

Virtual Music Therapy: Developing New Approaches to Service Delivery

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ABSTRACT: As the global Coronavirus disease (COVID-19) pandemic transforms our society, music therapists must adapt service delivery models that ensure client safety. Given the prevalence of COVID-19 in our communities and lack of personal protective equipment in many settings, music therapists are faced with the need to shift delivery models in order to provide safe and relevant services. Telehealth is one solution to these current service delivery challenges. Music therapists possess a depth of practice-based knowledge and understanding of client populations, which enables them to develop virtual services, matching both the clinicians' and clients' technical capabilities. Developed during the initial wave of COVID-19 infections in the United States, this article describes the coauthors' three-tiered scaffold model intended to support the program development and deployment of virtual music therapy (VMT) services. The model describes an approach to developing VMT services that directs the clinician's goals of care in formats that are accessible, appropriate, and best meet the patient/client's needs and abilities. The severity and lasting nature of this worldwide health crisis and its disruption of traditional service delivery models require clinicians and researchers to develop the most effective uses of VMT while considering its limits with regard to clinical populations and need areas.

Keywords: telehealth, music therapy, COVID-19, pandemic

As the global Coronavirus disease (COVID-19) pandemic transforms our society, music therapists must adapt service delivery models that ensure client safety. The Certification Board for Music Therapists (CBMT) and the American Music Therapy Association (AMTA) provide clear guidelines related to client safety. Music therapists must "recognize and respond to situations in which there are clear and present dangers to clients and/or others" (1.1.), "recognize the potential harm of music experiences and use them with care" (1.2.), "observe infection control protocols" (1.4.), "maintain awareness of client location, materials, and potential risks of harm at all times" (1.8.), and "keep apprised of, and comply with emergency procedures (1.9.) (CBMT, 2020). AMTA Standards of Clinical Practice require that music therapists "use a methodology that is consistent with recent advances in health, safety and infection control practices" (4.2; 2020a) and the Code of Ethics advises professional conduct to "respect, acknowledge, and protect

the rights of all clients, including the rights to safety, treatment, respect, dignity, and self-determination" (1.3) (AMTA, 2020b).

Given the prevalence of COVID-19 in our communities and lack of personal protective equipment in many settings, music therapists are faced with the need to shift delivery models in order to provide safe and relevant services. Telehealth is one solution to these current service delivery challenges.

Telehealth

The U.S. Department of Health and Human Services (DHHS) defines telehealth as the "use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration" (DHHS, 2017). Telehealth is defined by the Center for Connected Healthcare Policy (CCHP) as a "means or methods for enhancing health care, public health and health education delivery and support using telecommunications technologies" and is "a collection of means to enhance care and education delivery" (CCHP, 2020). While the terms telemedicine and telehealth have been used interchangeably in the past, the term telehealth is now more commonly used (CCHP, 2020).

Telehealth describes four kinds of approaches to care delivery: (a) live synchronous videoconferencing (real-time interaction between patient/client and provider via audiovisual telecommunications), (b) store-and-forward (photos, videos, and documents transmitted electronically), (c) remote patient monitoring (collecting health data from patient/client and transmitting to the provider in a separate location, e.g., mobile monitoring devices), and (d) mobile health (targeted health care and public health information to a patient/client mobile phone) (DHHS, 2017).

Prior to COVID-19, telehealth delivery of music therapy has been focused on synchronous videoconferencing. While published research has been limited in comparison to traditional in-person models, telehealth-based music therapy approaches have been utilized to reduce barriers of access to services within military veteran populations (Bronson et al., 2018; Levy et al., 2018; Lightstone et al., 2015; Spooner et al., 2019), parents of hospitalized infants in neonatal intensive care units (Gooding & Trainor, 2018), and teens with Asperger's Syndrome¹ who lack access to in-person services due to residing in remote or rural communities (Baker &

