbursement, were primary reasons motivating clinicians to use televisits to provide remote patient care. The shift to televisits during the pandemic was not accompanied by increased use of other digital mental health interventions in patient care. Nine clinicians reported that they have never used digital interventions with patients. Among the 42 clinicians who did report some experience using digital interventions, the majority reported no change in the use of digital applications since transitioning to televisits. Our preliminary findings lend insight into the perspective of mental health clinicians regarding the factors that supported their transition to televisits, including institutional support and insurance reimbursement, and indicate that this shift to virtual patient care has not been accompanied by increased use of other digital mental health interventions. We contend that the same systemic factors that supported the shift toward virtual visits in the COVID-19 pandemic may be applied to support the incorporation of other digital interventions in mental healthcare.

Keywords Mental health · Technology · Digital mental health interventions (DMHIs) · Digital mental health treatments (DMHTs) · Telehealth

Introduction

One in five adults in the USA have a mental health condition, but many do not receive the care they need. Among the 53 million adults with mental health conditions in 2020, only 46% received treatment (Substance Abuse and Mental Health Services Administration, 2021). The ever-rising demand in mental healthcare has not been matched by an increase in trained clinicians, and there is an estimated unmet demand of 20% by 2025 (Health Resources and Services Administration, 2015). This demand for mental health treatment only increased during the COVID-19 pandemic (Pfefferbaum & North, 2020), and mental healthcare providers responded by rapidly shifting their practice environments from in-person care to telemedicine (Kalin et al., 2020). Although the clinical environment changed, the supply-demand problem was not addressed. Given the shortage of

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mental health providers is expected to persist (Satiani et al., 2018), we must leverage alternative options to expand mental healthcare access and support.

Tech-based interventions may help close this gap, with benefits including widespread access and more consistent support (Hariman et al., 2019). There are thousands of available interventions, such as smartphone apps for on-demand therapy, mood trackers, and meditation. However, most clinicians do not recommend these tools to patients (Bauer et al., 2020). Clinicians encounter personal barriers, such as lack of knowledge about available products, concerns regarding safety and efficacy, and time constraints. Clinicians also face systemic barriers, such as issues with insurance reimbursement and concerns regarding patient privacy (Gagnon et al., 2016). Clinicians need health systems to support a transition toward a new frontier in mental healthcare, one that effectively meets the growing demand by supporting the incorporation of digital mental health interventions (Gipson et al., 2017; Hilty et al., 2020; Kim et al., 2018; Mohr et al., 2021).

This article describes the results of a pilot survey of mental health clinicians across different practice environments in the USA. In this survey, we consider how clinical practice has changed since transitioning to telemedicine for remote patient care in the COVID-19 pandemic and explore the personal and systemic barriers that continue to impede the integration of additional digital interventions in mental healthcare. These digital interventions have been termed digital mental health treatments (DMHTs; Mohr et al., 2021) and digital mental health interventions (DMHIs; Schueller & Torous, 2020) in the literature, and we use both of these terms interchangeably in this manuscript. We propose that the rapid adoption of televisits during the pandemic provides critical insights that may help facilitate the incorporation of other digital interventions, such as digital therapy programs, in mental healthcare.

Methods

We conducted an online survey using Qualtrics software about the use of technology in mental healthcare across the USA (Online Resource). We surveyed mental health clinicians in different practice settings to gain insight into the personal and systemic barriers to incorporating technology in clinical practice.

The survey included 18 multiple choice questions and 2 questions that allowed for written responses. We distributed this survey to listservs at academic institutions and published it on social media (Facebook, Twitter) to capture a range of clinician types and practice settings. The emails and posts included descriptions of the purpose and scope of the survey. Participants were not offered monetary incentives or

other benefits for participation. Participants were informed that participation was voluntary, responses would be kept anonymous, and return of the survey indicated consent to participate in the study. Our study protocol was reviewed by the Research Compliance Office at Stanford University and granted exemption from the Institutional Review Board.

The survey elicited a total of 112 responses, of which 51 were complete responses and were included. Survey respondents were majority female (74%; $n = 37/50$, one respondent declined to provide their gender) and ages 30 to 59 (86%; $n = 43/50$, one respondent declined to provide their age). Survey respondents ($n = 51$) indicated they worked in different environments, including academic centers (65%), private practice (12%), community clinics (12%), non-academic affiliated hospitals (8%), and veterans affairs hospitals and clinics (4%). They also reported various job titles including psychiatrist (55%), psychologist (27%), licensed clinical social worker (6%), psychiatric nurse practitioner (2%), and therapist/counselor (2%). Three respondents identified as "Other," specifying roles as a marriage and family therapist, psychiatric physician's assistant, and occupational therapist.

Results

We began this work in June 2020 of the COVID-19 pandemic, which saw the rapid rise of televisits for remote patient care. Forty-three percent ($n = 22/51$) of clinicians reported never having used telephone or video visits with patients prior to the pandemic.

