



Barriers to Use of Telepsychiatry: Clinicians as Gatekeepers

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Abstract

Telepsychiatry is effective and has generated hope and promise for improved access and enhanced quality of care with reasonable cost containment. Clinicians and organizations are informed about clinical, technological, and administrative telepsychiatric barriers via guidelines, but there are many practical patient and clinician factors that have slowed implementation and undermined sustainability. Literature describing barriers to use of telepsychiatry was reviewed. PubMed search terms with date limits from January 1, 1959, to April 25, 2019, included *telepsychiatry*, *telemedicine*, *telemental health*, *videoconferencing*, *video based*, *Internet*, *synchronous*, *real-time*, *two-way*, *limitations*, *restrictions*, *barriers*, *obstacles*, *challenges*, *issues*, *implementation*, *utilization*, *adoption*, *perspectives*, *perceptions*, *attitudes*, *beliefs*, *willingness*, *acceptability*, *feasibility*, *culture/cultural*, *outcomes*, *satisfaction*, *quality*, *effectiveness*, and *efficacy*. Articles were selected for inclusion on the basis of relevance. Barriers are described from both patient and clinicians' perspectives. Patients and clinicians are largely satisfied with telepsychiatry, but concerns about establishing rapport, privacy, safety, and technology limitations have slowed acceptance of telepsychiatry. Clinicians are also concerned about reimbursement/financial, legal/regulatory, licensure/credentialing, and education/learning issues. These issues point to system and policy concerns, which, in combination with other administrative concerns, raise questions about system design/workflow, efficiency of clinical care, and changing organizational culture. Although telepsychiatry service is convenient for patients, the many barriers from clinicians' perspectives are concerning, because they serve as gatekeepers for implementation and sustainability of telepsychiatry services. This suggests that solutions to overcome barriers must start by addressing the concerns of clinicians and enhancing clinical workflow.

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Lack of access to psychiatry is a well-documented problem.¹ Two-thirds of primary care physicians in the United States reported that they could not access outpatient mental health services for their patients,² and nearly 50% of rural hospitals reported a mental health professional shortage.³ Telepsychiatry (ie, 2-way video) provides access to psychiatric care, enhanced quality of care, and reduced health care costs.⁴⁻⁶ An increasing body of literature reports effectiveness and outcomes equivalent to in-person care across a broad range of mental health disorders and patient populations.⁴⁻⁶ In some situations (such as working with children and teens), telepsychiatry may even be preferable to in-person care.⁷⁻¹²

Despite many studies reporting positive clinician and patient satisfaction with telepsychiatry,^{8,9,11,13,14} implementation has not been rapid, easy, or widespread.¹⁵⁻¹⁸

In 2009, only about 2% of psychiatrists had used telepsychiatry in the United States.¹² Although the numbers of Medicare telemedicine visits have been increasing, less than 1% of rural Medicare beneficiaries received a telemedicine visit as of 2016.¹⁰ A recent article examining a large commercially insured population concluded that although telemedicine care substantially increased from 2005 to 2017, use was still uncommon by 2017.⁷ In addition, in 2014, only 100 clinicians accounted for more than half of all telemental health visits that

year,¹⁹ suggesting that telepsychiatry practice has been undertaken by a select few clinicians and/or private companies²⁰ with dramatically uneven distribution across states.¹⁹ Despite its slow start, telepsychiatry may now be at a tipping point and is poised to be widely used.²¹

We reviewed the telepsychiatry literature to identify barriers to the implementation and use of telepsychiatry. The American Telemedicine Association practice guidelines outline important clinical, technological, and administrative barriers.^{15,16,22} In addition, there are many practical patient and clinician factors that have slowed implementation and undermined sustainability. Indeed, patient-centered health care, in which patients are drivers, not just participants, suggests that barriers need to be described from their perspective and the perspectives of clinicians who are directly helping them.^{23,24} PubMed search terms with date limits from January 1, 1959, to April 25, 2019, included *telepsychiatry*, *telemedicine*, *telemental health*, *videoconferencing*, *video based*, *Internet*, *synchronous*, *real-time*, *two-way*, *limitations*, *restrictions*, *barriers*, *obstacles*, *challenges*, *issues*, *implementation*, *utilization*, *adoption*, *perspectives*, *perceptions*, *attitudes*, *beliefs*, *willingness*, *acceptability*, *feasibility*, *culture/cultural*, *outcomes*, *satisfaction*, *quality*, *effectiveness*, and *efficacy*. Articles were selected for inclusion on the basis of relevance. This review comprehensively describes barriers that have impeded telepsychiatry's expansion, with an eye toward solutions to these challenges.

