Telepsychiatry and School Mental Health

Brian J. Grady, MD, MS[a,*], Nancy Lever, PhD[b], Dana Cunningham, PhD[c], Sharon Stephan, PhD[d]

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The crisis with regard to quality and access in children's mental health services is no longer a question, but an alarming reality in the United States. In a report by the Institute of Medicine,[1] "Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities," it is estimated that each year between 14% and 20% of children and adolescents experience a mental, emotional, or behavioral disorder. Despite this documented need for care, it is estimated that 70% of children with a diagnosable mental illness do not receive treatment.[2] Within the United States, there is a shortage of child and adolescent psychiatrists. The shortage is significant and can be considered a crisis in the field. The United State Bureau of Health Professions estimates that there will be about 8300 child psychiatrists in 2020, only two-thirds of the estimated 12,600 needed. In a study commissioned by the American Academy of Child and Adolescent Psychiatry (2003), it was reported that there was, on average, only 1 child psychiatrist for every 15,000 children and adolescents under the age of 18—producing a virtually impossible to manage caseload of 750 "seriously disturbed" children per psychiatrist.[3]

Studies have shown that at least 1 in 5 children and adolescents have a mental health disorder that causes some impairment in functioning (approximately 5 students in a classroom of 25). Remarkably, only about 20% of these youths receive any mental health services.[4] With insufficient support systems, emotional/behavioral issues can

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[a] Department of Psychiatry, TeleMental Health, University of Maryland School of Medicine, 701 West Pratt Street, Suite 420, Baltimore, MD 21201, USA
[b] Division of Child and Adolescent Psychiatry, Center for School Mental Health, University of Maryland School of Medicine, 737 West Lombard Street, Baltimore, MD 21201, USA
[c] Division of Child and Adolescent Psychiatry, Division of Child and Adolescent Psychiatry, Center for School Mental Health, University of Maryland, School of Medicine, 737 West Lombard Street, 4th floor, Baltimore, MD 21201, USA
[d] Division of Child and Adolescent Psychiatry, Center for School Mental Health, University of Maryland School of Medicine, 737 West Pratt Street, 426, Baltimore, MD 21201, USA
* Corresponding author.
E-mail address: bgrady@psych.umaryland.edu

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escalate and can negatively affect academic outcomes (eg, grades, attendance, and grade promotion). With an impending worsening of the current shortage of child and adolescent psychiatrists, it is critical to develop strategies that can maximize efficiency and effectiveness while expanding the availability of these services to child, adolescent, and family consumers.

In the Surgeon General's report on Children's Mental Health[5] and in the report released by the President's New Freedom Commission on Mental Health,[6] schools are recognized as the major setting for providing mental health care to youth and as critical in enhancing service use. In fact, 70% to 80% of children and adolescents who do receive mental health care receive that care in the school setting.[7] Because of this confluence of tremendous needs and insufficient capacity, it is imperative to find creative solutions to ensure psychiatric services for all children and adolescents. The potential impact on access is highlighted in a study by Catron and colleagues[8] that compared the percentage of children and adolescents who followed up with mental health referrals to either school mental health services or more traditional community mental health services. Remarkably, 96% of the students followed through with school mental health services, whereas only 13% of the students followed through with community mental health services.

Beyond just reaching out to students with diagnosable disorders, school mental health programs can reach all students. All youth in the school building can benefit from mental health promotion and promoting positive school environments. The presence of school mental health programs has been associated with several positive outcomes. For instance, school mental health services led to an improved school climate where students and teachers reported that they felt they were in a positive learning environment.[9] In addition, school mental health programs were associated with fewer referrals to special education based on emotional and behavioral problems. Schools offer a natural, universal setting for meeting the mental health needs of students. The provision of mental health services in schools has been one effective strategy for reaching out to a greater number of youth to identify and provide treatment for mental health issues. In their research study, Rones and Hoagwood[7] found evidence that there are school-based programs that have a significant clinical impact across a variety of emotional and behavioral problems in children and adolescents.

School mental health services are typically provided by individuals from the psychology, social work, and counseling professions.[10] Although school mental health programs strive to offer a full continuum of services, psychiatric consultation and medication management are among the least commonly offered services reported by expanded school mental health programs.[10] With the increasing challenges related to shortages in child and adolescent psychiatrists, it is critical to develop models of care that can maximize a full range of mental health services for all children and adolescents who need them. Telehealth offers an innovative distance technology strategy to effectively and efficiently provide access to psychiatric services in schools.

