Telepharmacotherapy for Child and Adolescent Psychiatric Patients

Sharon Cain, MD, and Susan Sharp, DO

Abstract

Objective: The purpose of this study is to review and discuss the status of telepsychiatry practice, particularly as applied to treating children and adolescents with psychotropic medications, which is termed ''telepharmacotherapy.''

Methods: The literature pertinent to telepsychiatry practice is reviewed, followed by a presentation of the challenges to implementing telepharmacotherapy, potential solutions, current controversies, and future directions, combining insights from the literature with the authors' own experiences.

Results: Telepsychiatry services for children and adolescents are expanding, and provide needed pharmacotherapy for patients who are underserved by available resources. The evidence base supporting the effectiveness of telepsychiatry practice and telepharmacotherapy is still emerging, and consists mainly of feasibility and satisfaction studies with limited outcome data. Although a number of challenges to this mode of care delivery currently exist, the authors outline potential solutions for those challenges that are consistent with existing guidelines for clinical practice.

Conclusions: Telepsychiatry appears to be a feasible and satisfactory alternative to in-person care, and a valid option for increasing access to psychopharmacotherapy for children and adolescents. Although the evidence base is still emerging, and practitioners may face a number of challenges, solutions are presented that may help to overcome those challenges.

Introduction

THE ASSOCIATED TERMS ''TELEHEALTH'' AND ''TELEMEDICINE'' are broadly defined by the American Telemedicine Association (ATA) as ''the use of medical information exchanged from one site to another via electronic communications to improve patients' health status'' (American Telemedicine Association 2014). Similarly, telemental health (TMH) is broadly defined as the ''provision of mental health and substance abuse services from a distance'' (American Telemedicine Association 2009). In this article, the authors address telemedicine and TMH more narrowly. Telemedicine refers to medical care delivered via interactive videoconferencing and TMH encompasses the provision of psychiatric and/or psychological services using interactive videoconferencing. When psychiatric care is delivered using interactive videoconferencing, the term ''telepsychiatry'' is used. The term ''patient site'' will refer to the site where the patient is located while receiving the telepsychiatry service and the term ''provider site'' will designate the location of the telepsychiatrist.

Telepsychiatry is a form of TMH that includes psychiatric procedures such as diagnostic evaluations, pharmacotherapy, and other medically oriented interventions. The use of telepsychiatry in underserved communities is becoming a welcome solution for filling gaps in service availability caused by the shortage and unequal distribution of child and adolescent psychiatrists. When such care is offered, diagnostic assessment and pharmacologic treatment are the most requested services (Myers et al. 2007; Carlisle 2013). The treatment of children and adolescents with psychotropic medications via telepsychiatry will be referred to in this article as ''telepharmacotherapy.'' Because the data for this application are still emerging, telepsychiatrists providing such treatment may want to consider the following: What is the evidence base supporting the prescription of psychotropic medications via interactive videoconferencing for children and adolescents and what are the challenges and potential solutions associated with this mode of treatment delivery?

The purpose of this article is to review the status of telepharmacotherapy as applied to treating children and adolescents with psychotropic medications. The methods used include a review of the pertinent literature, a discussion of challenges that arise during practice and their potential solutions, current controversies, and future directions. The discussion will combine insights from the literature with the authors' own experiences.

Literature Review

Literature supporting TMH

There is a growing body of literature supporting TMH as an effective service delivery model, but much of these data are from adults (Fortney et al. 2013; Hilty et al. 2013). The literature supporting the effectiveness of TMH with children and adolescents is more limited. Most reports are descriptive in nature and demonstrate the feasibility of implementing TMH services (Myers

Department of Psychiatry and Behavioral Sciences, Kansas University Medical Center, Kansas City, Kansas.

et al. 2007) and the acceptability of TMH care to providers (Elford et al. 2001), families (Elford et al 2001; Greenberg et al. 2006; Myers et al. 2008), and youth (Elford et al. 2001; Myers et al. 2006). A small number of outcome studies exist. Controlled studies have demonstrated the accuracy of diagnoses made during TMH (Elford et al. 2000; Nelson et al. 2009; Stain et al. 2011; Reese et al. 2013) and the effectiveness of psychotherapy delivered over videoconferencing (Nelson et al. 2003; Xie et al. 2013).

