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Novel screening tool and considerations for music therapists serving autistic individuals via telehealth: Qualitative results from a survey of clinicians' experiences

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Conflict of Interest

None Declared.

Abstract

During the COVID-19 pandemic, music therapists transitioned services from in-person to telehealth due to health and safety concerns. Though online delivery of music therapy services for autistic individuals occurred prior to 2020, the number of North American music therapists using telehealth with autistic clients rose substantially during the pandemic. The current paper's objective was to delineate music therapists' perceptions regarding factors that helped or hindered autistic persons' engagement in online music therapy sessions. One-hundred ninety-two participants completed the survey. Qualitative content analysis of an open-ended question identified seven overarching themes regarding benefits and challenges of telehealth music therapy for autistic clients. Findings were used to create a screening tool to help music therapists evaluate autistic persons' suitability for telehealth and meet the needs of those who can benefit from telehealth music therapy.

Keywords: Music therapy, telehealth, autism spectrum disorders, COVID-19

Background

There is an immediate need for research on how to best engage autistic individuals[1] in music therapy sessions via telehealth. When the 2019 coronavirus disease (COVID-19) pandemic occurred, autistic persons and their families suffered interruptions to regular therapeutic and health-care services (White et al., 2020). These disruptions contributed to increased individual and familial stress because of the break in routine, and may have decreased autistic persons' progress towards therapeutic goals (White et al., 2021). To address this gap in care, health professionals including many music therapists transitioned services to online, or "telehealth" modalities (Gaddy et al., 2020; White et al., 2020). Health Canada defines telehealth as "the use of advanced telecommunication technologies to exchange health information and provide health care services across geographic, temporal, social and cultural barriers" (Health Canada, 2006, para 2.1.2). Telehealth was utilized in therapy with autistic persons prior to the COVID-19 pandemic, but its use has increased dramatically since the pandemic began (Solomon & Soares, 2020). A survey by Kern and Tague (2017) found that clients on the autism spectrum were the most common clinical population served by music therapists. In fact, almost half (44.2%) of music therapists reported serving autistic clients (Kern & Tague, 2017). The high number of autistic music therapy clients is not a surprise given autism's prevalence. Autism is diagnosed in 1 in 44 children in the US; 1 in 66 in Canada (CDC, 2021; Public Health Agency of Canada, 2018). Research is needed to create best practices that will assist music therapists to continue to provide quality therapeutic services to autistic clients online. This need goes beyond adjusting to COVID-19 restrictions: telehealth delivery of services has been shown as a cost-effective and viable way to reach rural or remote persons who may not have access to in-person therapies (Cole et al., 2021), and will likely continue past the end of the COVID-19 pandemic.

Music Therapy, Telehealth, and Autism

[1] To respect the desire of some autistic individuals to use identity-first language, and others for person-first language, we use both "autistic person" and "person on the autism spectrum" in this paper (Shakes & Cashin, 2019).

Telehealth music therapy emerged prior to the COVID-19 pandemic, with reports of successful online sessions facilitated with veterans (Levy et al., 2018; Lightstone et al., 2015; Spooner et al., 2019; Vaudreuil et al., 2020), children with hearing impairments (Fuller & McLeod, 2019), an autistic adolescent (Baker & Krout, 2009), and a singing group for individuals with Parkinson's disease (Stegemöller et al., 2019). A growing number of studies have emerged since the onset of the pandemic regarding online music therapy, including a study looking into the effect of the pandemic on therapists' caseloads, stress levels, and degree of hope (Gaddy et al., 2020), on effective practices for virtual music therapy (Knott & Block, 2020), and perspectives from individual music therapists on service delivery efforts during the height of the pandemic (Rizkallah, 2020; Talmage et al., 2020). Despite this increase in new research on music therapy and telehealth, studies concerning the efficacy of online music therapy for autistic clients is limited to the case study by Baker and Krout (2009), which reported that telehealth music therapy was more effective in promoting self-expression and emotional engagement in therapy than in-person therapy for an autistic teen. Thus, there is a need for studies on the benefits and challenges of online music-based therapies for individuals on the spectrum.