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¹In 2013, the American Psychiatric Association reclassified Asperger's Syndrome under the umbrella terminology Autism Spectrum Disorder in their Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (Lai et al., 2013)

Krout, 2009, 2014). While focused on the topic of approaches to distance music therapy educational and clinical supervision, MacDonald et al. (2019) describe similarities and differences between in-person and distance supervision. They offer numerous examples of using both synchronous and asynchronous techniques to provide effective supervision. In addition to these practical examples, the authors' recognition of limitations and benefits of videoconferencing technology illustrates a constructive approach that would aid music therapists in developing effective telehealth services for those they serve. As telehealth use emerges as an area of practice, there are significant opportunities to expand access to music therapy in order to meet needs in our healthcare systems, educational settings, and communities.

Music therapists possess a depth of practice-based knowledge and understanding of the client populations, which enables them to develop virtual services, matching both the clinicians' and clients' technical capabilities. At this time, numerous resources to support music therapists' efforts for developing telehealth services are rapidly emerging. Music therapists are encouraged to pursue relevant resources to inform regulatory, copyright, music licensing, and technical concerns as they relate to telehealth. The AMTA COVID-19 Resources for Music Therapists and Students website page (AMTA, 2020c) contains an aggregated and regularly updated list of resources to serve music therapists for developing telehealth approaches (AMTA, 2020d), including guidance to assist music therapists in maintaining compliance with current copyright law (AMTA, 2020e). While synchronous live video and other forms of telehealth are important, a complement of virtual services may best meet the varied needs of a music therapist's clinical population. The following content is a description of the coauthors' three-tiered scaffold model intended to support program development and deployment of virtual music therapy (VMT) services.

VMT: Curate Online Resources, Create Original Content, and Implement Telehealth

Tier 1: Curate Online Resources

The worldwide web contains a vast amount of online resources; however, clients and their caregivers may have barriers to access due to prior inexperience with digital content. Tier 1 strategies involve identifying preexisting content (audio, videos, and music-making instructions) readily available online that reinforce the therapeutic uses of music or social and emotional learning concepts.

A music therapist may use his/her skill and perspective to curate a list of available resources and music engagement videos that are suitable for the population they serve. If in private practice, these will be welcome resources as the therapist will likely have the best perspective on what is appropriate for those they serve. Care should be taken to ensure that identified resources are appropriate, accessible, and effective in addressing patient/client goals.

Organizational considerations. Understanding the capability of a patient or client to access internet-based materials must be considered for Tier 1 resources, as well as their relevance in addressing treatment goals. Music therapists may create word documents or PDFs directed to patients

and families, which outline online resource recommendations. Communicating these documents electronically with source material hyperlinked may reduce barriers to content. If working within an organization, communication with those responsible for maintaining the website will benefit from a music therapist's expertise in identifying the most useful resources for the populations served.

Operational considerations.

Action item (authors' suggested next step to music therapist). Clearly identify what your clients' music therapy needs are and find resources that align with those needs. Provide suggested strategies for your clients and their caregivers to utilize these resources as you further develop tier 2 and 3 approaches.

Note. Some resources may require copyright permissions. Please seek further permission, clarity, or licensing if required by the source content owner(s).

Tier 2: Create Original Content

Patients and clients may be directed to use music therapist developed audio and video recordings of original music and interventions to meet therapeutic objectives. For example, finger play songs can be used to reinforce infants' and toddlers' motor and language development. Preschool and early childhood music can be used to teach pre-academic and academic concepts. Relaxation-oriented audio and video recordings may be created to support teens and adults in developing new coping skills, while instrument-making and musical instrument learning demonstrations could be used to practice recreational skills. These are some examples of how original content may be used as part of an overall treatment plan.

Music therapists may consider developing written materials or videos that reinforce the transfer of therapeutic benefits outside of the music therapy session by educating other team members or caregivers as to how they may use music to support patient/client need. Staff support initiatives using original audio or video recordings may be used to celebrate staff, facilitate relaxation, or reinforce safety practices, such as mask-wearing or hand hygiene. One's experience as a music therapist and relationship with the patient, client, or staff members will make these videos potentially more impactful than other content users may access independently.