Literature supporting pediatric telepharmacotherapy

The literature specifically addressing telepharmacotherapy with children and adolescents is still emerging. There is only one pharmacologic treatment study reported (Myers et al. 2015). Myers and colleagues randomized 233 children diagnosed with attention-deficit/hyperactivity disorder (ADHD) to receive 22 weeks of treatment in one of two groups. The active control group received a single telepsychiatry consultation, with recommendations made to primary care providers (PCPs) to implement at their discretion during the trial. The intervention group received six sessions of pharmacotherapy via videoconferencing during the 22 week trial, complemented by caregiver behavior training delivered in person by a community therapist who was trained and supervised remotely. The results showed that the telepsychiatrists demonstrated high fidelity to consensus-based pharmacotherapy algorithms (Pliszka et al. 2006). Participants in both the intervention and consultation groups improved, and those who received the six session intervention showed significantly better ADHD outcomes per caregivers' reports than did the consultation group (Myers et al. 2015). This study provides high quality evidence for the ability to provide guideline-based care through videoconferencing and the "added value" that a short-term telepsychiatric intervention provides over a single teleconsultation to primary care. Additionally, over the 8 weeks following participation in the trial, the treatment group had more follow-up sessions and active medication management by their PCPs, suggesting that a short-term intervention may also help PCPs improve their care for children with ADHD (Myers, personal communication, July 2014). Further controlled studies testing the effectiveness of telepsychiatry in providing evidence-based pharmacotherapy to youth are now needed.

Two retrospective chart reviews describe the results of telepsychiatry consultation. One study reviewed the charts of 223 patients and found that consultation resulted in changes in diagnosis (48%), treatment (81.6%), and clinical improvement (60.1%) (Marcin et al. 2005). The other investigation reviewed 100 patient charts after consultation. The results showed that consultation was associated with changes in diagnosis and treatment. Twenty-seven percent of those recommendations involved starting or managing medication. The medication classes included stimulants, antidepressants, and antipsychotics (Boydell et al. 2007).

Other evidence supporting the use of telepharmacotherapy for young patients is indirect, gleaned from published reports of successful telepsychiatry programs. These programs describe medication treatment provided to youth in a variety of outpatient settings such as rural mental health centers (Cain and Spaulding 2006), schools (Kriechman et al. 2010), daycare (Spaulding et al. 2011), and juvenile justice facilities (Myers et al. 2006). Such programs serve patients with a wide range of ages and diagnoses, comparable to the profile of patients treated in person, with ADHD being the most common diagnosis (Myers et al. 2007; Yellowlees et al. 2008; Myers et al. 2010; Spaulding et al. 2011). A recent study demonstrated that the practice guidelines for the treatment of ADHD

(American Academy of Pediatrics 2011) can be reliably implemented in the school setting through videoconferencing (Nelson et al. 2012). Overall, there is a growing consensus that telepsychiatry is a reasonable alternative to in-person pharmacologic care for children with ADHD who do not have regular access to expert care (Palmer et al. 2010). It offers a new approach to collaborate with PCPs in meeting the increasing expectation that they manage common psychiatric disorders of childhood and adolescence in their practices (Yellowlees et al. 2008; American Academy of Pediatrics 2009; Goldstein and Myers 2014).

Additional information regarding prescribing practices for children and adolescents treated through telepsychiatry can be found in the American Academy of Child and Adolescent Psychiatry's (AACAP) "Practice Parameter for Telepsychiatry with Children and Adolescents" (Myers and Cain 2008). Broader guidelines are available at the ATA web site (American Telemedicine Association 2009, 2013).

Because of the limited literature assessing the effectiveness of child and adolescent telepharmacotherapy, the remainder of this article will present the state-of-the-art practice for telepsychiatry providers based on the available evidence base with adults and youth, as well as the procedures established by practicing telepsychiatrists. We review the challenges presented in prescribing for youth through telepsychiatry, and potential solutions to ensure adherence to current best practices.