Autism and Telehealth

There is a small body of research regarding the online delivery of health services other than music therapy for autistic clients (Lindgren et al., 2016; Solomon & Soares, 2020; Yi & Dixon, 2021). Other benefits of teletherapy included: lower costs due to decreased travel time for therapists/clients (Kalvin et al., 2021; Lindgren et al., 2016; Su et al., 2021), increased parental engagement in therapy resulting in more transfer of skills to everyday life (Su et al., 2021), access for rural or remote clients (Ameis et al., 2020; Simacek et al., 2021; Solomon & Soares, 2020), and better engagement with the therapist online due to lower anxiety being in the comfort of their own homes (Kalvin et al., 2021). Disadvantages of telehealth therapy with autistic clients included: increased distractedness on computers or in the home environment (Kalvin et al., 2021), frustrations due to technical difficulties (Solomon & Soares, 2020; Su et al., 2021), and greater difficulty providing resources to parents (Kalvin et al., 2021; Solomon & Soares, 2020).

Research Context

The first author of this study is a white woman, a board-certified music therapist with neurologic music therapy training, and a university educator who at the time of the study had worked with autistic individuals for approximately eight years. During the COVID-19 pandemic, the researcher supervised practicum students working with autistic clients via telehealth. During the first few months of the pandemic, informal discussions with music therapy colleagues who worked primarily with individuals on the spectrum indicated a trend such that some clients were thriving over telehealth (being engaged, continuing to make progress), while others had found the online format challenging. The author thus conceived of the current study to investigate this phenomenon further, with the aim of increasing music therapists' understanding of what works or does not work in telehealth for autistic clients, or if there were factors that made certain autistic clients a fit for telehealth. This study was carried out as part of the first author's PhD dissertation research and the small amount of funding required to undertake the study came from a donation given to [the first author's place of study]. The second and third authors of the study are members of the researcher's PhD dissertation committee and supervised the study's execution. This study set out to answer the following research questions: 1) What factors aided autistic persons' engagement in online music therapy sessions? 2) What factors hindered autistic persons' engagement in online music therapy sessions?

Methods

Materials

This qualitative data is from a larger survey study that employed a 41-question survey (40 closed-ended; one open-ended) based in part off the survey used in Cole et al. (2021). The survey contained nine sections: demographics, neurologic music therapy, effects of COVID-19, clinical practice, individual clients, group sessions, therapist experience, caregiver involvement, and future implications. Two music therapists not directly involved in the study piloted the survey and provided feedback that was

incorporated in the final design. The survey was hosted on the online platform Survey Monkey and is included in the supplementary material of this article. Quantitative results of this survey are reported in another manuscript (in preparation). The current article presents results from the open-ended question that read as follows: “Many therapists have noticed that some clients with ASD do better over telehealth, while some do worse. We are interested in why this might be the case. In your experience, what factors do you think are causing some clients to do better over telehealth? What do you think causes some to do worse?”

Data Collection

An invitation letter containing a link to the online survey was disseminated through several channels. The Canadian Association of Music Therapists shared the survey invitation to their members via email; the World Federation of Music Therapy shared the letter on their website; the European Music Therapy Confederation disseminated the letter to its members, and emails containing the invitation letter were sent to the 8975 board-certified music therapists who had active memberships in the Certification Board of Music Therapy as of November 23, 2020. The data collection period spanned from November 23 to December 23, 2020. In terms of inclusion criteria, respondents 1) had at least one client or group of autistic clients during 2020; 2) were accredited to practice music therapy in their region; 3) could read and understand English; and 4) were over the age of 18. Participants could withdraw from the survey at any time without penalty. Prior to completing the survey, participants read the inclusion/exclusion criteria and affirmed that they met criteria for the study by clicking corresponding check-boxes on the survey form. The Research Ethics Board at the University of Toronto approved the study protocol.

Researcher Background

The first author practices within the neurologic music therapy (NMT) model. NMT includes a set of 20 interventions based in research on music perception and production in relation to speech/language, cognition, and sensorimotor functioning (Thaut & Hoemberg, 2014). Alongside this modality, the author

takes a person-centered approach to clinical relationships in music therapy. Within the person-centered model, the client is seen as always having potential for self-directed growth within therapeutic conditions of unconditional positive regard, therapist authenticity, and accurate empathetic understanding (Corey, 2009). The researcher's training and music therapy approach thus lead to a valuing of quantitative research methods (highly valued in the NMT framework) alongside qualitative methodologies for increasing the understanding of participants' experiences in novel therapeutic situations.