Organizational considerations. Music therapists must consider how to deliver original videos and audio to patients and clients. While compressed audio files may be emailed, videos will require either cloud-based delivery or hosting on a website, such as YouTube or Vimeo. Music therapists working in organizations should seek partnerships with colleagues working in marketing, social media, and digital health departments so that original content can be developed within guidelines that fit organizational objectives. By working collaboratively with others, music therapists can leverage an organization's preexisting social media networks to disseminate audio and video recordings for implementation by patients and clients.

Operational considerations.

Action item. Consider if there are songs you have used in sessions that could be effective original videos. Are there videos or audio recordings you could create that would be useful to many of your clients?

Note. Copyright protection applies to livestreams and digital conferencing platforms. Music sources and publishers must be referenced and recognized. Credentialed music therapists using public online platforms (e.g., Facebook live) under Tier 2 are advised to adopt a conservative approach regarding copyright and consider licensing or permissions needed for music outside of the public domain (AMTA, 2020e).

Tier 3: Implement Telehealth

Telehealth approaches that may be utilized in practice will depend on several key factors: organizational, operational, and clinical concerns. While telehealth broadly defined includes a range of communication platforms (e.g., a telephone or videoconferencing using a tablet), music therapists must consider which options best match the technical and physical capabilities of their clients and requirements of their payor. These platforms may include Zoom, Skype, Facetime, Doxy.me, and Microsoft Teams, to name several. AMTA has produced a telehealth/therapy statement in support of telehealth service delivery, which includes guidelines and considerations for practice (AMTA, 2020d).

Organizational considerations. Given the range of options that constitute telehealth, chief organizational considerations define what is allowable and required for billing. For a music therapist working within an organization, they will be required to utilize telehealth platforms approved by their employer. When considering a music therapist within private practice working with private clients not associated or governed by an outside organization, there may be more freedom of choice in regard to virtual platform. However, it is recommended that therapists consult their state and payor to clarify telehealth guidelines (Washington State Hospital Association, n.d.).

While the Health Insurance Portability and Accountability Act (HIPAA) standards have been temporarily relaxed in the United States as a result of the pandemic (DHHS, 2020), it is also recommended that music therapists consider utilizing private and password-protected platforms (nonpublic such as Zoom or Webex) in order to provide adequate security.

Operational considerations. Prior to treatment, it is recommended that music therapists assess their client's access and ability to use the required technology. Additionally, the therapist may consider caregiver or family member's availability to assist in the implementation of VMT, for example, preparing a smartphone, tablet, or computer and ensuring the client may successfully access the session.

From the therapist's equipment and technology standpoint, the therapist will be required to identify their needs prior to the telehealth sessions. Standard recommendations will begin with a computer or laptop, followed by additional considerations for Universal Serial Bus (USB) webcams, microphones, and audio interfaces.

Primary computer or laptop. The primary means of connecting with clients during VMT practice may be through video conferencing platforms, such as Zoom, Skype, or Facetime. It is recommended that a computer or laptop be used, which has the internal processing power and updated operating system that are compatible with the video software's

recommendations. These can typically be found on the video-conference platform's website, and it is recommended that they be used as guidelines in the case of equipment investment.

Webcams. Webcams are included in most recently manufactured laptops or tablets; however, it should be noted that higher-quality video may be attained through an external USB webcam. It is recommended that USB webcams have a minimum resolution of HD1080p. Additionally, external webcams provide the benefit of alternative placement during sessions, which may enhance the viewing angle for the client. For example, a webcam may be freely moved to share the fingering technique during a therapeutic guitar or piano lesson as opposed to the therapist balancing their built-in laptop camera on music stands or furniture.