SHARED CONCERNS ABOUT SATISFACTION/ALLIANCE/RAPPORT/COMFORT

For patients, telepsychiatry improves access to care, reduces wait times for appointments, and reduces travel time and costs.^{11,13,14,25} For example, a recent US Department of Veterans Affairs study reported that telemedicine saves patients an average of 145 miles and 142 minutes per visit.²⁶ These benefits seem to largely outweigh reservations patients may have, as numerous studies cite high willingness to use this mode of care and high ratings of patient satisfaction with

ARTICLE HIGHLIGHTS

- Although telemedicine care has substantially increased in the past decade, telepsychiatry expansion has been hampered by multiple barriers, resulting in slower than expected growth and uneven distribution of services. Telepsychiatry may now be at a tipping point and is poised to be widely used.
- Many more barriers to telepsychiatry practice were identified from clinicians' or health care organizations' points of view rather than from patients' perspectives. Although many concerns are shared by patients and clinicians, usually a reluctant clinician rather than the patient hampers acceptance of telepsychiatry.
- Telepsychiatry is an effective way to improve access, enhance quality, and provide efficient care. Clinicians' concerns reflect a need for better system workflow integration, policy change, and shifts in organizational culture if telepsychiatry's full potential is to be realized.

the care they receive via telepsychiatry.^{5,8,9,11,13,14,20,27-29} To some extent, acceptability of telepsychiatry to patients may be mediated by cost and distance.^{28,30} Satisfaction is higher if the alternative is no care or higher cost, with more travel time for in-person care.^{14,31} Despite access and potentially saving money, they may remain skeptical of telemedicine's efficacy and quality.³² Even in resource scarce areas, some patients still voice a preference for in-person encounters.³³⁻³⁷ Negative perceptions and expectations should not be ignored, as they may predict actual use and satisfaction.³⁸

Patients generally report increasing comfort and satisfaction once they have used telepsychiatry^{27,39,40} after initial apprehension, discomfort, and fear.^{16,20,28,31-33,35,36,38,41-45} Clinicians, who often come to the profession because they desire contact with patients, may share these concerns.^{20,38,46} Like patients, clinicians also report improved attitudes toward telepsychiatry after trying it, suggesting that increased exposure for clinicians may be important to alleviate their concerns about rapport.^{35,47-50}

Where organization level barriers have been eliminated, the most frequent barrier

was a view that telepsychiatry was less personal and that it was more difficult to establish rapport.⁵¹⁻⁵³ Both users and particularly nonusers of telemedicine reported disliking the loss of personal patient contact.⁵⁴

Decreased ability to detect nonverbal cues during videoconferencing may limit rapport building,^{31,55,56} with clinicians noting difficulty picking up nuances and emotions.^{46,51} Some clinicians may feel and look stiff or uncomfortable or have difficulty engaging patients.^{39,46} They have reported discomfort due to focus on staying in view and that fear of making the screen jerky impeded note taking.^{51,57} Eye contact can also feel artificial across technology.⁴⁶ Clinicians have also expressed discomfort in being unable to take physical steps to reassure or comfort. Gestures such as handing tissues to a tearful patient, moving a chair closer in support, or walking someone in and out may carry emotional significance.⁴⁶ Specific educational core competencies have been suggested to teach telepsychiatry clinicians how to facilitate the therapeutic relationship by adjusting clinical interview skills, attending to rooms and furnishings, and preventing distractions.⁵⁷ In one highly experienced center, they note that rapport was quickly established by exhibiting use of the equipment and allowing youth and their parents to become familiar with screen controls.⁴⁸

Clinicians reported lower therapeutic alliance in telemental health conditions when randomly assigned to evaluate in-person or videoconference therapy sessions⁵⁸ and remain hesitant to use video conference therapy sessions because they believed that the therapeutic alliance was at risk.^{40,58} They are understandably concerned about the quality of therapeutic relationships and ability to establish rapport,^{6,20,38,46,59,60} given that psychotherapy outcome research has found therapeutic alliance to account for nearly 30% of the variance in treatment outcomes independent of moderating factors.^{6,51,60} Accordingly, clinicians may fear if rapport suffers, positive clinical outcomes will not be forthcoming.^{59,61}

In addition to their own feelings about telepsychiatry, clinicians worry that patients will feel self-conscious, uncomfortable, or unsatisfied with videoconference encounters.^{46,51} They have expressed concerns about some patients or circumstances being inappropriate for telepsychiatry, including the elderly, patients experiencing psychotic symptoms or who are in crisis, patients with hearing or vision impairment, or patients with cognitive impairments.^{11,16,20,33,35,38,41,42,44,45,62,63} Unfamiliarity with technology may also play a role in patients' comfort and willingness to try telepsychiatry.^{11,33,44,62,64-67}