Among clinicians who reported experience in televisits, the majority reported using video visits (93%) or telephone visits (59%) with almost all or most of their patients during the pandemic. Protecting their health by limiting in-person contact was the most commonly cited reason for providing care virtually. Eighty-four percent ($n = 43/51$) of clinicians reported that protecting their own health had a moderate ($n = 11$) or strong ($n = 32$) influence on their decision to provide virtual care. The majority of clinicians (63%; $n = 32$) also reported that patient preference to protect their health played a moderate ($n = 9$) or strong ($n = 23$) role in the decision to provide care virtually. Clinicians also reported that the convenience of using these technologies influenced their decision, with 76% ($n = 39/51$) citing convenience as a moderate ($n = 17$) or strong ($n = 22$) influencing factor.

Clinicians also cited systemic factors, including insurance reimbursement for telehealth visits and workplace facilitation of televisits into their clinical practice, as primary reasons motivating them to use televisits. The majority of clinicians (75%; $n = 38/51$) reported that insurance reimbursement for televisits moderately ($n = 11$) or

strongly ($n=27$) influenced their decision to transition to remote patient care. Clinicians also cited efforts such as receiving training on how to use these technologies and feeling that it is now more widely acceptable to use these technologies as important examples of workplace facilitation efforts. Seventy-eight percent ($n=40/51$) of clinicians reported workplace facilitation as a moderate ($n=15$) or strong ($n=25$) influencing factor.

We asked clinicians to describe how providing care virtually has impacted their overall clinical experience, and there was significant variation in responses. Among the 51 surveyed clinicians, 20% ($n=10/51$) reported significant improvement, and 14% ($n=7/51$) reported that their experience has somewhat improved, whereas 24% ($n=12/51$) reported no significant change, 25% ($n=13/51$) reported that their experience has somewhat worsened, and 2% ($n=1/51$) reported that their experience had significantly worsened. Sixteen percent ($n=8/51$) of clinicians responded, "I am not sure."

Clinicians who felt their overall experience had somewhat or significantly improved cited personal benefits, including increased quality of life and convenience of working from home, and systemic benefits such as expanded access to care. A few examples follow (edited for grammatical correctness):

It has allowed services to be more accessible so I am able to reach more people than I could otherwise.

It has been huge for my quality of life to be able to work remotely from home.

I am spending less time going between locations, which means I have more time and focus available for my patients.

By comparison, clinicians who responded that their experience had somewhat worsened or significantly worsened cited various personal concerns, including lack of personal connection with patients, screen fatigue, and distractions at home, as well as systemic concerns including technical issues, lack of internet access, and increased burden to coordinate visits. Some responses included (edited for grammatical correctness):

Telehealth does not feel the same as in-person visits. Some body language and emotional expression is lost through telehealth.

I feel less confident that I have gotten a good assessment of their clinical status. Also, I find the emotional rewards to be much less.

Documentation can take longer when working from home due to the number of distractions available.

There doesn't seem to be as much of a delineation between work and everyday life anymore.

Although I appreciate being able to work from home, there is significantly less interaction with colleagues,

and it is exhausting/unhealthy to stare intently at a screen all day.

Lack of internet/device access. Increased organizational burden (invite links, email lists).

The shift to televisits during the pandemic was not accompanied by increased use of other digital mental health interventions, such as mindfulness applications, mood trackers, and digital therapy programs. Nine clinicians reported that they have never used digital interventions with patients. Among the 42 clinicians who did report some experience using digital interventions, the majority of clinicians did not change their use of digital platforms during the pandemic. The majority reported no change in the use of mindfulness and meditation applications (67%; $n=28/42$), mood trackers (71%; $n=30/42$), digital therapy programs (62%; $n=26/42$), text therapy (81%; $n=34/42$), and digital peer support (64%; $n=27/42$). Only four respondents reported that they are recommending mindfulness and meditation applications to almost all of their patients now. A significant proportion of clinicians had no personal experience with these interventions; 25% of clinicians reported that they have never used digital technologies for their own mental health.

Among the few clinicians who recommended digital mental health treatments to more patients after shifting to telehealth, some mentioned a trend toward greater acceptance of tech-based solutions. A few examples follow:

Social distancing has increased acceptance or at least willingness to try apps or other solutions powered by newer technology.

I am now prescribing multiple apps for my patients, who note their ease and convenience as reasons to start. They seem to be getting better from these tools so I want to further explore.

Video visits have not had a major impact but having the ability to recommend mhealth/digital solutions for patients who can't access in person care has been helpful, including several chat therapy apps.

I think the apps augment their previous/current therapy, and allow them to feel more supported.