Telepsychiatry has the potential to better link and enhance the provision of health services, and can be particularly beneficial in addressing geographic distance and/or capacity issues. While telepsychiatry is increasingly gaining the attention of communities as a viable strategy to enhance the provision of high-quality psychiatric services, the field still encounters traditional community mental health challenges related to getting families to appointments at locations where they can access the technology. Barriers to care (eg, transportation, childcare, stigma) can make it challenging for children, adolescents, and families to access these services. One strategy that has been successful in improving child and adolescent mental health

care access has been to combine school-based health care with telehealth technology. This approach allows more efficient inclusion of the psychiatrist in multidisciplinary planning, student evaluation and treatment, and the potential to meet and discuss the student with teachers, school counselors, and administrators. The potential impact to students, their families, and the community has significant implications for decisions about where to place telemental health units within a given community.

Once familiar with telepsychiatric technology, its potential readily becomes evident to users and observers. Young[11] described several possible uses of telepsychiatry in schools, including evaluations, ongoing sessions with students and families, medication management, enhanced mental health staffing, continuing education, and classroom teacher consultations. Dwyer's[12] use of "Interactive Television" with school administrators, teachers, and eventually students provides one of the first accounts of using videoconferencing for school mental health purposes. The video equipment was located about 10 miles from a junior high school at Logan International Airport. In 1970 Dwyer would meet with the principal and teachers weekly and then with the school psychologist in a separate meeting weekly to discuss individual students and general school issues. In 1971 he began seeing 4 to 6 students in time-limited group therapy. The telepsychiatry practice expanded to include students from 2 additional junior high schools as well as to youth agencies in need of evaluations for individual juveniles. Dwyer initially approached interactive video with skepticism but quickly became one of telepsychiatry's early champions. Dwyer has been credited as first using the term telepsychiatry.[13]

Telepsychiatry applications can generally be broken down into 3 main areas: clinical, educational, and administrative.

CLINICAL

The literature contains several descriptive case reports, naturalistic studies, and retrospective and prospective clinical trials involving adult[14] and child[15–20] telemental health clinical applications. Academic institutions in several states, including Kansas, Kentucky, Arkansas, Washington, New Mexico, Arizona, and Canadian provinces Ontario (Toronto) and Newfoundland (Memorial), have provided the majority of Telehealth/Telemental health literature including the use in schools. The University of Kansas was one of the earliest programs to treat children and adolescents in the school environment. TeleKid Care was launched in 1998 and targeted urban schools. The program initially provided telemedicine services including telepsychiatry to 4 elementary schools in Kansas City.[21] Of 187 consults seen in the pilot phase of the project, 68% were diagnosed with an ear/nose/throat, dermatology, or school physical problem; the average student age was 8.5 years old. There were 6% of students with a behavioral-emotional diagnosis. All 24-hour consults were seen within 24 hours and 85% on the day of the request. Lessons learned included: improved access to physicians, enhancement of the role of the school nurse, the need for dedicated nurses and physicians, perceived link between children's health and the ability to learn, participants forgetting about the technology, program quickly embraced by the community, significant start-up cost, and experienced telemedicine organization facilitating effective service. The University of Kansas also conducted a landmark clinical trial investigating cognitive behavioral therapy conducted via interactive videoconferencing in the school environment.[22]

In 1998 a 10-year-old Latino boy was treated in school by the Lincoln Hospital Telepsychiatry Network located in the South Bronx, New York City.[23] In addition to

interactive videoconferencing, the psychiatrist and student were able to share their desktop for drawing and writing. The treatment consisted of a 16-session cognitive behavioral therapy protocol, and communication was conducted in Spanish. At the completion of treatment the student was no longer oppositional or disruptive. The student looked forward to sessions, and included in termination was the employment of the student in teaching the next student how to use the computer. This case demonstrates several principal strengths of telepsychiatry: accessing care in the right place, at the right time, with the right provider in a culturally sensitive context. Technology was not only a conduit of treatment in this case, but mastery of the computer and teaching another student included technology in the therapeutic process.