However, clinicians rate patients' comfort and satisfaction with telepsychiatry encounters less highly than do patients⁴⁵ and they rate patients' levels of comfort as lower than their own.³⁹ In one such study, patients assessed videoconference meetings as being more meaningful than therapists did, and patients evaluated the therapists more positively than the therapists did themselves. The overall results suggested that telepsychotherapy did not negatively affect the development of therapeutic alliance.⁴⁰

Although much has been written about difficulties establishing therapeutic relationships through videoconferencing, there may actually be some distinct advantages in building psychotherapeutic relationships in a "virtual space." For instance, some patients actually report feeling more comfortable and are able to be more open and honest when discussing difficult subjects because of the "protection" or distance afforded by the virtual space of the session.^{68,69} Clinicians, too, may feel safer evaluating patients with risk of aggression.⁶⁹ As the vignette in [Table 1](#) highlights, rapport can even be established under acute and challenging circumstances. Children, brought up in the era of the Internet, find telepsychiatry to be fairly natural⁸ and perhaps even preferable.^{70,71} Another unique advantage of telepsychiatry in terms of rapport building is the possibility for patients (especially immigrants, refugees, and asylum seekers) to receive care in their native language without the assistance of an interpreter.^{69,72}

Exposure to these advantages may help mitigate clinician's concerns, as successful therapeutic relationships have been established using telepsychiatry across multiple patient populations and psychiatric symptoms.^{68,71,73-76}

COMMUNITY/CULTURAL

Telepsychiatry practice often involves challenging culture gaps^{16,77} and differences in values.^{16,33,38,45,62,67,69,77,78} Psychiatrists from elsewhere may be unfamiliar with local resources and make recommendations for services that are scarce.⁷⁹ Collaborating with local clinicians provides knowledge of local resources and culture,^{9,78} provides connection to the community,^{33,34,77} and may mitigate feelings of loss of control that local clinicians may feel from remote expert consultations.^{20,50,80-82} Connection with local clinicians also enhances feedback on the effectiveness of recommendations (the lack of which has been of concern to remote telepsychiatrists).⁵⁰ In addition, the investment of community stakeholders and the support of telepsychiatry champions have been cited as key to telepsychiatry program success and sustainability.⁴⁸

PATIENT PRIVACY, SECURITY, BOUNDARIES, AND SAFETY

Clinicians and patients have concerns about protecting patient privacy when using telepsychiatry.^{6,9,11,20,33,44,51,52,59,67,77,83-87} They worry about others accessing telepsychiatry sessions⁸⁴ or protected health information.²⁷ Of particular concern are network security⁵⁹ and encryption,⁶⁷ and equipment situated outside the traditional clinical areas that could increase the risk of intercepting tele-mental health interactions, especially as tele-conference technology becomes ever more mobile.^{11,20,27,77,83,87} Although technically possible to videoconference over mobile devices, lack of information security on these devices may not meet clinical standards.⁶⁷ Patients have attempted to create cell phone hotspots for connectivity and called in from restaurants, libraries, and their cars, creating obvious privacy and security problems.⁶⁷ There are, however, a growing number of

TABLE 1. Establishing Rapport and Safety in an Acute Setting

Case example: Telepsychiatry was provided to an inpatient hospital to cover for physician illness. A 43-year-old man with depression was hospitalized after a suicide attempt. At the beginning of the telepsychiatry encounter, he minimized events leading to hospitalization and became frustrated after learning he would not be discharged and abruptly left the room. He was able to calm down, returned to finish the evaluation, and was agreeable to treatment recommendations, including medication for depression. He worked with the telepsychiatrist daily. At discharge, he voiced a preference for telehealth rather than seeing on-site psychiatrists he had worked with before.

Take home points: The patient was initially willing to participate, but abruptly left the first session and then returned. Despite the acuity of the situation and initial frustration, rapport was successfully established, and the patient reported being satisfied overall, even voicing preference for telehealth. The telepsychiatrist was able to successfully perform the suicide risk assessment, manage medications and treatment, and oversee discharge planning.

Health Insurance Portability and Accountability Act of 1996—adherent technologies available for telepsychiatry.⁸⁸ Telepsychiatry clinicians need particular training in the use of approved technologies, privacy requirements, and potential liability issues related to the use of technology.⁸⁷ Although telepsychiatry parallels in-person care in these requirements, the issues are even more important when social media, smartphone applications across mobile health platforms, or a range of other technologies are used.