Challenges and Solutions

Although telepsychiatry increases access to evidence-based services for children and adolescents living in underserved areas, it does not come without its hurdles. Following are some key challenges that telepsychiatrists encounter in providing telepharmacotherapy, and proposed solutions.

Challenge 1

Challenge 1 is: Establishing a physician–patient relationship and completing a diagnostic evaluation via telepsychiatry prior to pharmacotherapy treatment.

Solution

Consistent with standards established for psychiatric care provided in person, telepsychiatrists must establish a physician–patient relationship and complete an appropriate diagnostic evaluation prior to prescribing treatment. Such guideline-based, interactive care helps to define telepharmacotherapy as an acceptable alternative to in-person pharmacologic care and differentiates it from the illicit practice commonly known as "internet prescribing"; in which patients obtain prescriptions without appropriate evaluation. Federal legislation restricting this practice was enacted in the Ryan Haight Online Pharmacy Consumer Protection Act of 2008 (Public Law No: 110-425) (https://www.govtrack.us/congress/bills/110/hr6353/text). This law requires a telepsychiatrist to perform an "in-person medical evaluation of a patient" before prescribing controlled substances via the Internet, but it also recognizes telemedicine as a valid exemption from the in-person requirement (Linkous 2014). Individual state laws addressing this topic may have additional requirements. Prospective telepsychiatrists are encouraged to explore existing state and local regulations in both the psychiatrist's and patient's geographic locations.

Resources to guide telepsychiatrists in establishing a physician–patient relationship through videoconferencing are addressed in the

guidelines developed by the ATA (American Telemedicine Association 2013) and outlined in a ''Model Policy for the Appropriate Use of Telemedicine Technologies'' published by the Federation of State Medical Boards (SMART Workgroup 2014). According to the policy, three key expectations for the teleprovider to accomplish prior to treating a patient through videoconferencing include: 1) Verifying the location and identity of the patient, 2) providing evidence of the physicians' credentials, and 3) obtaining informed consent that includes disclosures related to telemedicine. These tasks typically can be accomplished with help from support staff at the patient site. Patient identity can be verified by obtaining demographic data and making copies of documents, such as medical/insurance cards and driver's licenses. Evidence of the telepsychiatrist's credentials can be made available to patients, and copies of credentials can be displayed at the site. Site staff can also distribute privacy notices, answer questions about privacy practices, and facilitate the signing of consent forms.

When establishing a treatment relationship with patients and their families via telepsychiatry, the telepsychiatrist should orient the family to the clinical service and clarify expectations. Providing a letter that outlines the operation of the service and policies can be helpful to families, as well as to staff at the site. The letter may include topics such as the availability of the telepsychiatrist, contact information, emergency numbers, the expectation to collaborate with the PCP, and means of obtaining prescriptions.

A diagnostic evaluation must be completed prior to prescribing treatment (American Academy of Child and Adolescent Psychiatry 2009). The history and mental status examination can be taken via videoconferencing, but obtaining a physical examination, vital signs, weight, and height requires coordination with the patient's PCP's site. Typically, telepsychiatrists ask PCPs to conduct a physical examination prior to referral, or after the telepsychiatry evaluation, but prior to medication being prescribed. Vital signs and growth measurements can be obtained by a trained clinical staff person, such as a nurse, at the patient's PCP's site. If a staff person is not available, it may be possible to make arrangements with local providers to obtain the measurements and communicate them to the telepsychiatrist. In such cases, it is helpful to develop a brief memorandum for patients to take to their PCPs requesting vital signs and growth parameters. This information would ideally be entered into a shared electronic health record (EHR) or collected by a clinical coordinator prior to the telepsychiatry session.

Challenge 2

Challenge 2 is: Determining the technology and connectivity needed to provide telepharmacotherapy services.