In another case report, a child psychiatrist at the University of Kentucky provided an in-school teleconsultation with a 9-year-old boy.[24] The child was diagnosed with attention deficit hyperactivity disorder (ADHD) and was receiving academic instruction primarily in the behavior resource room. The school was located in a rural area, approximately 200 miles from the University, and the child was being treated by the local pediatrician. Through the use of an analog videophone the child psychiatrist evaluated the child and met with the parents, school psychologist, and school administrative personnel, and determined that the child was being overmedicated. The local pediatrician was consulted and medications adjusted. A substantial improvement in symptoms was then noted. This model of providing consultative services to rural school districts provided benefit to the child as well as local clinicians and school personnel, and represents an efficient use of limited child psychiatry resources. The treatment of this student as well as other students by the University of Kentucky also demonstrated that the use of the videophone over standard analog phone lines, referred to as POTS lines (plain old telephone service) may be a cost-effective and viable alternative to high-end, high-cost videoconferencing equipment in some situations.

In a study by Young and Ireson,[25] health and mental health services were provided in an urban and a rural school-based telehealth center. As part of the project, satisfaction rates with the telehealth services were evaluated. Favorable satisfaction rates were as follows: parents (n = 60) 97%, students (n = 76) 93%, school nurses (n = 84 encounters) 94%, and consultants (n = 145 encounters) 99%. In view of the Catron findings,[8] schools may offer an optimal location for installing telemental health equipment and programs.

EDUCATIONAL

East Carolina University used telehealth to provide health education to ninth graders, clinical education for health professionals, and other continuing educational goals.[26] Originating sites were high schools that had teleclassrooms but also demonstrated a “commitment to the program’s goals.” Healthy lifestyle education topics included stress management and substance abuse. Interactive audio and video was used but other forms of technology, including a web page with slides, handouts, and assignment links, were successfully employed and documented. Email was also used to respond to students and their homework assignments. Clinical consultation topics that were presented to various audiences of teachers, students, and health staff included ADHD, eating behaviors, substance abuse, violence prevention, and stress management. Preliminary evaluation of the program beginning in its second year demonstrated an “increase in health knowledge score and decision-making skills of the telehealth group.”

The University of Kansas Center for Telemedicine and Telehealth began a program in 2003 to educate school personnel on the needs of chronically ill children.[27] The

program was called Connected Kansas Kids. Besides providing education to school personnel, a study was undertaken to compare the perceptions of school professionals who received the education via face-to-face or interactive videoconferencing. The program took advantage of existing videoconferencing resources available in many rural Kansas schools as well as Kan-ed, a statewide private broadband network. Sample topics included supporting students with depression, relaxation strategies, childhood grief, and students with learning disabilities. Results indicated that participants preferred face-to-face instruction but that interactive videoconferencing is a viable alternative when meeting face to face is not possible, especially in rural areas.

These examples point out the significant potential of telehealth technologies in the education of children, adolescents, parents, teachers, and school mental health professionals in mental health prevention, care, and support strategies. Child and adolescent psychiatrists can contribute to the multidisciplinary treatment team of the child with mental health needs through patient assessment and medication prescription, and can contribute much more through participation in child and adolescent tele-educational activities.

Administrative/Programmatic

In 1998 the University of Kansas received a grant from the National Telecommunication and Information Administration with one of its goals being to formally evaluate its highly successful TeleKid Care program. The TeleKid Care program uses telemedicine technology to assess, consult, and treat underserved children and adolescents in the school environment for a variety of somatic and mental health issues. In 2001 the results of a study relating to how health care was delivered and how key personnel felt about the effectiveness of the care delivered was published.[28] Data were collected from teachers selected at random through in-depth interviews, from school nurses through 2 focus groups, and from interviews of both school and University administrative staff. The role of the administrative staff "behind the scenes" for training, coordinating, and developing financial and marketing support in the community was considered essential. The role of the school nurse changed dramatically "from routine record keeping and providing basic vision and hearing screenings to being actively involved in delivering health care." After initially experiencing some resistance in their new role, the nurses eventually experienced increased satisfaction and "found [a new] prominence and respect in the school and community." The children and parents benefited from the nurses' more active role in connecting students with community resources and follow-up of treatment recommendations. Teachers, while focused on student education, realized the connection between healthy children and learning, and could be supportive of some school-based health care.

Other areas of the administrative impact of telehealth care delivery directly to schools may include the effects on school routine, academic performance, and cost considerations. The Central Greene School District, located in a rural county about 50 miles south of Pittsburgh, Pennsylvania started a telepsychiatry pilot program in October 2005.[29] Child psychiatrists teleconference in private with students located in the offices of the school nurses to provide medication management. The county human services director made note that students with depression or ADHD already have issues affecting their school work and that the situation is only compounded by missing additional time in school. Attendance at the school for these students improved, and school district data indicate that students have been able to keep 96% of their scheduled appointments since the program began as compared with 75% before the program inception. Thus 2 keys to better academic performance,

increased attendance at school and increased attendance at mental health sessions, were quickly realized and appreciated by school personnel.