In addition, for in-home sessions, a quiet secluded space is essential, yet challenging to ensure in shared living environments.^{68,77} Moreover, the home environment pushes limits of traditional therapeutic boundaries. Patients eager to share may introduce clinicians to partners and children and invite clinicians remotely into their living spaces in ways not possible from traditional office-based settings.⁷⁷ Firm boundaries must be established from the outset, as patients have been noted to multitask during appointments by eating and preparing food, doing laundry, and smoking. It is also possible for the patient to literally “switch off” the therapist.^{69,77,89}

SAFETY

Clinicians and patients have expressed concerns about securing safety for patients in crisis or faced with the threat of self-harm.^{9,16,33,34,38,46,49,52,77-80} Patients have

voiced desire for a physical presence during a time of crisis.³³ One consistent recommendation is to employ support staff where the patient is located who may intervene in case of an emergency.^{16,52,78} Given potential problems with the technology and network (lost connection), it is essential that clinicians know the patient's location and have a local collaborator or secondary method for immediately contacting the patient or staff at the patient site.⁸⁷

TECHNOLOGY RELATED

A well-functioning telepsychiatry system is essential for success.⁹⁰ Fortunately, as the technology advances rapidly, technical problems become less substantial.^{8,12,47,91} The same telepsychiatry interventions with better technologies may even improve the present results.^{91,92} Unfortunately, previous studies abound with examples of technical difficulties such as sessions unable to start, spontaneous disconnections, or poor audio/visual quality, and audio/visual lag.^{11,33,38-40,44,51,54,64-67,89,93-95} When technology works poorly, technical support becomes an additional factor deserving consideration.^{20,21,31,51}

Adequate transmission speed (at least 384 kbps) and adequate bandwidth are needed to support ability to detect facial cues, and without lag that can result in a jerky video.^{51,59,96,97} Unfortunately, according to the US Federal Communications Commission's broadband progress report in 2015, the United States is failing to keep pace in rural areas, which are often areas with targeted need for telepsychiatry.^{16,33,38,67,94} The US Federal Communications Commission's Universal Service Fund has subsidies that can reduce the cost of bringing bandwidth to support telepsychiatry network connections. This resource is underutilized in part because of a cumbersome application and limitations on eligible facilities.^{27,98}

Sound quality may affect psychiatrist satisfaction more than video quality. In fact, psychiatrists indicated that they would be willing to sacrifice video quality to have or maintain high-quality audio,⁹⁹ making

prioritizing sensitive and well-placed microphones essential.^{16,51}

Although audio quality may be prioritized, poor visual transmission resulting in decreased ability to detect nonverbal cues remains concerning.⁵⁵ Poor visual transmission may limit mutual connection and understanding⁵⁶ and impair ability to detect physical examination findings.^{6,16,20,31,36,38-40,45,46,51-56,58,60,61,63,85,100} such as tics, tremors, and subtle facial expressions.^{51,59} In one survey, only about one-third of respondents felt they could conduct a thorough physical examination using telemedicine.⁵⁴ Local collaborators at the patient's location may be able to supply on the ground observations and physical examination findings to mitigate lost data.^{16,52,78,87}

CLINICIANS' PERSPECTIVES

Many more barriers to telepsychiatry practice were identified from clinicians' or health care organizations' points of view rather than from patients' perspectives. Although many concerns are shared by patients and clinicians, usually reluctant clinicians rather than patients slow acceptance of telepsychiatry.²⁷ Reviewing the literature, a theme of "clinician as gatekeeper" to the use of telepsychiatry became clear. Physicians are highly influential in telepsychiatry,⁷ and they decide about telemedicine use for more than 90% of patients.^{3,35,101} This critical finding suggests that encouraging growth of telepsychiatry must start by first addressing clinician concerns,³⁵ which are further reviewed below (also see [Table 2](#)^{102,103}).

LIMITED EVIDENCE-BASED INFORMATION

Although many recent studies and reviews have been published in the past 15 years, the evidence base for telepsychiatry has been considered inadequate by clinicians.^{31,59,104,105} Although research has rapidly increased, as recently as 2011, 78% of clinicians surveyed responded that more research on the effectiveness of telehealth was needed.⁵⁹ Research has been underfunded, such that projects are discontinued and

findings go unpublished.^{3,38} Ironically, poor research funding limits evidence to support telemedicine, the lack of which may be a reason organizations are reluctant to provide long-term funding for telemedicine.²⁵

More high-quality research and data are desired¹⁰⁵ about referring and consulting clinician satisfaction, the characteristics of the technology used, the cost (preferably through cost-benefit analyses), and longitudinal evaluation.³¹ Satisfaction studies need to be more specific,³¹ and further study is needed on therapeutic alliance and specific variables involved in videoconferencing that could affect the therapeutic relationship.⁴⁰ Research has provided few insights into how telemental health is being used in most real-world settings,^{10,19} something the Congressional Budget Office has recently emphasized need for.^{19,106} In addition, the understanding of how technology affects patient-doctor relationships, practice, and clinical outcomes has not kept pace with the rapidly changing technologies.^{12,47} Additional studies to address these concerns would strengthen the literature and mitigate clinician skepticism.