Solution

In addition to meeting the basic requirements for security and confidentiality of the communication through videoconferencing (American Telemedicine Association 2013), equipment selection is driven by the need for the telepsychiatrist to perceive specific details during the interaction. In general, higher bandwidth and greater resolution result in higher quality visual and auditory signals. The ATA recommends a minimum bandwidth of 384 kb/s and a minimum screen resolution of 640×480 pixels at 30 frames per second for direct telehealthcare applications (American Telemedicine Association 2013). High quality video and audio communication may be more important for pharmacotherapy than for psychosocial interventions provided through videoconferencing, as conducting a careful mental status examination is a prerequisite for medical decision making. For example, in order to appropriately adjust medication, the telepsychiatrist must be able to follow a child's movements, note tics, recognize affective shifts in verbal and nonverbal communication, and determine subtle adverse effects such as akinesia and tremor, as well as differentiate antipsychotic-induced blunting from a depressed affect. Higher bandwidth also facilitates the provision of psychoeducation and the development of rapport that encourages adherence to treatment.

Challenge 3

Challenge 3 is: Selecting a model of care that defines the telepsychiatrist's role in the patient's system of care, coordinates pharmacotherapy with PCPs, and complements the mental healthcare system in the local community.

Solution

Models of care can be categorized by the role of the telepsychiatrist, whether directly prescribing medication, providing consultation to another treating provider (usually a PCP), or collaborating with another provider, such as a midlevel practitioner, in sharing medication management (Myers and Cain 2008).

The model of direct telepharmacotherapy provides the greatest level of privacy and specialty care to the patient, although it is the least efficient use of the telepsychiatrist's time and least effective in redistributing the psychiatric workforce. In this model, the telepsychiatrist maintains responsibility for treating the patient and coordinating care with the PCP, who must be informed about any prescribed psychotropic medications. This coordination of care may be more crucial with telepsychiatry than with usual in-person care, as PCPs may be relied upon for certain interim and urgent clinical needs. One way to accomplish this coordination of care is to routinely request written permission to communicate with the PCP when obtaining consent for telepsychiatry treatment. Such collaboration is consistent with recommendations from the American Academy of Pediatrics (AAP) to help integrate mental healthcare into pediatric practice (American Academy of Pediatrics 2009; Carlisle 2013). The telepsychiatrist should also know about other services that the patient is receiving, whether or not those services are evidence based, and how well the patient is using the services. Lack of such information risks clinicians' increasing medication doses or using medication inappropriately to contain symptoms that should be addressed with psychosocial services.

The consultation model of telepsychiatric care is generally a more efficient use of the telepsychiatrist's time than direct care. Providing consultation to primary care optimizes communication between the telepsychiatrist and the PCP and the integration of psychiatric treatment into the patient's medical home. In one consultation model, following the initial evaluation, the telepsychiatrist and family can decide whether they prefer that the telepsychiatrist prescribe or make recommendations to the PCP (Myers et al. 2007). In another model, the telepsychiatrist provides direct care for a period of time until the patient's symptoms stabilize, then transitions the care to the PCP (Carlisle 2013). In addition to consulting with PCPs, telepsychiatrists may provide consultation to other providers, such as a general psychiatrist working at a mental health center.

In the collaborative models of care, the telepsychiatrist collaborates with another provider, often a midlevel practitioner, such as an advanced nurse practitioner. The midlevel practitioner may provide continuity of care by following patients for routine medication checks and writing stimulant prescriptions between telepsychiatry visits. In addition, the practitioner may be available for

unscheduled urgent needs, such as crisis management. This model helps to extend the reach of the telepsychiatry service and provides the midlevel professional with supervision and the opportunity to learn about pharmacotherapy from the telepsychiatry provider. Evolving collaborative care models integrate a telepsychiatrist into a primary care practice with a care coordinator who liaises between the telepsychiatrist and PCP, tracks patients' visits, and helps to make timely medication adjustments (Fortney et al. 2013).