The University of Kansas also evaluated the costs associated with its TeleKid care program in public schools.[30] Results indicated a wide variation in costs depending on the number of consults conducted from a particular originating site. Using cost curves, it was estimated at the time of the report that at 165 consults per year the costs of the telemedicine consult and the medical center ambulatory clinic consult were essentially equivalent. The investigators suggest that despite the actual costs, a telepsychiatry service can be cost effective "if the quality of the service is higher, the cost to the overall health care system or society is less, or [when] geographic or social distance and isolation make telemedicine the only viable service delivery modality."

SCHOOL MENTAL HEALTH AND TELEHEALTH AT THE UNIVERSITY OF MARYLAND

Linking Substance Abuse Specialists with School Communities

In 2002–2003, a telehealth project led by Drs Nancy Lever and David Pruitt was piloted in 2 Baltimore City public schools (one high school and one middle school). In collaboration with the University of Maryland School Mental Health Program (SMHP), an outpatient school-based mental health program that works collaboratively with schools, families, and communities to provide a full continuum of high-quality mental health services for children and adolescents. The SMHP employs a licensed mental health provider in each of the schools it serves, and also has a psychiatrist who provides medication management and other psychiatric services within the school setting.

The SMHP, the University of Maryland Medical School, and the Addictions and Child and Adolescent Psychiatry Divisions collaborated on a telehealth project. As part of this project telehealth presentations on tobacco, substance abuse, and other health-related topics such as diabetes were given during the school year through collaborations with a health class at the high school and a leadership group at the middle school. In several presentations, the students were able to interview a special guest through the teleconferencing equipment. Guests included a recovering addict, an active heroin abuser, a person who had quit smoking, and a medical student who had graduated from a Baltimore City School. Students and school staff reported favorable reactions to the use of the technology and to the content of the presentations. Similarly, presenters reported that they enjoyed the interaction and found it to be stimulating and productive. In addition to the group educational presentations, individual client consultation by a child psychiatry fellow was piloted and again was received favorably by both client and psychiatrist.

The Maryland Youth Practice Improvement Committee for Mental Health

In June 2000 a committee was formed by the Director of Mental Hygiene Administration and the Director of Child and Adolescent services at the Department Health and Mental Hygiene to advise on approaches to improve mental health care for youth in the state.[31] The program was co-led by child and adolescent psychiatrists from the University of Maryland and Johns Hopkins University. Case conferences were conducted using interactive videoconferencing to reach rural as well as suburban providers. Included in the case conferences were 3 regional institutes for children and adolescents (RICA). These institutes are community-based residential clinical and educational facilities that provide both residential and day treatment for students 10 to 18 years old. The committee was especially interested in evaluating existing practices and to provide state-of-the-art information (best practices) on child and

adolescent psychopharmacology as well as treatment for potential use in the wider public mental health system in Maryland. Of particular interest was education and consultation with providers on the appropriate use of second-generation neuroleptics medications that were increasingly prescribed to the child and adolescent population in Maryland as well as around the country. The live, interactive seminars offered slide presentations, didactic material, and interactive discussion. This project kept state providers informed of the latest developments in their field without needing to travel many hours and at great expense.

Connecting Psychiatry with School Mental Health for Students in Special Education

In 2006 Dr Mark Weist, a recognized leader and expert in school mental health, in collaboration with the University of Maryland Department of Psychiatry, initiated the Prince George's School Mental Health Initiative (PGSMHI), a project to prevent nonpublic placement of children and adolescents with emotional disorders by providing more intensive support and school mental health services. These services include the provision of a full continuum of mental health services by therapists and case managers who are based within the school.

Program description

Within the PGSMHI, counselors and case managers provide intensive, coordinated mental health services and support in the school setting to students who are at imminent risk for referral into a nonpublic education program. The PGSMHI was based in 2 schools from 2006 to 2008 and expanded to 4 additional schools in the fall of 2008. The PGSMHI is currently based in 6 schools and program services include individual, group, and family therapy, case management, ongoing training, support, and consultation to school staff, and psychiatric consultation to students and their families. The psychiatric consultation is a unique aspect of the PGSMHI, which significantly enriches the depth and scope of the program.