LIMITED EDUCATION FOR CLINICIANS/ LEARNING OPPORTUNITIES

Limited education, clinical exposure, and hands-on learning in telepsychiatry are significant barriers to expanding use.^{8,11,20,27,28,31,35,38,40,47,59,89,104,105,107-110}

Telepsychiatry education in medical school and residency is minimal,^{8,47,110} with only 21 of 183 US residency training programs offering any training or experience in telepsychiatry.¹² The burden largely falls on individual psychiatrists to seek out the knowledge and experience required to become competent in telepsychiatry.⁴⁷ Many telemental health clinicians have reported feeling inadequately trained,^{11,59,108} which, in turn, may affect their use and may reduce their satisfaction.⁵⁹ Those who received training were likely to use telepsychiatry more often,³⁸ and clinicians reported increased positive attitudes toward telemedicine after using it,³⁵ suggesting that education and training in telepsychiatry is an

TABLE 2. Additional Factors Affecting Clinician Satisfaction With Telehealth^{102,103}

| |
|---|
| • Ratio of negatives and positives regarding the modality |
| • Sense of efficacy as a clinician |
| • Positive vs negative endorsement of patients' experiences (ie, that patients like or dislike the telehealth modality) |
| • Ease of physical transition between in-person and telehealth modes of care during workday |
| • Degree of valuing telehealth encounters when interacting with patients |
| • Aspects of in-person care missed in virtual encounters |
| • Satisfaction with plan for handling clinical emergencies at a distance |
| • Clinical and technical competency |
| • Perceived value of improving care to remote site (eg, diagnosis, treatment, and/or disease management) ⁵¹ |
| • Sense of isolation during workday ¹⁰⁵ |
| • Reports of telehealth/technology burnout (eg, increased "screen time") |

important strategy to increase use.⁴⁷⁻⁵⁰ A leading expert has even recommended that training become a mandated requirement for telepsychiatry clinicians.⁴⁷

Telehealth competencies have been developed in recent years, which align targeted clinical outcomes with teaching and supervisory methods, evaluation, and feedback. One article provides an overview of needed *telepsychiatric* competencies and also *telebehavioral health* competencies across mental health specialties.^{111,112} Other guidelines have outlined clinical evaluation and care; administration; cultural competence and diversity; legal and regulatory issues; evidence-based and ethical practice; and mobile health, smartphone, and apps.^{57,111} The American Telemedicine Association now offers accreditation and webinars.⁸ Training handbooks and book chapters¹¹³ as well as online courses are also available to help train and educate interested clinicians.^{69,114}

REIMBURSEMENT/FINANCIAL VIABILITY

Although improving over time, reimbursement and financial viability have been viewed as a barrier to telepsychiatry growth for more than the past decade.^{3,8,27,38,59,67,77,78,80,85,86,89,115-118} Telepsychiatry has been largely supported by federal, internal, or grant funding, with relatively few programs with long-term commercial

sustainability.^{3,8,116,118} In one survey, nearly half of respondents indicated they did not provide telemedicine services because of lack of payment.¹¹⁵ Billing clinicians reported lack of reimbursement and related problems including denials as well as previous authorization/case reviews required.^{54,115} Medicare coverage only for rural areas (with limited exceptions) poses a barrier to expansion.¹⁹ Furthermore, for clinicians starting out, videoconferencing/infrastructure costs may not be covered.^{27,78,119}

Inconsistent reimbursement across payers for telepsychiatry services poses another barrier.^{27,59,67,77,80,85,86,116} With a constantly changing and complicated insurance market, clinicians understandably report lacking knowledge in this area. Many respondents did not know which private payers paid for telepsychiatry and frequently erroneously identified the insurance companies most frequently reimbursing as the companies that do *not* pay.¹¹⁵ Clinicians also report not knowing how to bill for telepsychiatry services (different billing codes and modifiers), though some new practice parameters address this concern.^{77,115} Because inadequate reimbursement can limit telemedicine use, many states have passed telemedicine parity laws mandating reimbursement for telemedicine visits.^{7,10,19,98,106,120}

Cost-effectiveness studies warrant further investigation.⁹¹ One study found that telepsychiatry costs more than in-person treatment per hour,¹²¹ whereas others have found a 40%⁶³ or even 70% cost reduction.¹²² A recent study involving a multistate telepsychiatry intervention serving rural American Indian/Alaska Native populations noted that telepsychiatry session costs were estimated to be \$93.90 as compared with \$183.34 per session cost for psychiatrist travel and \$268.23 for patient travel.¹²³ Several other studies support cost-effectiveness.¹²⁴⁻¹²⁷ Further cost-benefit analyses could ease financial concerns.^{26,119,123,128}