In the author's experience, the presence of a "clinical champion" at the patient site can be a major asset in determining and implementing the model of care. The clinical champion represents the telepsychiatry service to the family and community, advocates for its support, coordinates intersite communication, and ultimately contributes to the success of the service. The clinical champion also helps telepsychiatrists familiarize themselves with the local healthcare system, consider how the new telepsychiatry clinic will complement existing services, and determine availability of resources needed to provide telepharmacotherapy, such as laboratory and electrocardiogram (ECG) monitoring, mental health services, and emergency services.

Regardless of the model chosen, good communication between the telepsychiatrist and other providers regarding medications prescribed and medication changes ensures safe, ethical, and effective care.

Challenge 4

Challenge 4 is: Determining the infrastructure needed at the site where the patient will be receiving the telepsychiatry services to provide guideline-based care.

Solution

The type of site where the patient receives care may be a determining factor for the level of infrastructure or assistance needed for the telepsychiatrist to practice guideline-based care.

Specific infrastructure needs will vary depending upon whether the patient will be receiving the telepsychiatry services in a medical or nonmedical facility. If it is a medical facility, it may be possible to use the existing facility infrastructure for tasks such as scheduling and greeting patients, maintaining medical records, and ensuring a safe and confidential space for patient encounters. The telepsychiatrist must determine whether an examination room is appropriate or whether the equipment in the room will overstimulate a child. In such cases, a small conference room may be needed. The room must allow sufficient space to observe the patient while sitting, standing, and walking to monitor for signs of tremor, abnormal movements, or alterations in gait that can emerge with medication treatment. Lighting should provide accurate observation of faces and facial expressions and prevent shadows that interfere with video quality.

If the patient is in a nonmedical facility, such as a school or daycare center, more planning is needed, especially regarding procedures for managing medical information and ensuring confidentiality. Staff at a nonmedical facility may not be fully aware of the demand for confidentiality and may require specific training. To meet the infrastructure needs, it may be necessary to rely on the telepsychiatrist's site for scheduling appointments and maintaining the medical record. The telepsychiatrist may also need to select, generate, and provide the clinical forms for use at the patient site. A minimum level of support for the telepharmacotherapy service could be established at the patient site with an adequately equipped, confidential interview room and a clinical support person. The specifications for the interview room are the same as those for a medical

site, as have been described. The clinical support person may facilitate the patient's movement into and out of the videoconferencing room, be available for urgent needs, distribute educational information to patients and families, and assist with obtaining consent from patients and their parents for medication treatment. It is helpful if the support person, usually a therapist, nurse, or social worker but possibly a medical assistant or other paraprofessional, is part of the professional staff at the facility.

Challenge 5

Challenge 5 is: Preparing documentation and maintaining records.

Solution

An EHR that is shared between the telepsychiatrist and PCP or mental health center is ideal for efficiency, confidentiality, and information sharing. To accomplish this, it is necessary to determine which site maintains the EHR and which one shares the record with the other provider. If the EHR is held by the site where the patient will be located, the telepsychiatrist may need to learn that EHR system and gain remote access. Contracts or agreements for data sharing may be necessary for this access (Brooks et al. 2013). If unable to share an EHR, the telepsychiatrist may prepare reports themselves and deliver them to the patient site and PCP through the mail or fax, which would maintain compliance with the Health Information Portability and Accountability Act (HIPAA). Alternatively, the telepsychiatrist may dictate reports into a digital recorder and then upload the data to a web site at the site where the patient is located. The transcribed reports would then be returned electronically to the telepsychiatrist for review and signature.

If the patient is treated at a nonmedical facility, telepsychiatrists may maintain the medical record at their location and decide which records are appropriate to share with the site where the patient is located while reinforcing the need for confidentiality of any information that is shared. If the patient is located at a school or juvenile detention facility, the patient's medical information should be in a protected area, such as the office of a nurse or counselor. The authors have used brief forms summarizing pertinent, but limited, information to share with patient sites. The telepsychiatrist should have signed consent forms from the patient to release this information, or, depending upon local policy, a business agreement between the telepsychiatrist and the site may allow for routine release of medical information. Whichever arrangement is used, the details of the process should be transparent to the patient. The information could be provided in the consent for telepsychiatry or the privacy policy statements.

