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Guidelines for Establishing a Telemental Health Program to Provide Evidence-Based Therapy for Trauma-Exposed Children and Families

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Abstract

While similar rates of traumatic experiences exist in both rural and urban settings, mental health resources available to those living in rural areas are often scarce. Limited resources pose a problem for children and families living in rural areas, and several barriers to service access and utilization exist including reduced anonymity, few “after-hours” services, decreased availability of evidence-based treatments, few specialty clinics, and expenses associated with travel, taking time off work, and provision of childcare. As a solution, the authors discuss the utility, use, and set-up of a telemental health program through an existing community outreach program. Suggestions for establishing a telemental health clinic are presented along guidelines for the delivery of trauma-focused, cognitive-behavioral therapy (TF-CBT) via telemental health videoconferencing technology. Specific guidelines discussed include (1) establishing and utilizing community partnerships, (2) Memoranda of Understanding (MOU), (3) equipment setup and technological resources, (4) videoconferencing software, (5) physical setup, (6) clinic administration, (7) service reimbursement and start-up costs, (8) therapy delivery modifications, and (9) delivering culturally competent services to rural and remote areas.

Keywords

Telemedicine; Telemental Health; Barriers to Treatment; Trauma-Focused Cognitive Behavioral Therapy; Trauma; Rural; Underserved Populations

Approximately 22% of children age 2–17 are victims of trauma each year in the United States (Finkelhor, Ormrod, & Turner, 2009). Childhood exposure to traumatic events has been associated with numerous adverse psychological, physiological and neurophysiological outcomes, which may be exacerbated by decreased access to mental health treatment and/or low treatment engagement. For example, trauma exposure in children has been associated with changes in brain structure (De Bellis et al., 1999; De Bellis et al., 2002) that have been associated with lower IQs, poorer grades, deficits in executive functioning, sustained attention, verbal ability, and memory (Beers & De Bellis, 2002; DePrince et al., 2009;

Moradi et al., 1999; Saigh et al 2006; Saltzman et al., 2006). In addition to changes in brain structure and functioning, increased exposure to traumatic stress yields detrimental physiological responses, such as increased resting heart rate, blood pressure, and skin conductance. These changes lead to increased alertness, which is associated with hypervigilance (Ehlers et al., 2010; McTeague et al., 2010; Tucker et al., 2007).

While individual factors such as single versus chronic exposure to trauma (Copeland, Deblinger, Angold, & Costello, 2007; Kessler et al., 1994; Terr, 2003) and the presence of parental support (Prinstein et al., 1996) may mitigate the onset of posttraumatic stress symptoms in some children, others go on to have mental health problems. Cohen, Mannarino, and Deblinger (2006) describe three main areas of symptoms that childhood victims of trauma may experience, including affective (e.g., fear, anxiety, depression, anger, and affective dysregulation), behavioral (e.g., avoidance of trauma cues and pleasant events, substance abuse, self-injury, oppositional and destructive behaviors), and cognitive (e.g., cognitive distortions, guilt, and irrational thoughts about themselves, others, and the world) symptoms. Children also may exhibit complex posttraumatic stress disorder (PTSD) which includes extensive difficulties across several of the aforementioned areas (Cohen, Mannarino, & Deblinger, 2006). Major depression is another common diagnosis in individuals exposed to trauma, and is one of the primary causes of disability in the United States (U.S. Department of Health and Human Services, 1999). Given the pervasive negative impact of trauma exposure on youth, increasing access to effective mental health care is a priority.

Despite widespread awareness of the need for access to evidence-based treatments for trauma-exposed children and teenagers, many symptomatic youth never receive the available treatments due to various barriers, such as lack of qualified mental health professionals in the area and distance to clinics (Aisbett, Boyd, Francis, Newnham, & Newnham, 2007; Boyd et al., 2006; Boyd et al., 2007; Murry, Heflinger, Suiter, & Brody, 2011; National Institutes of Mental Health, 2000). While urban and suburban areas are estimated to have 39 psychologists per 100,000 residents, rural areas have less than half that number with approximately 16 psychologists per 100,000 residents (APA, 2007). The shortage is even greater for those specializing in the treatment of children (The National Advisory Committee on Rural Health and Human Services, 2009). This disparity in mental health care is even more concerning when one considers that, depending on the definition used, approximately 17 to 49% of Americans live in rural areas (Cromartie and Bucholtz, 2008).

Further disparities exist regarding clinician training and experience. For example, clinicians in rural settings are often expected to provide patients with a wide range of services, but have limited resources, such as access to adequate training and/or supervision (Helbok, 2003; Anderson, 2003; Smalley, Yancey, Warren, 2010). Additionally, Anderson (2003) observed differences by geography in the types of treatment offered, as rural adolescents with comorbid mental health and substance abuse problems only received treatment for one disorder rather than both. Similarly, while active efforts are made to become familiar with various interventions targeting several mental health issues, clinicians may not have received specialized training in evidenced-based, trauma-focused treatment (Gamm & Van

Nostrand, 2003; Hartley, Korsen, Bird, & Agger, 1998). Finally, there may be limited multilingual and culturally-competent services in rural areas (Eberhardt & Pamuk, 2004), thus creating further barriers to accessing and engaging in the limited psychological treatments that are available.