Conclusions

This pilot survey offers the perspective of mental health clinicians, many of whom experienced sweeping change in their clinical practice environment during the COVID-19 pandemic. In our sample, clinicians identified systemic factors, including insurance reimbursement for telehealth visits and workplace facilitation efforts, as key factors driving their decision to use televisits to deliver remote patient care. These factors were ranked similarly to personal factors, such

as protecting their health, and the convenience of working from home.

These findings lend important insight into systemic changes that may support the incorporation of other digital mental health interventions. We posit that the adoption of digital mental health interventions has the potential to significantly improve access to mental health resources and close the gap of unmet demand. However, referring a patient to a smartphone app takes time and careful consideration. The American Psychiatric Association released App Advisor, a tool to help clinicians review apps (Lagan et al., 2020, 2021), but it takes time to select and review applications, consider the safety and efficacy of the platform, decide if it is appropriate for the patient, and then perform patient consent, education, and follow-up. Our preliminary findings suggest that insurance reimbursement is an important motivating factor for clinicians and may support increased use of digital mental health interventions. Prior to the COVID-19 pandemic, telehealth services were available but lacked widespread approval. During the pandemic, the Center for Medicare and Medicaid services expanded Medicare coverage for telehealth visits, as did many other insurance companies, and subsequently, the majority of mental health clinicians transitioned to telehealth visits (Kalin et al., 2020; Moreno et al., 2020). Similarly, we suggest that clinicians may adopt other digital mental health treatments into their clinical practice, such as digital therapy programs, meditation apps, and more, if they received reimbursement for the time spent connecting patients with digital interventions. This recommendation for insurance reimbursement has growing support; a 2021 forum convening key stakeholders reported consensus support for insurance reimbursement of digital mental health treatments (Mohr et al., 2021).

Additionally, workplace facilitation of new interventions is critical to implementation and usage patterns. Many clinicians cite concerns about the cost, efficacy, and safety of digital mental health interventions, as well as lack of knowledge about how to use digital tools, as critical barriers to adoption (Gagnon et al., 2016). Clinicians need clear recommendations on how to evaluate and select digital mental health treatments and incorporate these interventions into clinic workflow, but comprehensive and widely applicable guidelines have yet to be developed. Future clinical guidelines must consider the entire process including app evaluation, consent, patient education, and monitoring adherence and progress. These guidelines may empower care providers in other settings such as primary care to offer patients digital mental health treatments, and these stepped care models may help relieve the supply–demand problem that limits access to mental healthcare. Further research must define the specific barriers for patients, clinicians, and systems that have prevented the widespread incorporation of digital mental health

treatments so these barriers can be effectively addressed. Facilitating a positive clinician experience with tech-based interventions will be paramount to a successful transition to tech-enabled care.

This pilot survey has several limitations that should be considered. This study relied on self-report, and the investigators did not meet individually with respondents to confirm or discuss survey responses. There is likely a selection bias present, as respondents who elected to take this survey on digital interventions may hold a personal or career interest in this field, and thus, the findings of our small sample size are likely not representative of all clinicians. Furthermore, the majority of our respondents are psychiatrists working in academic medical centers and are not representative of all clinicians in diverse practice environments. Future survey studies could use additional distribution channels for alternative practice environments beyond academia to improve response rate and capture a more diverse group of respondents.

The COVID-19 pandemic caused a rapid change in the way we deliver healthcare, something rarely seen in the historically slow-moving and fragmented US healthcare system. The shift toward telehealth visits was supported by systemic changes like institutional support and insurance reimbursement for telehealth visits. We contend that these insights can also be applied to support the incorporation of digital mental health treatments, which may contribute to the goal of expanding access and quality of mental healthcare.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s41347-022-00260-8>.

Acknowledgements We acknowledge the support of members of Brainstorm: The Stanford Lab for Mental Health Innovation

Declarations

Ethics Approval Participants were provided with a consent form that described the purpose of the study, risks and benefits, and participants' rights prior to initiation of the survey. The study protocol was reviewed by the Research Compliance Office at Stanford University and granted exemption from the Institutional Review Board.

Conflict of Interest SLJ receives compensation as a consultant for Brainstorm Solutions and TikTok. TO has received licensing payments through University of Cambridge from Psyomics, Ltd. NC receives compensation as a consultant for Brainstorm Solutions and TikTok. She also receives compensation from Brightline, Pace, Apple, the Made of Millions Foundation, and the Tupac Amaru Shakur Foundation. NV receives compensation as a consultant for Brainstorm Solutions and TikTok. She also receives compensation from Real, Apple, Silicon Valley Executive Psychiatry, Innovatel Telepsychiatry, PsychHub, Kareo, and the Tupac Amaru Shakur Foundation. GA receives compensation as a consultant for Brainstorm Solutions and TikTok. She also receives compensation from BetterUp, Apple, HealthyGamer, gg, and the Tupac Amaru Shakur Foundation.

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