Challenge 6

Challenge 6 is: Managing the logistics of medication prescribing and maintaining compliance with professional practice standards and with state and federal regulations.

Solution

Prior to starting treatment, it is important to establish procedures for prescribing medications via videoconferencing (American Telemedicine Association 2009). Protocols are needed to ensure compliance with practice standards and define the roles and duties of staff at both sites. For example, a system is needed to obtain documents from the site where the patient is located, including informed consent for treatment, background forms completed by

the family, records of medical care and prior medication trials, rating scales, laboratory values, and other test results. Another important process is to ensure that both the provider and patient locations have current and accurate information about the prescriptions provided. If the telepsychiatrist's note is not fully consistent with medication orders called to the pharmacy or written as prescriptions, there is an increased risk of medication errors or conflict between the patient and the staff at the patient site. In the absence of a shared EHR, the telepsychiatrist may orally communicate the medication details to the site coordinator where the patient is located, send a summary of the medications generated from the telepsychiatrist's EHR, or send copies of prescriptions to the site where the patient is located. Maintaining dual records may be burdensome, but doing so is necessary to effectively coordinate care.

All parties should know the procedures for medication prescribing and obtaining refills, which may differ for controlled versus noncontrolled drugs. Prescriptions for drugs that are not controlled can be filled by calling the pharmacy, writing and mailing, or e-prescribing (sent electronically to a pharmacy). E-prescribing, which fits logistically with telepsychiatry, is an increasing practice that has been approved for pediatric practice by the American Academy of Pediatrics (Johnson et al. 2013).

Controlled substances, such as schedule II stimulants, have more regulatory constraints and prescriptions for them cannot be refilled or called to the pharmacy. Stimulant prescriptions can be mailed directly to patients' homes or their pharmacies. Some sites may have additional requirements for prescriptions for controlled drugs. They may require that prescriptions be mailed to the site where the patient receives services for distribution to families, or that copies of prescriptions be maintained according to the specifications of a Medicaid contract or other regulations. E-prescribing of stimulants is also an option in some venues, because the Drug Enforcement Administration (DEA) approved the electronic prescription of controlled substances (EPCS) in a Final Rule in June 2010 (Federal Register 2010). This DEA approved practice is approved in most states, but has increased more slowly than e-prescribing in general, likely because of the Final Rule's necessary security restrictions and collaboration requirements (Department of Justice, Drug Enforcement Administration, Office of Diversion Control: http://www.deadiversion.usdoj.gov/ecomm/e_rx/). One security restriction requires the provider to have a two factor authentication, including a token or key used in the computer and a password. In a report on early experience with EPCS, providers were generally accepting of this technology and found it "less burdensome" than expected (Thomas et al. 2013).

Difficulties with patients' families failing to schedule appointments in a timely fashion and running out of medication is not unique to telepsychiatry, but can be more problematic than with in-person care, because of the telepsychiatrist being less available. Forethought and planning with a telepsychiatry coordinator at the site where the patient receives services should address the issue. An online registry and tracking system can help a coordinator to anticipate patients' needs (Unutzer et al. 2002).

Challenge 7

Challenge 7 is: Managing urgent and interim care.

Solution

As with in-person treatment, a safety plan for managing emergencies and unanticipated events is needed to provide guideline-based care and to minimize confusion for patients and staff during the crises. Urgent telepsychiatry care is helpful to patients and communities, but difficult to arrange. If offered, patients and staff should be informed of how to access such services. If not, then alternative plans should be identified and patients' families educated about what steps to take when they have urgent concerns. It is helpful to have a written policy that can be given to patients' families detailing specific instructions for accessing urgent and emergent care. The policy may include contact information for local resources in addition to contact information for the telepsychiatrist or the telepsychiatrist's resources. The policy could be given to patients as part of the orientation information for the telepsychiatry service.