A Pragmatic Approach

The larger survey from which this data was obtained was employed within a pragmatic philosophical framework. A pragmatic study identifies a particular, practical problem to address, and often uses mixed-methods (i.e., both qualitative and quantitative approaches) to better understand and address the problem from multiple viewpoints (Creswell & Poth, 2018). The aim of pragmatic research includes both increasing understanding and finding practical ways to address the problem at hand (Duram, 2010). The current study identified the "problem" as the dramatic variation in engagement over telehealth amongst autistic individuals. The investigation reported here employed a qualitative strategy: asking music therapists to describe what they perceived was helping or hindering autistic clients' engagement over telehealth and analyzing these data for common and salient themes.

Qualitative Content Analysis

Participants' answers to the qualitative question were analyzed to identify common themes, using a conventional Qualitative Content Analysis (QCA) approach. QCA is used to assess novel phenomena for which there are limited prior theories, and is common in health care research (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). The novel nature of the current study's research topic (telehealth music therapy for autistic persons) made QCA an appropriate methodology. The researcher read participants' responses to the open-ended question, and categorized responses based on key words in a codebook. Software was not used in the qualitative analysis. The QCA was an iterative process in which responses were read and

revised multiple times to ensure that the categories and themes were an accurate reflection of responses. The contents of the codebook (i.e., emerging themes/categories) were shared and discussed with the second author. When interpreting and categorizing participants' contributions, the researcher maintained awareness of biases and assumptions which could influence this process by writing down opinions/thoughts in the margins of the codebook as they pertained to the emerging themes. Since data were anonymous, there were no known relationships between the researcher and any of the participants. These categorized responses were combined into larger themes. In order to provide a resource to help music therapists translate the information in this study into their practice, the authors further distilled participant responses into a screening tool. This tool was designed to help clinicians proactively prepare to maximize the possibility that autistic clients could engage in music therapy via telehealth. Member-checking was not employed.

Results

Participants

A total of 243 individuals filled out at least part of the survey. The response rate was ~2% of all music therapists invited. Fifty respondents did not complete the survey up to and including the open-ended question respondents, so were excluded from analysis. One additional respondent was excluded for not fitting inclusion criteria. Thus, data from 192 respondents were included in the analysis of the open-ended question. The majority (all but three) of participants were from the U.S. and Canada, and almost half were in the young adult range (between 25-32 years of age). Therapists had a wide variety of years of experience with autistic clients, with an average of about 10 years of experience working with that population. In terms of the age of clients, only about 10% of respondents reported working primarily with adults (22 years and older). The rest (about 90%) worked with children, adolescents/young adults, or a combination of ages. Thirty-two clinicians reported having additional trainings (listed in Table 1). Specific data on socioeconomic status and race/ethnicity were not collected. Table 1 summarizes the participant data.

Qualitative Content Analysis

A Qualitative Content Analysis of responses to the question regarding factors for autistic client engagement identified seven themes: 1) Familiarity with Screens, 2) Technical Factors, 3) Setting Factors, 4) Social Connection, 5) Client Characteristics, 6) Caregiver Presence, and 7) Attention Factors. The identification of these themes was certainly influenced by the first author's own experiences working with autistic individuals both in-person and via telehealth, her philosophical viewpoints related to work with autistic persons, and familiarity with quantitative methods. For example, the researcher had prior knowledge that some clients seemed to succeed over telehealth and others did not thrive in virtual therapy. This led to the formulation of the two-pronged research question asking therapists to identify both the benefits and challenges related to telehealth work with autistic persons, as well as formulation of themes that each included factors leading to telehealth engagement as well as disengagement. The author's familiarity with quantitative methods and the assumption that frequently discussed themes may be important led to the choice to categorize themes based in part on the number of times these themes appeared in responses. A final example of the interaction between the author's own positionality regarding work with autistic individuals and the responses relates to the therapeutic goal of eye contact. The author believes that working on increasing eye contact in autistic clients is seldom an appropriate therapeutic goal, as first-person accounts from autistic individuals indicates that making eye contact can contribute to over-arousal and does thus not necessarily aid social interaction in autistic persons (Trevisan et al., 2017). A few participants stated that not being able to work on eye contact was a drawback of telehealth. The author made the deliberate choice not to highlight these quotes. Each theme is summarized and briefly discussed below. Each section states the total number of mentions of each theme and provides exemplar quotes to illustrate each sub-category.