When asked about their perceptions of available mental health services, those residing in rural areas reported lower perceived access to mental health services, and believed that available services were lower in quality than therapy options in larger cities (Aisbett et al., 2007; Boyd et al., 2006; Boyd, et al., 2007; Murry et al., 2011; National Institutes of Mental Health, 2000). Several hypotheses have been postulated regarding this perception of discrepant access to services, including differences in the level of training of mental health professionals in rural versus more urban areas, decreased confidentiality and anonymity due to smaller communities, long waiting lists, and fewer after-hours services (Aisbett et al., 2007; Boyd et al., 2006; Boyd et al., 2007; National Institutes of Mental Health, 2000; Helbok, 2003).

In the event that appropriate services are available, additional barriers to accessing treatment may still exist, such as case management needs and costs caregivers incur from taking time off work, travel, and child care (Gamm & Van Nostrand, 2003, Pignatiello, et al., 2011; USDHHS, 2001). As a solution to these barriers, community outreach programs have been developed (e.g., de Arellano et al., 2005; Pignatiello et al., 2001); however capacity issues limit the ability of mental health clinicians to extend therapy sessions to those living beyond neighboring counties and in more remote areas of the state. Pignatiello et al. (2001) reported that in Ontario, Canada, 30% of child psychiatrists offer outreach services, but only 10% provide services greater than 150 kilometers (93 miles) from their practice. For those clients who are able to receive outreach services, as well as for patients who are able to travel to providers, macro- and micro-environmental level barriers to treatment engagement often remain unaddressed. Macro-environmental barriers such as disadvantaged socioeconomic status and living in neighborhoods with few resources have been shown to predict lower rates of engagement (Snell-Johns et al., 2004; Gross, Julion, & Fogg, 2011; Kazdin, 2000). At the micro-environmental level, related barriers to accessing treatment also affect treatment engagement and include childcare, transportation, and time constraints (Kazdin, 2000; Kazdin & Wassell, 2000).

Community-Based Treatment for Child Victims of Trauma

The Community Outreach Program-Esperanza (COPE) is a community-based program in South Carolina that provides evidence-based, trauma-focused assessment, therapeutic interventions, and referral for youth ages 4–18 and families who have experienced a range of traumatic events. Families tend to come from low socioeconomic households and many are Medicaid eligible. COPE therapists are experienced with providing trauma-focused cognitive behavioral therapy (TF-CBT), and are supervised by TF-CBT national trainers. Hence, careful attention is given to applying TF-CBT using videoconferencing with fidelity to the model.

COPE was developed in 1997 in an effort to increase access to high quality mental health services for traditionally underserved populations, such as ethnic minorities, individuals residing in rural/remote areas, and economically disadvantaged populations (de Arellano et al., 2005). COPE attempts to address cultural barriers by offering culturally-modified, evidence-based trauma treatments, led by bilingual/bicultural clinicians, for Hispanic children and families. As a part of COPE, trained mental health clinicians provide *community-based* trauma-focused therapy and intensive case management services in the client's home, school, church, or library. Additionally, COPE clinicians are encouraged by their supervisors to consider possible modifications that may be necessary to ensure that the treatment is culturally sensitive to the target family. For instance, de Arellano, Danielson and Felton (2010) suggest that clinicians be aware of the family's views of trauma and potential cultural constructs, such as acculturation and ethnic identity, which may impact the treatment process.

While COPE has been effective in reducing treatment barriers for a portion of youth in the regional community, a number of trauma-exposed youth and families remained unserved due to a variety of limitations. For example, though COPE clinicians provide home- and community-based services, some families referred to the clinic live outside of the COPE catchment area, which serves families residing in Charleston, Berkeley, and Dorchester counties in South Carolina. These families were therefore ineligible for COPE's community-based services. Additionally, the amount of time required for clinicians to travel to patients reduced clinic resources in terms of clinician time dedicated to face-to-face treatment. COPE clinicians have reported spending approximately 25–40% of their work hours traveling to and from patient appointments, which significantly decreases the number of youth that a clinician can treat. The continued increase in demand for community-based treatment by COPE clinicians demonstrates that new solutions should be explored in order to ensure that the need for evidence-based trauma treatment can be met. As a response to this community need, specialized trauma-focused treatment delivered in a videoconferencing format emerged as a viable response.

Telemental Health as a Solution

Though the use of technology as a health service-delivery method is not a new one, recent studies have demonstrated that mental healthcare services can effectively and efficiently provide specialty services to trauma-exposed individuals with otherwise limited access to care (Germain, Marchand, Bouchard, Drouin, & Guay, 2009; Morland, Frueh, Pierce, & Miyahira, 2003). Specifically, telemental health (also called telehealth, teleservices, and telemedicine) includes the use of video-conferencing utilizing "real time" audio and video technology that is administered through a secure and encrypted connection. Telemental health has been demonstrated to be a feasible and cost-effective method for dissemination of evidence-based treatment to underserved populations who may not otherwise access formal mental health services (Yuen, Goetter, Herbert, & Forman, 2012), including individuals living in rural areas (Griffiths, Blignault, & Yellowlees, 2006; Grady & Melcer, 2005; Brown, 1998), the elderly (Poon, Hui, Dai, Kwok, & Woo, 2005), and racial/ethnic minority groups (Shore et al., 2007).