While the mode and model of psychiatric consultation has varied throughout the years, the importance of collaboration has remained a constant throughout. The University psychiatrists who provide consultation services to the PGSMHI are approximately 40 miles away from the county in which the PGSMHI schools are located. The psychiatrists who have provided services have varied from psychiatry fellows to faculty members at the university. When the consultation services first started, the consultations took place over the phone and the school-based clinicians would discuss their cases with a consulting psychiatrist. The clinicians would discuss the cases they believed to be the most relevant within a 30-minute time period. As the PGSMHI continued to grow, the consultation team also expanded, as psychiatry fellows and then faculty in the Department of Psychiatry also joined the audio consultation team. As it stands currently, the consultation team members who participate on the audio consultation typically include a psychiatrist, 2 psychiatry fellows, and a licensed psychologist. The school-based clinician discusses one case in depth and receives consultation and feedback from the consultation team about that client.

As the PGSMHI evolved, 3 video teleconferencing (VTC) units were obtained, which allowed for the nature of the consultation services to simultaneously expand. In the first year that the VTC units were used, it was decided that students who could benefit from a medication trial, students who were on medication but were experiencing significant side effects, or parents of students who have questions/concerns about the student's medication would be appropriate participants for the video consultation. However, this means of identifying students who would participate in the video consultation yielded a low number of students. The following year it was decided

that all new students who were enrolled in the PGSMHI would participate in a video consultation. The video-based consultation is provided by either a psychiatrist or a psychiatry fellow during a 1-hour time period. As the PGSMHI expanded to additional schools, it was not feasible to continue this model, so the video consultations were again reserved for students who could benefit from a medication trial or were having difficulties with their current prescription. Since the PGSMHI was established, 51 video consultations have taken place and 157 phone consultations have taken place. Although the majority of the consultations have involved different students, a small number have involved discussions regarding the same student on more than one occasion.

During the video consultation, the psychiatrist discusses the case with the clinician and conduct a clinical interview with the student and their parent (if they are present). It should be noted that although the psychiatrists are able to prescribe medication if needed, this was not the preferred course of treatment. If the psychiatrist did recommend a medication trial, the PGSMHI staff would work to find a local provider who could prescribe or the psychiatrist would consult with the student's pediatrician. Since the inception of the PGSMHI, the psychiatrist has been the sole prescriber for only one student.

At present, within the PGSMHI 3 of the school sites have VTC units and 3 school sites use the audio consultation. The nature of the consultation changes weekly, with one week being used for audio consultation and the following week being used for video consultation. Before the consultation, the consultants are provided with information about the student who will be seen or discussed. Because the PGSMHI uses an Internet-based data monitoring system, the consultants are easily able to review pertinent information about the student before their initial meeting.

Focus group

A focus group was recently conducted with the PGSMHI clinicians to obtain their views about the benefits, challenges, and nature of their consultations over the last 4 years, through a questionnaire.

Telepsychiatry focus group questions

1. How many students from your school have participated in telepsychiatry sessions (via video?)
2. What is the approximate number of students that you have discussed during phone consultation sessions?
3. For those using video consultation, what are the primary reasons you use the vide consultation?
4. For those using phone consultation, what are the primary issues you discuss on the phone consultation?
5. What has your experience been like with the video consultation sessions?
   What has been most helpful?
   What challenges have you encountered?
6. What has your experience been like with the phone consultation sessions?
   What has been most helpful?
   What challenges have you encountered?
7. How comfortable do you feel using the video equipment?
8. Have you experienced any technical problems related to use of the equipment?
9. What are student's reactions to communicating via video? (eg, do they seem comfortable, disclose more/less, become distracted by the equipment, and so forth)

10. What feedback have you received from parent's who participated in video consultation sessions?
11. (For those who have used phone consults in the past, and now have access to video) What are the differences in the nature of your consultation?
12. What are the benefits of the consultation?
13. Do you have any suggestions about how telepsychiatry in schools could be improved?

A total of 6 clinicians participated in the focus group, which was facilitated by the Associate Director of the PGSMHI. The staff was encouraged to be honest and was assured that the nature of their responses would have no bearing on their status within the PGSMHI. The 3 case managers who work with the PGSMHI served as note-takers during the focus group.