Familiarity with Screens

Sixty-five participants articulated themes regarding how clients' familiarity with screens impacted their engagement in telehealth. These responses fell largely into one of two categories: 1) Client experience

with and affinity for screens aided engagement in sessions, and 2) screens could be a distraction. Many respondents believed that some autistic clients seemed to benefit from the screen modality because they were comfortable and experienced using computers and tablets in everyday life. One stated: “I believe that for some of my clients the ‘screen’ modality is a source of comfort and regulation, which could explain why some have seemed to adjust well to virtual MT.” Another said that “A lot of clients may be used to watching screens or have a lot of screen time at home so they are acquainted with watching the screen.” Other therapists noted that it seemed difficult for clients to inhibit the urge to open other programs on their screens while music therapy was taking place. Respondents believed that if clients were used to using screens for recreational purposes, doing the work of therapy on a screen was sometimes a difficult adjustment. One stated, “only one of my [autistic clients] has not done well with online sessions. She becomes very distracted with the computer, often pulling up windows and browsing the internet in the background of our session. It is more difficult to engage her with so many distractions.” Similarly, another stated that “I also believe that the iPad or computer itself serves as a distraction since most of my clients are used to playing games or watching videos on these devices instead of interacting with another human through them. It's hard to make the switch from using the iPad as a reward or 'break' to completing a full music therapy session via the device.” The relationship between the engaging nature of screens and the potential for distraction was clearly articulated by one participant, who stated that “Clients who focus well on videos from digital devices AND have always been good at maintaining focus with the therapist are ideal clients for telehealth.”

Technical Factors

Forty-four respondents described technological influences beyond basic familiarity with screens. Four categories were identified within this theme: 1) Telehealth enabled access, 2) telehealth inspired creative use of novel tools, 3) internet glitches were highly disruptive, and 4) use of telehealth technology posed other, varied challenges. In terms of access, participants made statements such as “I have clients outside of my region that have no MT in their area.” Another noted that telehealth promoted continuity of access

during the COVID-19 pandemic: “I think the consistency we have been able to provide, meaning continuation of sessions when we closed down in-person, was very important for my individuals.” Many therapists shared the ways new online tools impacted their clients. For example, one stated that

> “My client feels comfortable engaging through a drawing app called JamBoard which he uses to create stories ("episodes") in collaboration with me, based on his favorite video game characters. Our virtual format allows him to use this feature and I believe helps him feel comfortable, in control, and successful.”

Another respondent reported that “The digital platform has enabled the use of visuals that keep my clients engaged and interacting musically.” Several clinicians mentioned that the online video-conferencing format in which clients see an image of themselves and others simultaneously seemed to help promote understanding of theory of mind in clients. “Working over telehealth helps them understand perspective taking better/in new ways.”

Not all responses related to technology were positive. Technical difficulties related to internet access or reliability featured prominently, as in the following quote:

> “Some families do not have access to internet at home and have to rely on sessions over the phone (which poses its own set of difficulties as neither party can see the other but can hear the other), if internet is available but not reliable, clients may become frustrated by constant cuts in video and audio and/poor video and audio quality,”

Similarly, another stated that “Technical difficulties (wifi, Zoom dysfunction) is more of a problem than the actual facilitation of interventions. These minor occurrences break the structure of the intervention which can often decrease the level of engagement.” Beyond challenges with internet, respondents mentioned a variety of other technology-related challenges that they perceived to be detrimental to the telehealth experience. One noted that audio feedback could trigger distractions:

> "Those that have tendencies to self-stim using sounds - I have observed them get distracted by the audio feedback that can occur online, and then they repeat that sound. Typically, if they have someone in their room (not just therapist over zoom), who can redirect, then this is easily managed."

One person described that some clients did not seem aware that the therapist on the screen was live, and instead seemed to perceive the therapist more as a non-interactive video: "Drawbacks that I've seen is lack of engagement or realization that the person on the screen is real and interacting with you." Screen fatigue was also mentioned: "Attention to the screen can be challenging especially if there is Zoom fatigue;" as well as mention of clients being overstimulated by the screen itself: "They don't like the electrical energy coming off of the iPad it provides too much stimulation for them and they cannot tolerate it." Thus, using internet-based technology and screens as the basis for music therapy came with unique opportunities and challenges directly related to the medium itself.