Recent research also has demonstrated successful application of telemental health methods for the delivery of evidence-based interventions among adults suffering from mental health disorders including panic disorder (Bouchard et al., 2004), obsessive-compulsive disorder (Himle et al., 2006), depression (Fortney, Harman, Xu, & Dong, 2010) and posttraumatic stress disorder (Tuerk et al., 2010; Germain, Marchand, Bouchard, Guay, & Drouin, 2010). Despite findings indicating that telemental health is a viable form of treatment delivery for adults with a number of disorders, particularly those who may underutilize formal services or not follow up with referrals to appropriate agencies, only recently have research efforts focused on examining the feasibility and efficacy of this treatment approach among children and adolescents. In fact, recent literature demonstrates telemental health to be an effective (e.g., positive outcomes, parent and clinician satisfaction) treatment delivery modality for youth (Ellington & McGuinness, 2011; Myers, Valentine, & Melzer, 2008; Van Allen, Davis, & Lassen, 2011), specifically for those experiencing depression (Germain, Marchand, Bouchard, Guay, & Drouin, 2010), ADHD (Ellington & McGuinness, 2011), and eating disorders (Mitchell et al., 2008).

Telemental health provides multiple benefits as an alternative to in-person treatment, while maintaining quality of care, client satisfaction, and treatment adherence (Bose, McLaren, Riley, & Mohammedali, 2001; Morland, Frueh, Pierce, & Miyahira, 2003; O'Reilly et al., 2007; Ruskin et al., 2004; Tuerk et al., 2010). Because the use of technology allows patients to access telemental health services within a range of different agencies, it enables remote communities to obtain access to treatments and reduces costs to patients associated with travel and taking time off from work or school (Cromartie & Bucholtz, 2008; Gamm & Van Nostrand, 2003; Pignatiello et al., 2007). For COPE, the use of telemental health also allows for an increased number of patients to be served by decreasing provider travel time to victims in the community. This immediate availability increases the likelihood that individuals will access mental health and other victim services, and has been found to increase treatment attendance, which results in shorter treatment duration (Leigh, Cruz, & Mallios, 2009; Pignatiello et al., 2011).

Due to the demonstrated therapeutic and cost effectiveness of cognitive-behavioral therapies using videoconferencing (Richardson et al., 2009) and an identified need by community partners, COPE expanded the scope of its services in 2011 by using confidential, encrypted real-time audio and visual feed to provide trauma-focused, evidence-based mental health services to youth and families exposed to trauma.

Establishing a Telemental Health Program

Given the dearth of specialized resources and clinicians in many rural settings needed to address trauma-related symptoms and the problems that may arise when trauma goes untreated, mental health care disparities for children exposed to trauma warrant attention. Telemental health is a potential avenue for addressing these health care disparities by allowing clinicians with appropriate training to reach patients that typically experience difficulty accessing services (Germain, Marchand, Bouchard, Drouin, & Guay, 2009; Bose, McLaren, Riley, & Mohammedali, 2001). Thus, the purpose of this article is to share guidelines for establishing and setting up a telemental health program based on the

experiences of the COPE program. Several key components must be considered when establishing a telemental health program. Specifically, attention to the following is recommended for mental health providers interested in providing telemental health services: (1) establishing and utilizing community partnerships, (2) Memoranda of Understanding (MOU), (3) equipment setup and technological resources, (4) videoconferencing software, (5) physical setup, (6) clinic administration, (7) service reimbursement and start-up costs, (8) therapy delivery modifications, and (9) delivering culturally competent services to rural and remote areas.

Establishing and utilizing community partnerships

Bridging the gap between research and practice has been documented as an area in need of improvement in a number of disciplines (Wandersman, et al., 2008; Wandersman, 2003; Le May, Mulhall, & Alexander, 1998), and the field of mental health is no exception (Nathan and Gorman, 2002). Collaboration among community organizations has been noted as one important way to address challenges in the dissemination of evidence-based practices from research into practice and the reduction of health disparities (Wells, Miranda, Bruce, Alegria & Wallerstein, 2004). Additionally, partnerships with community organizations allow an “outside” organization to capitalize on the pre-existing relationships and trust that community organizations frequently have with their clients. Thus, telemental health services are offered to individuals in remote areas by setting up equipment in community organizations (e.g., regional children’s advocacy centers, school-based clinics, domestic violence shelters, rural medical clinics, etc.) that are closer to the patient’s home.

When examining a mental health organization’s readiness for telemental health, key strategies include specific attention to the presence and nature of collaborative partnerships (Jennet, Yeo, Pauls, & Graham, 2003). Local organizations will likely have existing relationships with members of their own community, which may enhance patient trust and provide a bridge for the clinician providing telemental health services. Additionally, due to a low percentage of patients seeking services directly from mental health agencies following victimization, but instead from a variety of points-of-entry, telemental health provides a unique opportunity to reach victims through a range of organizations. For example, Campbell, Ahrens, Sefl, Wasco, & Barnes (2001) found that only 39% of patients utilized mental health services (i.e., short-term therapy, long-term therapy, counseling for significant others, and referrals to other services) following exposure to sexual assault, while the majority sought services from other sources (i.e., the medical system, rape crisis centers, and religious services such as pastoral counseling). Further, for agencies that have general mental health services available, telemental health is beneficial because it allows organizations to expand their range of services by offering access to a specialized, trauma-focused clinician to provide a service that was not previously offered or to supplement existing services.