Microphones. In order to enhance the quality of the therapist's audio being sent to the client, they will need to use an additional microphone outside of what is typically included on current laptops or pcs. It is recommended that therapists utilize a USB-powered condenser microphone. Condenser microphones are designed to broadly capture sounds within a recording space and are typically used in professional recording studios for acoustic instruments, such as voice, guitar, pianos, and hand percussion. This audio engineering design makes condenser microphones ideally suited for the majority of a music therapist's acoustic-based instruments. It is also important to note that a USB-powered microphone allows the user to connect directly into a laptop or pc without additional equipment such as an audio interface. However, if the therapist owns or would like to invest further, an audio interface offers expanded capabilities and the use of standard external line-run (XLR) microphones.

External line-run microphones are typically used with an XLR cable and may be familiar to therapists who have performed in live settings or have used personal amplifiers (PAs) in the past. These microphones are considered the standard in recording industries; however, they rely on a powered PA or audio interface in order to transfer the signal to USB for connection to a laptop or PC. Though this may offer a higher-quality signal, it is dependent on the quality of the signal chain.

Signal chain refers to the order in which sound is transferred from the input source to the output, that is, the therapist singing into the microphone, the microphone connecting into an audio interface via XLR cable, and audio interface sending the signal via USB to computer and software. These signal chains may become complex and difficult to troubleshoot for therapists who lack experience. Therefore, for the sake of timeliness, the utilization of a USB-powered microphone is recommended as suitable entry-level equipment for VMT.

Audio interface. An audio interface is a compact processing unit that allows a therapist to insert both XLR and instrument cables in order to utilize recording software. These units contain volume controls and input gain that allow for a precise control of input levels as well as headphone output jacks, which allow the therapist to monitor levels of their microphones and instruments. These are typically USB powered as well as plug and play, meaning that they require no additional software to be downloaded onto a therapist's computer in order to use.

Equipment choice. The internal component quality of the USB microphones and interfaces will have a major impact on the signal chain's audio quality. As a reflection of superior internal equipment components, audio quality is typically correlated with the equipment's increased price range, in other words, higher-priced equipment generally produces higher quality sound and recordings. However, the perception of audio improvement from an entry-level priced piece of equipment in comparison to intermediate may not be sufficient enough to merit the investment for music therapists at this time. Most notably, audio technology has advanced in recent years, particularly within home studio recording equipment, allowing the majority of manufacturers to produce high-quality USB microphones and audio interfaces for a relatively affordable consumer cost. To this point, it is recommended that therapists review equipment ratings thoroughly through online stores' customer reviews and critically compare the provided content when choosing audio equipment for purchase in order to avoid overspending.

Software. Software such as Garageband (mac) or Cubase (pc) will allow the therapist to record content for clients while utilizing USB microphones or interfaces. These recording programs are typically included with the purchase of computer and audio interfaces. It is not recommended that monetary investments be made into additional professional recording software as the needs of the therapist may be met through the included programs already owned. Of note, it is important to practice using both hardware and software with friends or family members to ensure ease of use. Test software and check that the voice and instruments are clearly heard throughout the signal chain. Troubleshooting may be required, along with the time needed for the therapist to learn and trial the equipment and software to optimize use.

Home office and space logistics. When considering the use of the VMT, the therapist may also benefit from considering audio and visual space within which they are holding sessions. This may include choosing a space, which has ample lighting that is located in front of the therapist to avoid silhouetting through their webcam, as well as avoiding other visual disturbing content, such as room clutter, laundry, personal effects, or inappropriate items of unprofessional nature. Additionally, it may benefit the therapist to utilize a space free of distractions from additional sounds or individuals present. Considerations may include penning off pets in other rooms if able, or closing doors for privacy if available while notifying fellow occupants of the need for quietness. When utilized, these considerations may help the therapist increase their professional presentation, aid the interactions with clients through VMT, and reduce obstacles that may detract from the intended therapeutic process of the session.