Caregiver Presence

The theme of family or care provider presence was present in sixty-four responses to the open-ended question. Within this theme, sub-categories included: 1) Caregiver support was necessary, 2) caregiver involvement increased positive therapy outcomes, and 3) involving caregivers could be challenging. In terms of involvement, one clinician stated that "support of consistent staff/family members can be a key to the success of a client in telehealth music therapy services." This sentiment was echoed in another participant's statement that:

> "Most important is the presence of a caregivers to assist and be the in person assist at to work with the student and keep them on task. It is like night and day to work with a student who has no one assisting them, versus having someone right there ready to help the student work on each of the goals."

Given this perceived need for caregiver presence, it was challenging for music therapists when, as one stated, “often times, their parents/caregivers are not always able to be fully present to help offer support in conjunction with the therapist via Telehealth.” In terms of the many positive outcomes related to parental involvement, one oft-articulated sentiment was that caregivers could help give the therapists insights about the client not previously available: “Often times . . . family members who know [the client well] offer up supports that the school team may not know.” The following two quotes represent clinicians’ reports that parents who became more involved in sessions learned techniques to support their children better outside of sessions: “Parents/caregivers are receiving coaching/training that helps them presume competence, understand movement difference in ASD, and develop skills to support meaningful communication and education,” and “I think it helps that some students have parents observe so they can use some of the techniques for transfer.” Not all clinicians found it easy to integrate parents into sessions perhaps revealing an area for clinical competency (working with both a child and parent) not widely discussed: “[For clients] below [six years old,] parents intend to help, but end up being more controlling and not able to allow therapeutic process.” Others mentioned that if parents were not directly involved, sometimes their actions in the background could be distracting for clients: “Sometimes [the] caregiver is doing something distracting in [the] same room as [the] child and not helping them focus or participate.” Together, these quotes indicate that involving caregivers in music therapy sessions with children on the autism spectrum holds great promise, if therapists can continue to develop their skills in navigating the therapist-client-parent relationship. The complexity of caregiver involvement was summarized in the following participant quote: “I found having parents and/or carers involved in the sessions was an overall positive; though they sometimes interfered before the client had an opportunity to respond to a prompt or had misbehavior, they were also encouraging and provided comfort and support as primary caregivers as well as modeling desired engagement. It perhaps even allowed parents and care givers to observe the progress and interactions that occur in music therapy sessions that they may not have otherwise seen!”

Setting Factors

The most frequently reported theme (with seventy-six mentions) related to the effects that being in one's home rather than a clinic or school setting had on engagement. Within this theme, participants noted that: 1) Many clients were more comfortable at home, but 2) home could be more distracting for some, and 3) the setting with preferred instruments was most engaging. Participants noted that clients displayed increased comfort and decreased anxiety and fatigue at home: "The safety and comfort of their own homes seems to provide opportunities for some of my clients engage in sessions with significantly less anxiety." "They are less fatigued from travel. . . they feel at ease at home." Participants also reported that the support available at home increased clients' comfort levels:

> "For some of the clients I see their behavioral needs are more readily met at home than at school. Since their needs are being met by the people who understand them best (family), there has been a significant diminishing of acting out behaviors."

Given the sensory-regulation difficulties experienced by many on the autism spectrum, it is reasonable that a familiar and predictable environment would aid regulation, which is usually a pre-requisite for any kind of therapeutic work with children on the autism spectrum. Others noted that some home environments were sometimes chaotic and distracting – i.e., not helping clients remain regulated: "Most clients participate via Telehealth in their homes, which provides a lot more stimuli to distract them (i.e. sibling running around, parents cooking)." Distractions became increased when supports were not available at home: "Home environment is not calm and consistent . . . the client does not have the same level of support at home than they may at school." Beyond the comforts of home and quality of support available, many respondents talked about the impacts of instrument and sensory prop availability. Some clients who had instruments available at home thrived: "[At home, the clients] have access to all instruments at all times, rather than having to communicate their wishes, share control, etc." Not having preferred instruments at home posed a challenge: "It's harder because they may not have access at home to all the props, instruments, puppets, fidgets, etc. that we use in sessions." Taken together with the importance of caregiver support in sessions (as in the previous theme), one can surmise that a home

environment that is calm, includes access to preferred instruments, and is distraction free along with a supportive caregiver may promote a positive environment for telehealth settings.