COPE took advantage of existing relationships with a community-based pediatric clinic, law-enforcement victim advocates, regional children’s advocacy centers, school-based clinics, domestic violence shelters, and rural medical clinics. For example, COPE has a longstanding relationship with a community-based pediatric clinic in a higher crime, lower-

income area serving a large number of minority patients, including African Americans and monolingual Spanish-speaking Latinos. Given that African American and Latino families are less likely than their White counterparts to pursue mental health services through formal institutions (McMiller and Weisz, 1996, as cited in Power, 2003), it may be more likely for these groups to engage in recommended counseling services if provided a recommendation by a trusted healthcare provider at the local pediatric clinic. For COPE, these partnerships have been integral in establishing a referral base, mitigating the costs associated with implementing a telemental health program, and in gaining the trust of community members who will be accessing services via videoconferencing technology. COPE's community partners continue to express enthusiasm for the potential the telemedicine modality generates to serve youth in their community.

Community partnerships also are integral in helping individuals in rural and remote areas access the technological resources necessary to engage in therapy via videoconferencing technology. While the evolution of internet technology has increased the availability, speed, and options for internet services, the lower density of potential customers in rural areas means that internet services providers may not prioritize adequate coverage to these rural areas (Malladi, & Min, 2005). Available internet services may be weak and speed of data transmission may be slow or inconsistent, all of which can negatively impact the quality of the video connection of a telemental health session. Therefore, establishing a space within a community collaborator's office that provides the needed technology decreases the amount of patient resources required to engage in telemental health. Indeed, many organizations already have web-camera equipped computers and internet services provided for their own operational needs, eliminating the need for additional expenditures to facilitate telemental health.

Memoranda of understanding (MOU)

Though some partnerships developed from pre-existing professional relationships with COPE, it was still important that a common understanding of expectations be clearly articulated for all parties involved. For this reason, we recommend creating a written and signed Memorandum of Understanding (MOU) that includes specific details of the partnership. A Memorandum of Understanding is a document that details a multilateral agreement among parties, and though not legally enforceable, clearly outlines the purpose of the agreement, and a statement of expectations and responsibilities for each party. The MOU for a telemental health partnership should describe parties involved, equipment, and personnel expectations. For example, it should document the specific equipment to be used, which agency will purchase the equipment, who is allowed to use the equipment and for what purpose, and ownership of the equipment during the partnership and following the termination of the partnership (see Appendix A for a sample MOU).

Equipment setup and technological resources

With regards to equipment acquisition, some pieces may already be available within the existing organization. As one might expect, telemental health at its most basic level requires a computer, an internet connection, and a webcam. The specific memory requirements of the computer will depend on the inter-computer communication program being utilized. To

establish an internet connection, an internet router is needed, and use of a landline is recommended as a back-up in case of asynchrony between audio and video, loss of internet connection, or other technical difficulties. Webcams are often integrated into contemporary computers, though an auxiliary camera may be used for enhanced resolution. Depending on the environment in which services will be provided, the clinician and/or the client may benefit from the use of headphones to cancel or isolate ambient noise. Dual monitors may be helpful for certain portions of treatment (e.g., trauma narrative). A printer and scanner or a fax machine will be needed for transmission of administrative paperwork such as consents, registration forms, and assessment measures.

Videoconferencing software

A variety of real-time interactive videoconferencing programs can be utilized for telemental health, though covering the breadth of programs is beyond the scope of this paper. COPE has primarily used the software program Movi-Jabber (formerly Tandberg Movi™, recently upgraded to Cisco® Jabber™). In addition to fulfilling Health Insurance Portability and Accountability Act (HIPAA) specifications to ensure confidentiality (using 128-bit encryption), Movi-Jabber offers high resolution images and a fluid picture (Cisco Jabber, 2012). The clinician, however, is not able to provide handouts to the client using Movi-Jabber. Alternatively, Adobe® Connect™, which allows multiple participants in a videoconference with each individual providing a password to enter the session (Adobe Connect, 2013a), also has been used by COPE clinicians. Advantages noted by COPE clinicians have been that the clinician can share documents with the client, and can jointly edit a document (such as a trauma narrative); however, picture resolution is reduced. While COPE clinicians have not used FaceTime to provide telemental health services, Apple states that FaceTime is HIPAA compliant, free to download, and can be used on computer and mobile devices (iMedical Apps, 2011); however, to be compliant, users' wireless network must be connected to WPA2 enterprise security with 128-bit AES encryption (iMedical Apps, 2011). Skype™ also can be used on a computer or mobile device, and is relatively inexpensive. Though Skype™ encrypts transmitted information, there remains debate as to whether Skype™ is HIPAA compliant (Zur, 2013; Skype, 2010). When selecting a videoconferencing program, one should consider technical capabilities of “home” and satellite clinic hardware, maintaining compliance with HIPAA regulations, and usability for client and clinician, in addition to the financial considerations involved in program selection.