LICENSURE AND CREDENTIALING

Most states require psychiatrists to be licensed in their home states as well as the

state(s) in which their patients are physically located.^{27,59,78,87} For 93.5% of telemental health visits in 2014, the beneficiary and clinician were in the same state,¹⁹ suggesting that the time and expense of maintaining multiple licenses, along with complicated laws that differ between states, poses a significant burden to physicians.^{6,54,59,80,87,129}

Only 14 states extend conditional or telemedicine licenses to out-of-state physicians.^{19,120} A recent bill proposing that clinicians in federal health plans would need to license only in their physical state to care for eligible patients anywhere in the nation died in committee.⁵⁹ Many bills have been proposed to expand telemedicine services in Medicare, none of which have become law.¹⁹ There has, however, been a recent launch of the Interstate Medical Licensure Compact, which will streamline medical licensure process across states and support expanded use of telemedicine. At least 18 states have adopted the compact as of 2017.⁷⁷ Licensure solutions suggested include establishing national licensure, assigning responsibility to the referring physician with the consulting telepsychiatrist's opinion serving as a recommendation, or determining that the patient is being "electronically transmitted" to the consultant's state, eliminating the need to license in the patient's state.^{19,27}

The considerable administrative burden required to be credentialed and privileged at all facilities a telepsychiatrist would work with poses another barrier.^{59,86} More recently, the Centers for Medicare and Medicaid Services released a new rule that streamlines telepsychiatry credentialing and privileging by allowing the decision to rely on the distant site facility, helping to mitigate this barrier.⁸⁷

LEGAL/REGULATORY

Legal and regulatory barriers may contribute to difficulties with telepsychiatry practice. Some states mandate conditions of clinical encounters or require that a telepsychiatrist maintain a physical practice location in that state.^{59,77} The Ryan Haight Online Pharmacy Consumer Protection Act of 2008 was

TABLE 3. Regulatory Barriers After Successful Adoption of Telepsychiatry

Case example: Sam, a 10-year-old boy with a history of attention deficit hyperactivity disorder treated with a stimulant, was referred by his school to a telepsychiatry clinic after moving into a rural area. After a videoconference visit, a thoughtful plan was made to increase his stimulant dose and add psychosocial treatments. Although telepsychiatry succeeded in providing convenient access to psychiatry in a resource scarce area and provided an accurate diagnosis with valuable treatment recommendations, the stimulant medication was unable to be prescribed by the telepsychiatrist because of limitations imposed by the Ryan Haight Act. The telepsychiatrist attempted to liaise with rural primary care clinicians in the area. Challenges included no pediatricians within the county or adjacent counties. Sam did not regularly meet with a physician, and the nurse practitioner he had seen previously was not open to assuming the attention deficit hyperactivity disorder care or comanagement with the telepsychiatrist. This left the patient and guardian no option other than traveling a long distance to see a psychiatrist in person, defeating the purpose of telepsychiatry. The guardian did not have the resources to travel 4 hours to the academic health center for an on-site appointment and the travel was not supported through the child's insurance.

Take home points: The outcome was that Sam (and other patients like him) may not have access to beneficial medication, leading to increased symptoms and a lower quality of life for him and his family. Regulatory barriers, such as the Ryan Haight Act, remain problematic, even where telepsychiatry has otherwise been successfully adopted.

designed to protect against illegitimate dispensing of controlled substances online without appropriate physician oversight, but had the unintended consequence of interfering with prescribing through telepsychiatry encounters, as revealed by the case presented in Table 3. Although it stated that telemedicine is an exception, it technically requires at least one in-person evaluation before prescribing a controlled substance.^{59,87} Although the Drug Enforcement Administration noted that it does not intend to interfere with the legitimate prescribing of controlled substances, the legislation is difficult to follow.

Other legal and regulatory barriers include the fact that some state laws may prohibit telepsychiatrists from participating in the civil commitment process.⁷⁸ Regulatory and procedural guidelines vary by jurisdiction.⁷⁷ Clinicians need to learn local civil commitment laws and duty to report/warn/protect requirements.⁸⁷ States also vary in the requirement for specific written consent to deliver care via videoconference¹⁶ as well as insurance requirements and regulations.⁸⁷

There is a marked variation in telemedicine use across states.⁹¹ States with a telemedicine parity law and a pro-telemental health regulatory environment had notably higher rates of telemental health use than those that did not, suggesting that addressing the legal and regulatory environment

may substantially affect the use and growth of telepsychiatry.¹⁹ There was a roughly 2-fold higher rate of telemental health use in states with a more favorable regulatory environment¹⁹ and use increased considerably faster in states with parity mandates.⁷