Video consultation

When asked about the primary reasons for using video consultation, the clinicians reported they discuss issues regarding medication, medical concerns, consultations for new clients, treatment planning, and diagnoses (eg, assisting with differential diagnosis, confirming initial diagnosis that was given). All of the clinicians agreed it was helpful to obtain a different perspective of their client's presentation and most of the time learned something new about their clients, as the clients sometimes shared things with the psychiatrist that they had not previously disclosed to their therapists. Some of the clinicians, who are all females, also noted that some of their clients responded differently to the male psychiatrist, which may have prompted the clients to respond in a different manner than what was typical for them. The clinicians stated their clients seem to like the "novelty of the technology" and were easily engaged, cooperative, and even described some students as "eager" to participate in the consultation. The clinicians believed that some of their clients would not have disclosed as much information if the psychiatrist was present in person at their school site.

The video consultations have also been used to provide psychoeducation to the client's families. On the occasions when parents were present for the video consultations, the clinicians stated that the parents had a positive experience with the video consultations and the parents reported that it was helpful. While many parents appreciated the consultation services, one parent did express concern that the psychiatrist did not want to prescribe medication for her child. In another instance, a parent was initially concerned about privacy, but her concerns were addressed and she consented to the service.

When asked about using the equipment, the clinicians reported that it is very easy to use and they feel competent making and receiving calls. However, some technical challenges were reported at 1 of the 3 school sites. At that location, the equipment shut off in the middle of a consultation, the screen became frozen, or a connection was not able to be established between the 2 sites. At another school site, the University is not able to call into the school site directly due to a firewall issue, but this was easily resolved by the clinician calling the University to initiate the consultation. Another challenge that was identified with the video consultations involved difficulty scheduling consultations for students with poor attendance or students who were not in their classrooms when the clinician went to pick up the student, which resulted in rescheduling the consultation or only having a limited amount of time for the consultation. As mentioned previously, psychiatrists at various levels in training have served as consultants. The clinicians reported that in some instances, some of the psychiatry

fellows seemed to have difficulty engaging the students and often used language that the students did not understand.

Audio consultation

When asked about the primary issues discussed on the audio consultations, the clinicians stated the consultations have focused on differential diagnosis, obtaining information about individual and family treatment interventions, consultation about difficult cases, medication concerns, teacher consultation, and obtaining information about other resources that would be helpful with their clients (eg, Web sites, community agencies). The clinicians believed that the phone consultations helped them think about issues with their clients that they had not previously considered and to identify effective interventions and resources. One clinician stated "It helps to shift my way of thinking." Whereas some clinicians appreciated the exposure to different paradigms during the audio consultation, some believed it would be helpful to have the same team of consultants available year after year so that the information about the treatment approach would be consistent.

When asked about the challenges encountered with the audio consultation, some of the clinicians thought the phone consultants "got carried away with their own discussions" at times and did not always review the information about their clients prior to the consultation taking place. Although the clinicians were able to provide background information about their clients, they thought this took away from the time that was available for the consultation; they also stated there seemed to be "lots of awkward silence" on the phone calls.

Three of the 6 clinicians present in the focus group have previously used the phone consultations and now use the video consultations. Those 3 clinicians were asked about the differences between the two forms of consultations, and the largest difference identified was the ability to have their clients involved in the consultation.

Benefits and areas in need of improvement

All of the clinicians believe the consultations are beneficial to their work, as they appreciate having another perspective available for discussion regarding their clients and the apparent benefit of their clients disclosing more information. In addition, it is beneficial to be able to discuss and solve problems with challenging cases. Another clinician stated she believes her ability to provide video consultation helps the PGSMHI have more "clout" in the school, as it is viewed as an innovative program due to the "cutting-edge technology."

One school clinician described a novel use of the video equipment outside of the usual teleconsultation session (Cynthia Cook, LCSW, personal communication, June 18, 2010). She would demonstrate to her student clients how the videoconferencing unit worked when they came for therapy appointments as a matter of interest and preparation should they be referred for telepsychiatric consultation. Once the video unit was turned on, the students could see themselves on the screen. One student, who suffered from posttraumatic stress disorder (PTSD), would use the video unit to comb his hair, which gave the clinician the idea to use the video unit to help students connect visual expression with internal emotion, and vice versa. For the student with PTSD who experienced emotional numbness, seeing his facial and body expressions made it easier to identify his feelings. The therapist also used the VTC unit to show a student who was diagnosed with autism how he appeared to others when he was angry or upset, thus allowing the student to gain some insight into how his emotional outburst could affect others. While videotaping sessions have been used to provide feedback to clients regarding nonverbal communications,

this is the first report that the authors are aware of that uses videoconferencing equipment to reflect and connect internal emotion with external expression in real time.