In order for telemental health services to be successful, it is important that clinicians and telemental health satellite site liaisons receive training on the videoconferencing program selected in order to maximize technology benefits, while minimizing technical malfunctions. Since technical malfunctions inevitably occur, having “backup” technical support can be helpful. Consider telemental health implementation to be an iterative process, and identify and address challenges on a regular basis.

Physical setup

The physical space of the satellite clinic in which services are conducted should mimic a therapy room as much as possible. If available, a room dedicated to telemental health and other mental health treatment is ideal. However, in many schools and community

organizations, space is at a premium and may be shared space used for various activities or personnel. If dedicated space is not available and multi-purpose space must be used, it is of the utmost importance that the area be reserved and confidentiality protected during telemental health sessions. With regard to equipment placement, the webcam and video monitor should be placed at the client's eye level to best approximate a face-to-face interaction. Finally, prior to conducting the first session, a "test call" should be made to evaluate video, audio, and connection quality. Clinicians can conduct brief test calls prior to subsequent sessions to proactively identify and problem-solve any possible connectivity issues.

Clinic administration

Once the partnerships have been established and the equipment is in place, considerations must be made related to processing of referrals. It may be possible to use the standard referral system already in place within the organization, though adaptations may be necessary. It is suggested that each telemental health satellite site have a designated liaison who communicates directly with a designated liaison at the service provider's/telemental health clinician's site. For both sites, advance consideration of who will conduct screenings, process paperwork, assign cases, and conduct follow-up case management will facilitate the implementation process.

The development of clinic policy and crisis protocols is important to appropriately manage both standard "everyday" delivery of telemental health and to properly handle crisis situations. Day-to-day policies help clinicians and satellite site facilitators know how to handle paperwork and supplies and understand who to call for troubleshooting assistance. When developing crisis protocols, consider the different settings in which satellites may be located. For example, a protocol to manage a suicidal student being seen at a school-based clinic will likely diverge from a crisis protocol for a suicidal patient being seen at a law enforcement victim services office. Consider how crises are generally handled within that agency and what resources are available in that community to support crisis response. COPE's crisis protocol currently follows a similar set of directives as the clinic-based services (see Appendix B), but may be revised on a site-by-site basis given the population served and local resources available. Of note, the COPE clinic is part of a doctoral psychology internship training program, which permits extensive supervision and consultation with faculty supervisors in the event of a crisis. Crisis protocols should be tailored to the individual needs and capacity of the organization and community partner providing telemental health services, and all parties should have a clear understanding of the crisis protocol. (Suggestions for adaptations to the COPE clinic's crisis protocol for non-training clinics are italicized and included in Appendix B)

Service reimbursement and start-up costs

While telemental health has been around for several decades, its increased adoptability was aided with the option for individual states to pay for telemental health services with Medicaid provided by the Health Care Financing Administration (HCFA) in 1998 (Brown, 2006). Similarly, Crime Victims' Compensation funds (established by the Victims of Crime Act of 1984 (VOCA), administered at the federal level through the Office for Victims of

Crime, and awarded at the state level by each state's designated VOCA administrative agency) have provided reimbursement for trauma-focused psychological services conducted through videoconferencing technology. Medicaid and Crime Victims' Compensation funded reimbursements must satisfy state requirements, which may include the use of a high connection speed and real time video. According to the Telemedicine Information Exchange of 2005, 34 states were receiving Medicaid reimbursement for telemental health services; however, reimbursement contracts differ widely among states (Whitten & Buis, 2007). There is flexibility across states with regard to fee-for-service and capitated Medicaid arrangements, as well as differences with regard to who gets reimbursed (e.g., distant site or originating site; Palsbo, 2004). Medicaid also allows states to reimburse any additional costs such as technical support, transmission charges, and equipment (Medicaid.gov, 2013).

In addition to Medicaid and Crime Victims' Compensation programs, victims of trauma may also receive telemental health services that are reimbursed by some private insurance plans. Whitten and Buis (2007) conducted a survey of 63 organizations conducting an array of billable telemental health services and reported that 57% of these organizations were receiving reimbursement from private payers. Furthermore, the majority of respondents (81%) claimed that there was no difference between the amount of reimbursement from private payers for telemental health visits and traditional face-to-face consults. However, rates of reimbursement for telemental health services do vary by state and are not always commensurate with face-to-face services (APA, 2013). Therefore, clinicians and agencies considering establishing a telemental health program should check local insurance mandates and contact the accepted insurance companies to verify if services will be reimbursed and at what rate. Of note, 13 states, including Maryland, California, Colorado, Georgia, Hawaii, Kentucky, Louisiana, Maine, New Hampshire, Oklahoma, Oregon, Texas, and Virginia, mandate private insurance companies to cover "medically necessary services" that are normally covered by a patient's policy when the services are delivered via videoconferencing technology (APA, 2012).