Clinical considerations. While music therapists are trained to utilize the aspects of therapeutic presence and nonverbal cues through body language in the delivery of services, virtually communicating this way reveals innate challenges, which differ from the typical in-person session. However, across multiple practice settings, clinical needs and interventions have been found amenable to telehealth strategies.

Specific interventions utilizing a VMT approach will vary greatly and depend heavily upon the population and therapeutic needs; however, there are several frontline music therapists currently deploying successful models. While these examples are not exhaustive, they demonstrate the successful implementation of music therapy utilizing synchronous telehealth technology.

Child VMT for therapeutic play. A developmental music play session was conducted through video conferencing with a hospitalized toddler receiving cardiac care with the objective of increasing arm use, specifically reaching. The screen sharing function was utilized to facilitate the child reaching to touch the screen when prompted in the song. After the parent reported the child had touched the screen, the music therapist would continue the song, providing cause and effect reinforcement and sustaining engagement in the treatment. (M. Fuller, Jr., personal communication, April 3, 2020)

Adult VMT for anxiety. Utilizing an adult patient's bedside phone, a music-assisted relaxation intervention was facilitated in order to reduce anxiety. The patient was led through a scripted relaxation while the therapist spoke and facilitated instrumental acoustic guitar music in the background. Throughout the session, the patient was introduced to guided imagery, breathing techniques, and mindfulness-based strategies. Additionally, the patient was provided resources for free online-guided imagery tracks along with education on regimen and usage with examples provided including preparing for anxiety-inducing events, such as medical procedures, discharge, or times of day when the patient desires deepened relaxation such as at bedtime. The patient was noted to self-rate pre-session anxiety at 8/10 and post at 6/10, revealing a clinically significant reduction of 2 points (S. Block, personal communication, April 1, 2020).

VMT and behavioral health. A hospitalized adolescent with COVID-19 on a behavioral health unit was engaged in a video teleconference session to reinforce coping skills using therapeutic music instruction. During the session, the patient complained of difficulty getting a deep breath (dyspnea). The music therapist engaged the patient in therapeutic singing, which resulted in the patient reporting improved ease of breathing at the end of the session (M. Renella, personal communication, April 8, 2020).

Additionally, depending on the structure of one's practice, they will need to schedule sessions or develop a communication system for receiving referrals. Develop a procedure for contacting clients and a tip sheet for them to easily connect for the session. An example of a procedural flowsheet currently used in an adult medical setting is provided in [Figure 1](#).

Note: the U.S. Government relaxed restrictions on media platforms to allow use as HIPAA-compliant methods of service delivery during the state of emergency; however, always consult with your specific site or organization.

Conclusions

The global COVID-19 pandemic has brought widespread grief and disruption to nearly every country. Music therapists face both the crisis of drastically changed service approaches and opportunities to meet the preexisting and emerging