Similarly, telepsychiatrists should work with staff at the patient site to develop protocols for managing care between visits, including procedures for requesting medication refills, reporting adverse effects, or inquiring about new problems. A protocol may direct the family to call the site where the patient has been receiving the telepsychiatry services, the PCP office, or the telepsychiatrist's office directly, depending upon the model of care and prearrangement with the PCP. Procedures for interim care should identify the staff responsible for triaging patient calls, for documenting calls, and for deciding when and how to contact the telepsychiatrist.

Challenge 8

Challenge 8 is: Providing patient education regarding pharmacotherapy and monitoring the response to medication.

Solution

The telepsychiatrist should provide education for patients and staff regarding the potential adverse effects of medication and the need for monitoring. It is helpful to provide sites where patients receive telepsychiatry with copies of medication-specific handouts and educational materials, with special attention to the families' understanding of the potential risks and benefits of the prescribed medication. Although it may take more time, the telepsychiatrist may complete a drawing or written explanation that is then faxed or emailed to the patient for review during the videoconferencing session. Alternatively, telepsychiatrists may share their desktop with the patient and staff where the patient is located to conduct psychoeducation. The telepsychiatrist may discuss issues with the family directly and/or the staff where the patient is receiving the sessions, and may provide further opportunities to discuss relevant issues and answer questions. Such a role for the staff empowers their clinical position and helps the telepsychiatrist to learn about the family by observing the staff's approach to the family. The staff is an ally for both the family and the telepsychiatrist.

All medications require monitoring, but certain medications require additional specific monitoring. The telepsychiatrist will need to educate families and staff regarding the potential for suicidality during antidepressant treatment, especially during the initial weeks of therapy (Birmaher and Brent 2007) and will need to be directly involved in determining whether the antidepressant is causally related to any suicidality that develops. The need for ECG monitoring during stimulant treatment likely will involve both the telepsychiatrist and the PCP. Protocols are needed to clarify whether the telepsychiatrist or a local provider will order and review the laboratory tests needed to monitor serum levels of mood stabilizers or metabolic effects of atypical antipsychotics (American Academy of Child and Adolescent Psychiatry 2011). Telepsychiatrists may train nursing staff to screen for abnormal movements or may conduct the examination themselves through videoconferencing. The Abnormal Involuntary Movement Scale

(AIMS) (http://www.cqaimh.org/pdf/tool_aims.pdf) is used to assess the presence of tardive dyskinesia and was found to be reliable when performed via videoconferencing with adult patients (Amarendran et al. 2011). Additionally, patients may be asked to draw geometric figures or a clock face that they then hold up to the camera for the telepsychiatrist's review, or a staff member may fax the drawings to the telepsychiatrist.

The integration of rating scales into patients' assessments helps the telepsychiatrist to track the patient's response to treatment (Myers et al. 2007, 2010; Hilty et al. 2013). They may be readily distributed by staff or downloaded by patients from online portals. Working with sites to obtain such objective measures helps the telepsychiatrist to comply with the increasing mandate by third party payers to demonstrate effective and evidence-based care. Adherence to practice guidelines entails providing timely return visits for the telepsychiatrist to effectively monitor the patient's progress. The need for more frequent follow-up appointments can be a challenge if the telepsychiatrist's time with the staff at the site where the patient receives services is limited and/or the site is strained to coordinate more frequent visits. Creative solutions include relying on a local professional, such as a nurse, therapist, or PCP to fill in the gaps between telepsychiatry sessions, document any patient contacts, and communicate with the telepsychiatrist regarding the patient's progress. This may be done electronically through a secure portal, particularly if the telepsychiatrist shares an EHR with the site.

Current Controversies

Despite the increasingly widespread implementation and acceptance of telepharmacotherapy services, controversies and unresolved issues continue to exist.

Legislatures and other policy makers may be skeptical or lack a full understanding of the goals of telepsychiatry and its procedures. Some states have passed legislation (Alaska State Legislature 2014; Georgia Composite Medical Board 2014) or are considering (Tennessee Board of Medical Examiners 2014) legislation to limit telepsychiatry practice; for example, requiring that an in-person evaluation be conducted prior to commencing telepsychiatry services or that a local healthcare provider be present at the site where the patient will be receiving telepsychiatry services to participate in the session or write the prescriptions for controlled substances.