Funding through grants (e.g., Office for Victims of Crime, Office on Violence Against Women, Violence Against Women Act) can be used towards the expenses related to equipment and technology necessary for trauma-focused telemental health services. In addition, the Office for the Advancement of Telehealth, a division of the Office of Rural Health Policy in the Department of Health Resources Services Administration, awards grants to assist with startup fees for telemental health programs as well as telehealth networks serving disadvantaged urban, rural, and frontier communities (Health Resources Services Administration, 2013). Telemental health services do not necessarily require additional high-end hardware or software if an organization already has access to a computer with sufficient memory or video cards for real-time video over high-speed internet. Costs associated with software are minimal. Adobe® Connect™ is an internet-based program, and hence there is no program-specific software to download. Specific costs vary on the number of hosts, and begin at \$55/month for a monthly plan, \$45/month with an annual plan, and \$0.32/per minute for users who do not wish to purchase a monthly or annual plan (Adobe Connect, 2013b). Movi-Jabber software also is free to download, but users must pay \$15 per Movi-Jabber account per month (MCNC, 2013). Alternatively, FaceTime is free to download and use, thus offering a more economical option, however special attention should

be paid to ensuring confidentiality. Variable costs such as maintenance, technicians, repairs, and equipment training are estimated at 5% of equipment cost (Dávalos, French, Burdick, & Simmons, 2009).

Other costs associated with development and sustainability of a program are those associated with personnel. These include coverage for clinicians to provide the service, billing personnel, and staffing for a liaison at the remote site. In order to enhance sustainability, the COPE has made significant efforts to utilize infrastructure and personnel already in place in the organization to provide traditional in-person, office-based mental health services. For example, billing and other support staff schedule patients and process billing for both office-based and telemental health services. Similarly, clinicians in the program are available to provide office-based, community-based and telemental health services. Given the comparable level of reimbursement for each service and the lack of additional expenses associated per service, staffing and personnel costs for the clinical services are comparable for telemental health. However, there is a need for a liaison at the remote site to facilitate therapy sessions through activities including running the software application, greeting and bringing children and caregivers into the therapy room, and providing any necessary written materials (e.g., consent forms, assessment measures) sent by the clinician for the patients. For COPE, staff at remote sites have included service providers (e.g., victim advocates and a school nurse) whose responsibilities included facilitating access to services and were flexible enough to be able to be utilized for clinical activities at the current level of service provision (e.g., a few patients a couple times per week at each site). Therefore, no additional compensation was necessary beyond the liaison's regular pay. A higher level of service provision at a site (e.g., daily and closer to full-time), would likely require dedicated staff at the remote site. Any additional personnel, equipment, and technical assistance costs associated with higher levels of service provision could likely be mitigated by the increase in billing revenues proportionate to expense. As programs are getting started, a mix of office-based and telemental health services could help to moderate personnel expenses until sufficient capacity is reached to make a program self-sufficient.

Therapy delivery modifications

Once the structure is in place for a telemental health program, clinicians then must consider necessary modifications in their delivery of the selected evidence-based treatment. While COPE clinicians have not reported that telemental health sessions require significantly more preparation time than in-person sessions, clinicians are required to give some forethought to session materials and activities in order to ensure that all necessary materials are available to the patient and that the activities are suitable for a telemental health format. Given that the focus of the current paper is on telemental health for trauma-exposed youth, specific considerations for the delivery of Trauma-Focused Cognitive Behavioral Therapy (TF-CBT; Cohen et al., 2006) via videoconferencing technology are presented. TF-CBT is a manualized components-based intervention targeting ages 3 to 17 and has been used effectively for in-person treatment with a wide range of youth from multiple cultural backgrounds over the past decade (Cohen, Deblinger, Mannarino, & Steer, 2004). Sessions focus on a variety of symptoms associated with exposure to traumatic events among children

and adolescents, including posttraumatic stress disorder (PTSD), depression, and other significant emotional and behavioral difficulties. Fidelity to the TF-CBT model can be maintained using videoconferencing technology, although some modifications are necessary in order to adjust for differences in the service delivery model. The following sections highlight modifications to incorporate when conducting a trauma-focused treatment via videoconferencing technology.

When implementing TF-CBT using telemental health, it is important that the clinician plan ahead and be creative with ways to provide children and families access to materials that enhance treatment. For instance, patient handouts and worksheets are utilized to complement and reinforce the session topic in multiple TF-CBT treatment components (e.g., psychoeducation, relaxation, affective expression and modulation, cognitive coping). The clinician must ensure that the child and parent have access to copies of the handouts prior to the session. Effective methods include sharing the handouts on the computer screen so that both parties can view them simultaneously or providing copies to the satellite agency liaison in advance of the session. Similarly, when implementing the relaxation component using videoconferencing, the clinician must ensure that other supplementary materials are available for the child. Specifically, if the clinician opts to use bubbles or pinwheels when teaching deep breathing, these materials need to be available for the child and clinician to practice together. Additionally, video demonstrations of relaxation techniques are often used in TF-CBT and the clinician needs to ensure that these demonstrations are uploaded to the computer at the satellite clinic or available online for the child to view.

Games are often a fun and effective method for reinforcing TF-CBT session content with children, particularly when teaching psychoeducation, affective expression and modulation, and cognitive coping. Interactive games can be used with telemental health; however, the clinician must ensure that selected games will translate to the telemental health format. For instance, while feelings charades (a typical game employed by clinicians to teach affect identification) can be used when implementing TF-CBT via videoconferencing technology, the clinician must be aware of the fact that, if the patient chooses to stand up and enthusiastically act out the feeling charades, the space is limited to the area covered by the camera and that sound may be reduced compared to in-person therapy.