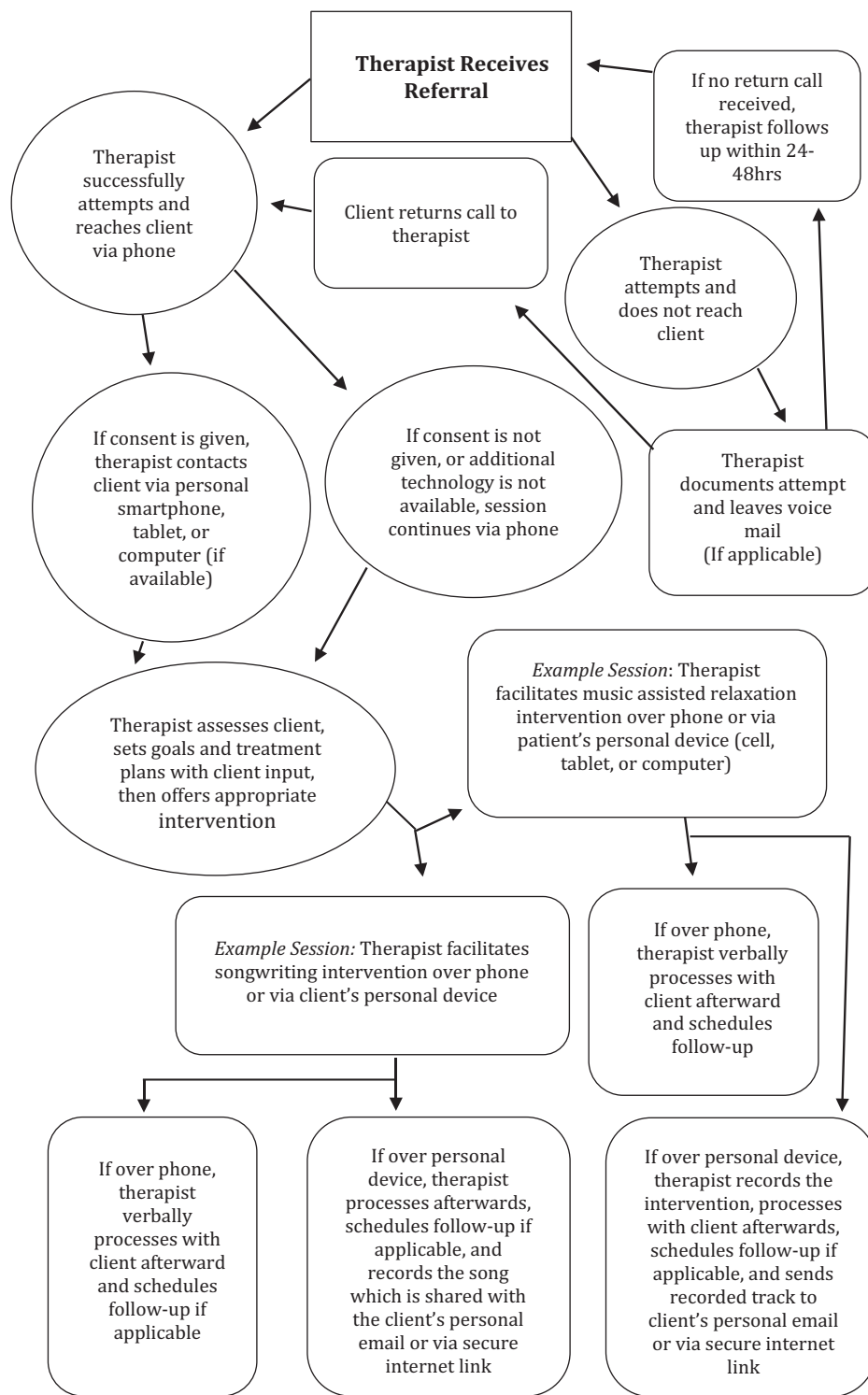


Figure 1. Procedural flowchart.

client needs with the creativity and dedication that brought them to the field.

In an Institute of Medicine report from 2012, Linkous reported “to move telemedicine forward, we have to be realistic about what works and what does not” (2012, p.18). In addition to pivoting practice, this is also an immediate operational concern for music therapists practicing during this pandemic.

As stay-at-home orders are lifted and phased strategies for relaxing physical distancing restrictions are implemented, it will be important for music therapists to identify successful telehealth delivery as well as elements of practice that require physical presence. Through this process, prioritization strategies can be developed to guide planning for telehealth or physically presented services should circumstances

change and increased physical distancing measures become necessary.

This model describes an approach to developing VMT services that direct the clinician's goals of care in formats that are accessible and appropriate for the patient/client's needs and abilities. The severity and lasting nature of this worldwide health crisis and its disruption of traditional service delivery models require clinicians and researchers to develop the most effective uses of VMT while considering its limits with regard to clinical populations and need areas. Adopting an ethical and safety-conscious stance enables music therapists to develop VMT services to best meet patient/client needs during the COVID-19 pandemic and beyond.

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