Regulations affecting medical board licensure and reimbursement for telehealth are highly variable among individual states. Most states place some limits on practicing across state lines, while making exemptions for consultation (Thomas and Capistrant 2014). A small number of states offer a ''conditional or telemedicine license'' to out-of-state physicians. The American Medical Association (AMA)'s position on this issue is that telemedicine providers should be licensed in both the state where the patient receives the service and in the state where the provider is located (American Medical Association 2015). Reimbursement and insurance coverage also vary among the states. In general, there is an increasing trend for third party payers and state Medicaid programs to cover telemedicine services, but there is lack of consistency among states for coverage of specific services and billing codes (Thomas and Capistrant 2015). Another difference among states is whether or not billable telemedicine services are limited to patients located in rural areas and seen at healthcare facilities. One positive sign for moving away from such limitations is the recent decision by the Center for Medicare and Medicaid Services (CMS) to allow Medicare coverage of telehealth services by Accountable Care Organizations (ACOs) without the prior rural or institutional restrictions (American Telemedicine Association 2015).

Telepsychiatrists have recently been involved in legal difficulties because of practices beyond usual ''best telepsychiatry practices'' (Kramer et al. 2013; also see article by Kramer in this issue). Telehealth is an evolving field of service delivery. Its promise, controversy, and lack of regulation in part led the Federation of State Medical Boards to develop the Policy for the Appropriate Use of Telemedicine Technologies (SMART Workgroup 2014). Constituents and professional organizations can help to educate policy makers about the benefits of telepsychiatry services for youth with mental health conditions and their added value to PCPs seeking to provide mental healthcare for their young patients, as well as the potential pitfalls caused by the lack of regulations to guide telepsychiatrists' practices.

Future Directions

Both the pace of technological advances and the growth of telepsychiatry practice opportunities are far outstripping the pace of research testing the effectiveness of care delivered through videoconferencing. More outcome data are needed to build the evidence base supporting telepharmacotherapy, including whether medication decision making during telepsychiatry is equivalent to decision making during in-person care. Further investigations should examine the safety of teleprescribing all of the medication classes, and identify best methods for monitoring adverse effects and determining outcomes. Child telepharmacotherapy research has focused almost exclusively on the stimulant medication management of externalizing problems in youth. Controlled evaluations examining the safety and efficacy of telepharmacotherapy approaches to the treatment of child internalizing problems are needed. Child and adolescent psychiatrists need to know whether there are patients who may not be amenable to treatment through telepsychiatry. Until more research is available, telepsychiatrists should each evaluate their own practice to ensure adherence to guideline-based care and to optimize outcomes.

With technology rapidly advancing, telepsychiatry may move beyond serving patients at designated ''patient sites'' and expand to treating children and adolescents in their homes or other clinically unsupervised settings (Luxton et al. 2010, 2012). Such patient-centered care is being examined at the University of Kansas Medical Center (KUMC). This innovative program takes advantage of affordable and easy-to-use mobile computer devices that are HIPAA-compliant to provide psychotherapy to traumatized children and adolescents. Potential future research at KUMC using similar technology to monitor medication response between clinic visits is currently being explored. These advances are consistent with Yellowlees' prediction that the psychiatrist–patient relationship of the future is likely to become ''more participatory and ubiquitous''; virtually ''anytime, anywhere'' (Yellowlees and Nafiz 2010).

Clinical Significance

TMH programs have been implemented across the country and supported by a limited evidence base as well as a lack of data indicating negative outcomes resulting from such care (Diamond and Bloch 2010). Collectively, this has led to the conclusion that TMH is a valid and effective approach to providing mental health care to youth with the potential to produce outcomes that are comparable to care provided in person (Hilty et al. 2013; Meyers and Cain 2008; Meyers et al 2010).

Disclosures

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Address correspondence to:
Sharon Cain, MD
Department of Psychiatry and Behavioral Sciences
Kansas University Medical Center
3901 Rainbow Boulevard, MS 4015
Kansas City, KS 66160

E-mail: scain@kumc.edu