Suggestions for improvement included having a multidisciplinary team also available for the video consultations, ensuring that the consultants reviewed information about the clients before the audio consultation, and improving training for the fellows on developing rapport and communicating with the clients.

Discussion

Providing telepsychiatry and more generally telemental health services to schools encompasses 3 main areas of focus: clinical, educational, and administrative. The school provides an important and reliable access point to deliver clinical mental health services to children and adolescents. Although assessment and treatment of mental health disorders is not an academic function, both are interdependent and synergistic in outcome. School is a familiar environment to the student and many parents, and increases patient availability and appointment compliance. Clinical evaluations, medication provision, and psychotherapy have shown benefit although the evidence base in the school setting is limited. Health care education via telehealth technologies has demonstrated acceptance and provides opportunities for special guests, including those in recovery, and clinical experts to provide first-hand experiences and information directly and interactively to students. Telehealth expands educational opportunities of front-line school and community medical and mental health providers. The use of telepsychiatry also demonstrated an impact on the attitudes and roles of teachers, administrators, and school health personnel in understanding the role of mental health care, as well as its provision in the school and community wrap-around services, yielding improvement in student wellness and classroom attendance.

Modeling for Telepsychiatry in the School Setting

The PGSMHI project provided several opportunities to try different models of telepsychiatry care provision in the school setting. Audio-only case conferences provided the on-site therapist with validation and support as well as alternative views and treatment paradigms to consider, based on the case presentation and discussion. Therapists working in schools experience challenges from students, teachers, and administrators on a daily, if not hourly basis, and feel isolated in a manner similar to rural health care providers. While diagnostic clarification and recommended resources were helpful, contact, collaboration, and support of colleagues was an equally significant aspect of the audio consultation model.

Interactive video affords the opportunity to interact with the student and therapist in real time. These interactions with students, along with the developmental, family, and academic histories provided by the therapist, can provide diagnostic clarifications and treatment recommendations. Students seen in the school setting are much more accessible to the child and adolescent psychiatrist for first-hand assessment and collaboration with school health, education, and mental health professionals. Unfortunately, this does not ensure that parents are equally accessible because of work and transportation issues, especially among families with limited resources. However, even for these families, the assessment of the child and collaboration with the school therapist and case worker can offer parents more insightful and concrete recommendations, often discussed over the phone. Given this additional information, parents are more likely to act on treatment recommendations and follow up with community referrals. While direct care provision by child and adolescent psychiatrists, for example, medication management, may be sought by local therapists and primary care providers, this may limit the number of children that could benefit from telepsychiatric

assessment. Telehealth clearly redistributes necessary child and adolescent psychiatry assets or, ironically, redistributes child and adolescent psychiatry shortages; with or without telepsychiatry, creating a service model that leverages the most of available resources without compromising the quality of care is the goal. A consultative approach with specific treatment recommendations, referral, and follow-up with existing community resources may be the most efficient and effective use of the service. Initiation of appropriate medication by the telepsychiatrist is recommended, however, when community appointments are not readily available, resulting in undue suffering, acute academic or behavioral consequences, or missing a window of opportunity for treatment with a particular student or parent not likely to be as open to treatment at a later time.

SUMMARY

This article describes the clinical, educational, and administrative uses of telemental health in the school environment with mental health professionals and staff. The school is the sole location where children of most nations gather on a regular basis. Although its primary mission has been the education of a society's children, its location as a provider of nutrition and health care has become increasingly apparent and appreciated. In keeping pace, mental health prevention and treatment in the school environment is burgeoning and has demonstrated great benefit. Through telepsychiatry, child and adolescent psychiatrists have the ability to be more involved members of the school mental health team and reach more students and child professionals in consultation, all while being more efficient with their time. Comprehensive programs such as those at the Universities of Kansas, New Mexico, and Maryland have and continue to exploit technology in the service of children's mental health needs in the school environment. Ongoing assessment and more rigorous evaluation of the benefits of current and advancing telemental health technologies in schools are needed. It is incumbent that all child and adolescent psychiatrists stay abreast of how technology is being used to help children if not already engaged in its discovery and implementation.

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