LIABILITY, LITIGATION, AND MALPRACTICE

Clinicians have raised concerns about liability and litigation.⁸⁰ Nonusers of telemedicine are more likely to believe that it would increase the risk of malpractice law suits.⁵⁴ Despite literature supporting the safety and effectiveness of telepsychiatry,⁵ questions about liability risks remain open^{86,87} because of a relative lack of case law in this area.⁸⁰ The 2017 American Telemedicine Association practice guidelines for telemental health with children and adolescents recommend that clinicians verify that their liability insurance covers activities in all sites of telepsychiatry practice.¹⁶ For many clinicians, risk management can be one of the most anxiety-laden factors of home-based clinical videoconferencing in particular, which could deter them from providing services to patient in their homes⁶⁷ or from pursuing telepsychiatry in general.

TRADITION/HABIT/RESISTANCE TO CHANGE/DISRUPTION OF ROUTINE AND WORKFLOW

Habit has been identified as an important, often overlooked factor in slow diffusion/

adoption of telemedicine.^{54,117} Focus groups of behavioral health clinicians identified potential benefits of telepsychiatry, but they remained reluctant to try it,²⁰ perhaps, in part, because of habit.⁵⁴ Cognitive neuroscience has established that people often act based on habit. New ways of doing things require deliberate conscious effort.¹³⁰ Physicians develop efficient practice routines, and changing these habitual routines involves a temporary loss of efficiency.¹³⁰ In the moment, doing things differently requires too great an investment of time and energy, especially if there is a steep learning curve or low intrinsic motivation.^{20,54,81,82,117,130} In short, clinician's habits represent a strong inertial force.¹³⁰

Practicing telepsychiatry may involve traveling to a special room, making appropriate technical arrangements, and scheduling and documentation changes, complex data sharing agreements, and navigating several types of electronic medical records. This amount of inconvenience and disruption of routine may dissuade clinicians from participating in telepsychiatry.^{51,59,86} Portability and ease of use have been highlighted as priorities to clinicians.^{3,20,86} The need for frontline clinician input in designing telepsychiatry systems is particularly important.²⁷ Top-down approaches may contribute to frustration with and subsequent failure of telemedicine systems.^{31,54,131}

Clinical office space is often a barrier.^{107,108} For basic setup, one needs an appropriate room (well lit; with the ability of the camera to pan, tilt/zoom, and see all who are present; toys that are not noisy for children; well-placed microphones; rooms large enough for several people, but not too large that younger kids will wander; a dark background; diffuse lighting to reduce glare; and heavy chairs to reduce movement on screen).^{16,51,77}

In some care models, it may also be necessary to employ staff to physically be present to aid in support activities such as physical examination and vital signs, maintaining medical records, obtaining consent, registering and scheduling patients, fielding calls from families, solving technical and

equipment problems, intervening in case of emergency or crisis, coordinating care with local clinicians and services, and coordinating laboratory results and prescriptions.^{16,33,34,51,52,54,78} Pharmacotherapy is one of the most frequently requested services for telepsychiatry, so clearly outlining who prescribes and monitors medications in adherence with state and federal regulations is important as well.¹⁶

In addition to temporary loss of efficiency in deviation from habit, there are deep-seated cultural traditions in medicine that hamper expansion of telepsychiatry. Physical colocation is a maxim of clinical practice with enormous culture significance. Over the course of two millennia, the physical presence of the doctor has been regarded as necessary for clinical work.⁴⁶ Although the technology on which telemedicine is founded itself is subject to rapid development, tradition and culture change slowly.^{46,47}

A survey to clinicians considering telemedicine revealed lack of desire or unwillingness to change clinical paradigms through use of telemedicine as the third rank ordered barrier.⁸⁰ The results of another survey suggest that demographic characteristics (such as age) do not fully explain participation patterns in telemedicine.⁵⁴ Rather, it seems physicians express a range of typologies in terms of adoption of new technologies in their practices, ranging from the so-called early adopter to the unwilling-uneasy participant.^{54,82,130} Most telehealth projects were initiated by champions who also played a critical role in translating projects to ongoing services. Champions support clinician acceptance by legitimizing telepsychiatry as effective, safe, and normal and by promoting relationships between telepsychiatrists and remote sites.⁹⁰

Culture change may be increasing in speed, with a growing acceptance of integration of technology into health care,¹² especially in "digital natives" who grew up using technology.⁴⁷ Growing numbers of psychiatrists are signing for telepsychiatry positions.¹⁷ Although little has yet to be published about their reasons for doing so, cited factors include desire to bring care to

support resource scarce areas,⁵⁰ flexibility/control over schedules, ability to diversify practice, desire to work part-time, and the opportunity to work from home.^{17,47} As a growing number of clinicians accept telepsychiatry practice, there will be new challenges to adapt to, including risk of social and professional isolation, difficulty separating work from home, and possibly a more sedentary lifestyle.¹⁰³ How telepsychiatry practice affects clinician well-being warrants further study. Recommendations to improve well-being in telepsychiatry practice include establishing clear work and personal life boundaries, scheduling exercise and social activities, building relationships with staff via telepsychiatry, and diversifying work experiences or perhaps practicing a combination of telepsychiatry and in-person care.¹⁰³