The development of the child's trauma narrative is a component unique to TF-CBT as it directly addresses the child's response to the traumatic event (see Cohen, Mannarino, and Deblinger, 2006, for a detailed explanation). This component poses distinct challenges to implementation via videoconferencing technology due to the sensitive nature of these sessions. The narrative serves as an imaginal exposure to assist the child in experiencing the negative feelings that are related to the traumatic event, with the clinician's support in a safe and controlled environment. Clinicians, however, often report that implementation of this component is one of the most challenging in TF-CBT, even with in-person treatment, due to clients frequently demonstrating reluctance to talk about their trauma in detail (Hanson, Stauffacher Gros, Davidson, Barr, Cohen, Deblinger, et al., 2013). In addition to ensuring that the videoconferencing format promotes a safe and controlled environment to encourage the child's sharing of their traumatic event, clinicians must consider modifications in the setup to optimize the child's processing of the trauma narrative. Dual computer monitors are

very helpful in supporting this process as they allow for the both clinician and child to see the trauma narrative as well as the clinician to see the child's reactions while sharing the narrative. Programs such as Adobe Connect also allow the clinician and client to upload and discuss art and drawings that are frequently used as part of the narrative. In addition to uploading documents, Adobe Connect also allows the clinician and client to alter documents and projects through programs such as Microsoft Word, PowerPoint, and Paint "live" such that both parties see changes.

TF-CBT incorporates caregivers as integral participants in the child's treatment, and a primary focus of the treatment is to improve parent-child interactions, communication, and closeness (Cohen et al., 2006). The components that have a greater caregiver emphasis (e.g., parenting skills, in-vivo exposures, conjoint parent-child sessions, and enhancing future safety) present unique challenges when delivered in a telemental health setting where the parent may be unavailable, such as a school. Ideally, the parent could arrange to be available at the telemental health satellite clinic during the specified sessions. If this is not feasible, alternative approaches include conducting the session within the family's home using a smartphone application where the parent and child are present, attempting to conference the parent into the session using another computer (or telephone if a computer is not available), or conducting a separate in-person session with the parent.

Delivering culturally-competent services to rural and remote areas

Despite the rapid growth of the racial/ethnic minority population in the US (USDHHS, 2001; Kandel & Cromartie, 2004), a lack of culturally- and linguistically-competent mental health services and providers continues to exist (Smith, Rodriguez, & Bernal, 2011). This mental health care disparity poses a significant barrier for rural racial/ethnic minority populations, including African American and Hispanic groups (Heckert, 2012). Moreover, racial/ethnic minority groups may face additional barriers to quality mental health care. For example, in addition to overcoming the stigma that Hispanics traditionally attach to mental health problems (Añez, Paris, Bedregal, Davidson & Grilo, 2005), many rural Hispanic children and families also encounter language barriers that currently are not being addressed adequately with formal mental health services (Smith-Adcock, 2006). The use of telemental health may help reduce mental health care disparities by increasing access to culturally- and linguistically- competent clinicians for those living in rural and remote areas.

In order to provide culturally competent telemental health services, clinicians need to consider a range of diversity issues related to differences in ethnicity, race, region, religion, socioeconomic status, and sexual orientation. In addition to considerations related to the culture(s) of the economically disadvantaged non-Hispanic African Americans, non-Hispanic Caucasian, and Hispanic individuals that the COPE clinic primarily serves, cultural competence concerns also exist for other groups living in rural areas. For example, in more rural Appalachian areas, it is important for clinicians to consider and understand core Appalachian cultural values such as the importance of family and physical proximity to family; individual traits such as a strong work ethic, loyalty, and sensitivity; a strong sense of community with less emphasis placed on wealth and material goods; and solidarity and subsequent mistrust of outsiders (See Shamblin, Williams, and Bellaw, 2012). More

broadly, Shore, Savin, Novins, and Manson (2006) recommend mental health providers consider the cultural background of the patient, cultural explanations for the presenting problem, cultural factors that contribute to one's psychosocial environment, and the impact of cultural factors on the patient-provider relationship and treatment plan. When using videoconferencing technology to provide telemental health services to remote populations, it is important for clinicians to educate themselves on possible cultural differences in the individuals served. Hence, the delivery of mental health care via videoconferencing is a feasible and successful dissemination strategy that can increase access to empirically-supported, culturally- and linguistically-competent treatments for children, adolescents, and their families who have been exposed to trauma.

Conclusions and Implications for Behavioral Health

While there are no differences in the prevalence of interpersonal violence for children living in rural versus urban areas (Moreland et al., 2013), differences in treatment availability are stark (APA, 2007). Telemental health offers agencies and underserved populations a mechanism to reduce barriers to treatment, as well as a way to increase treatment engagement through the use of specialized, evidence-based, and culturally competent services. As previously discussed, videoconferencing technology has proven advantageous with a variety of underserved adult populations for the treatment of other psychological disorders, including panic disorder (Bouchard et al., 2004), obsessive-compulsive disorder (Himle et al., 2006), depression (Fortney et al., 2010), and posttraumatic stress disorder (Tuerk et al., 2010). The use of telemental health also has the potential to significantly reduce negative psychological sequelae of childhood trauma exposure.