CLINICIAN ACCEPTANCE/CLINICIAN AS GATEKEEPER

Clinicians have been cited as the most significant initial gatekeepers to telemedicine use.^{20,27,35,59,69} Although patients and clinicians share many of the same concerns about telepsychiatry, patient satisfaction remains high. There are more barriers from the clinicians' perspective.^{51,59} Low uptake rates of telepsychiatry use and survey data suggest that many clinicians remain skeptical about this mode of care,^{11,49,58,69,80,132} and negative biases remain a barrier at the health system leadership and clinician level.⁸ In contrast to typically positive patient satisfaction with telemental health services, clinicians often report lower expectations about the value of telemental health and lower satisfaction.^{11,35,46,51,59,99,132,133} Despite good concordance of diagnoses and treatment recommendations between telepsychiatry and in-person encounters, psychiatrists maintained preference for face-to-face assessments.⁹⁹ Clinician reluctance may even be underappreciated, as many studies reporting on clinician attitudes may be subject to inherent selection bias, whereby clinicians participating in studies are already accepting of telemedicine.²⁰

Clinician acceptance is therefore a key factor for sustainable telehealth services.^{51,90}

If telepsychiatry services are to expand to meet the growing unmet psychiatric need,¹ we must first start by addressing the concerns of clinicians who would provide services. Increased exposure to telepsychiatry and education while in training^{47,50} would serve to improve comfort and familiarity, reduce concerns about ability to connect and establish rapport (as clinicians polled reported improved attitude toward telepsychiatry after having experienced it),³⁵ address uncertainties about the technology involved,⁵⁰ and mitigate temporary loss of efficiency while learning new ways of providing care.^{47,50} Education for clinicians should include instruction on best practices, strategies for ways to establish and maintain relationships at a distance, and guidance about reimbursement and billing.^{47,57,77,112,114,134} In addition, there is support for a "hybrid model" that extends and supplements in-person care, a model with potential to improve physician and patient satisfaction and acceptance.^{8,19,30,68,69,103,135,136}

Benefits that attract psychiatrists to telepsychiatry that deserve further exploration include flexibility in scheduling and increased diversity of practice by working in different settings (schools, prisons, homes, and hospitals) and with different populations (prisoners, students, employees, hospital patients, and outpatients).^{47,50,119} In addition, the opportunity to support local practitioners and provide much needed care into rural and remote communities is a major motivation of many telepsychiatrists.⁵⁰ One can now live almost anywhere in the world and provide care elsewhere.^{12,47,119} Telepsychiatry may also increase efficiency and productivity as it can eliminate commuting time.^{17,50,103} It has also been noted that psychiatrist parents were more comfortable with an earlier return to work after illness of a child or after maternity leave because they were able to work from home.¹¹⁹

From a health care organization's point of view, efforts should be made toward funding rigorous research to strengthen the growing evidence base; investment in portable, intuitive, and reliable technologies with close

technical support^{47,50}; and close attention to clinician workflow with collaboration with clinicians on the ground to establish convenient and efficient processes and procedures.^{47,50} In other words, we need to make it easy for clinicians to provide telepsychiatric care.^{47,50} Offering scheduling control and flexibility and the opportunity to work from home may attract the participation of more clinicians.^{47,50,103} The support of local champions may be key to successful implementation and maintenance of programs,^{30,48,137,138} as experienced clinicians can forge community relationships, teach their colleagues, legitimize the service, and provide enthusiasm and boost morale.¹³⁸

From a legislative point of view, continued support for streamlining medical licensure and credentialing and further clarification of legislation such as the Ryan Haight Act would also be helpful. Reimbursement has already improved, but better consistency across payers would also support growth. Telemedicine parity laws are encouraging growth of telemedicine by requiring commercial or Medicaid plans or both to pay for care via telemedicine.^{7,10,120}

CONCLUSION

Telepsychiatry is an effective way to improve access, enhance quality, and provide efficient care. Clinicians' concerns reflect a need for better system workflow integration, policy change, and shifts in organizational culture. Telepsychiatry has grown substantially in the past two decades, but further expansion is still required. By focusing on physician engagement and legislative change, the remaining barriers to acceptance may be further reduced and telepsychiatry's full potential for addressing mental health needs may be realized.

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