Feedback on the delivery of TF-CBT via videoconferencing technology has been positive, and the experiences of COPE clinicians providing telemental health services are consistent with studies showing clinician satisfaction and reduction in client symptoms (e.g., O'Reilly et al., 2007; Ruskin et al., 2004; Shore et al., 2008). However, since no telemedicine satisfaction questionnaires for youth are currently available, patient response is being assessed post-treatment using the Client Satisfaction Questionnaire (CSQ; Larsen, Attkisson, Hargreaves, & Nguyen, 1979). We have only recently begun to formally assess post-treatment satisfaction using the CSQ and note that we don't currently have sufficient data to report; however, anecdotal reports on satisfaction with telemental health from teen clients has been positive. In fact, one teen patient noted his excitement at having the opportunity to integrate technology into therapy. Others have observed similar responses made by youth engaging in therapy via videoconferencing technology (Myers, Valentine, & Melzer, 2007).

Although initial start-up costs may be a concern for some agencies, it is likely that agencies already have much of the necessary equipment to provide telemental health services. Financial concerns related to equipment procurement and maintenance may be assuaged since Medicaid and many other insurance providers reimburse telemental health services at a rate equivalent to in-person treatment provision. For COPE clinicians, the increased efficiency of telemental health services has allowed the program to serve a greater number of clients. This also appears to be true for other agencies providing telemental health

services (See Hilty et al., 2013 for a review). Additionally, grant funds may be available to assist with equipment acquisition and implementation costs.

Since the use of telemental health videoconferencing technology is a new experience for many children and clinicians, clinicians must think creatively about unique ways to integrate technology into the therapy session while maintaining fidelity to the treatment model. Clinicians should actively problem-solve ways to enhance parental inclusion in the therapeutic process if a parent is not able to present at the school or other agency where their child is receiving services. Clinicians also are encouraged to utilize local community partners and agencies when considering ways to incorporate other important aspects of treatment, such as case management support or in vivo exposures.

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Appendix A. Memorandum of Understanding

Memorandum of Understanding for Telemedicine Services and Equipment

Purpose of Agreement

The National Crime Victims Research and Treatment Center (NCVC) and the Community Outreach Program- Esperanza (COPE) provide community-based and clinic-based assessment, intensive case management, crisis intervention, information and referral, and mental health treatment services to adults and children who have been victimized by crime. In addition to services currently provided by NCVC and COPE clinicians in the victim's community (e.g., home, school, church, community-based organizations), the NCVC and COPE will expand capacity by offering mental health services via telemedicine, and increase access to services for all victims, particularly traditionally underserved populations such as rural victims, racial/ethnic minorities, and economically disadvantaged individuals.

The purpose of this agreement is to create a telemedicine partnership to enhance access to services for victims of crime by decreasing barriers to services.

Statement

The organizations named below will provide traumatized individuals and victims of crime with access to NCVC provided laptops and cameras for the purpose of accessing mental health services provided by the NCVC and COPE. One laptop and one camera will be provided to each location. The laptop and camera will remain the property of the NCVC, and will be kept in a secure location within each organization designated by the designee below. The laptop and camera will be used for the purpose of providing information and services to victims of crime. The organization designee noted below will notify NCVC project staff in the event of technological difficulties with the NCVC-provided laptop and camera.

The National Crime Victims Research and Treatment Center (NCVC) and Community Outreach Program- Esperanza (COPE) agree to: increase victim service access by providing information and referral, assessment, intensive case management, crisis intervention, and mental health treatment services via telemedicine to adults and children who have been victims of crime (such as homicide Survivors, sexual assault, sexual abuse, physical assault, physical abuse, etc.)

Partner #1 (specifically named) agrees to: provide a confidential space for victims of crime to use the NCVC-provided laptop and camera. The provided equipment will be used for the purpose of providing mental health services to victims of crime.

Your name, title, organization

Partner name, title, organization

Appendix B. Crisis Protocol for Telemedicine Patients

If a client is suicidal, homicidal, or other emergency presents, clinicians should:

1. Immediately consult their supervisor.
2. If the supervisor is not available, the clinician should immediately consult with another faculty member.
3. If neither a supervisor nor NCVC faculty member is available, the clinician should contact the on-call psychiatrist through the Institute of Psychiatry (843-792-2123). *(Clinicians who work with other private practice providers in a non-training capacity may consider instituting a policy to call the on-call staff member. Clinicians working individually may consider consulting with another clinician.)*
4. Clients may be directed to visit nearest Emergency Department for psychiatric evaluation.
5. Clients may be given the phone number for Mobile Crisis (843-414-2350) or the local Trident United Way Hotline (211) for after-hours or weekends. *(Providers*

outside of the Charleston, SC area should have available phone numbers for their local crisis agencies.)

6. Clinicians will contact satellite designated liaison to apprise of situation and response.
7. All emergency interventions (including contacts and referrals) should be thoroughly documented in a clinical service note.