Personal Connection

Sixty-two respondents made statements related to personal connection with clients. Categories included: 1) The effects of less direct eye contact, 2) altered sense of connection, 3) effects of not being physically present, and 4) decreased social anxiety in clients. Many noted that interacting over Zoom removes the requirement for direct eye contact, as exemplified in the following two quotes: “A handful of my verbal clients have expressed that they feel less social anxiety over telehealth (i.e., no expectation/demand to "look someone in the eye").” “Some clients may find it easier to focus on screen since there may be less social stimuli (for example many autistic people report feeling overwhelmed by eye contact).” Respondents also noted an altered sense of connection with clients. One perceived that clients felt more isolated: “For some, the lack of physical proximity to the MT removes a primary motivating factor of the relationship, isolating the client.” Another participant stated that “some may not understand why their therapist is on a screen versus in the room with them or may not feel comfortable with watching a screen ([they] desire the in-person human contact over the teletherapy method).” One person noted that it was easier to maintain client relationships when they had been previously established in-person: “I have had many of my clients for multiple years so a strong relationship exists. This has certainly contributed to the success of telehealth sessions.” Many respondents talked directly about physical contact/prompting in their responses. They noted either that the lack of physical presence was difficult for some clients, or that the lack of physical proximity actually created a safer space for clients to do therapeutic work. The following two quotes provide examples regarding the difficulties and benefits (respectively) related to lack of physical contact, “I cannot physically mold the child’s movement or grasping of instrument. I cannot guide [the] child’s attention by getting physically closer to him/her. Children cannot touch or play my ukulele, guitar, autoharp, drum as in live session.”

> "I have had one client who has benefitted from telehealth because she was becoming frustrated with in person therapy and having some lashing out behaviors. Teletherapy has provided a safe space of opportunity to feel comfortable in her home environment while still maintaining a relationship with me, the music therapist."

Finally, many explicitly stated that many autistic persons who experienced social anxiety in-person were much more at-ease over telehealth. "For a lot of clients, in the virtual setting they appear to have less anxiety around social interaction." The complexity of the relationship between social anxiety, comfort, and telehealth was expressed by one participant who said that "Clients who struggle socially tend to be responding to telehealth better. Other clients, who need the social or hands-on interaction, are struggling."

Specific Client Characteristics

Forty-one therapists reported that individual client characteristics impacted client engagement: 1) Clients with high levels of independence benefited from telehealth and 2) clients needing more support struggled over telehealth unless they had at-home support. Clients who could make their own decisions seemed to gain confidence over telehealth:

> "Some of my clients have done quite well over telehealth because it gives them more control and independence. They can pull up YouTube videos, screenshare with me, they log onto the sessions independently . . . it has given them a level of confidence to be more independent."

Similarly, one participant articulated that having more control could benefit older clients: "Some clients do well (older children), I believe, because they can have more control over the session: 'I want to show you this' or 'let's click that button' etc. where perhaps they did not before." One therapist noted that client fit as well as therapist's adaptation were both needed: "I notice that clients who are able to engage verbally and who do not have significant light/visual sensitivity are generally able to engage in telehealth sessions. (I have also adjusted my therapeutic style to make telehealth more effective)." Other therapists described that those who were younger, non-speaking, or had high sensory or behavioral needs found telehealth more challenging:

> "Clients with ASD who are verbal do much better over telehealth than those who are nonverbal or use AAC to communicate. . . My nonverbal clients are struggling and those are the ones we have returned to in-person services. Prompting use of AAC is nearly impossible over telehealth. Clients with severe difficulty with sensory regulation have a tough time with the sound of the audio."
>
> "Those that do worse may struggle with vision issues, arousal fluctuations, 'getting stuck' and not having access to the therapist to provide direct input that helps with arousal/regulation/functional output, and having patterned behavior at home that is hard to manage (and that family members may attempt to manage in very dysfunctional ways)."

Responses in the theme of individual differences imply a dichotomy between those who would benefit greatly from telehealth without additional support (those older, with more independence), and those who might require greater caregiver support in order to benefit from telehealth (younger children, non-speaking children, those with high sensory or behavioral needs).

Attention Factors

Attention was mentioned thirty-seven times in participants' responses. These responses tended to fit one of these two categories: 1) Clients focus better over telehealth, or 2) clients did not attend via telehealth. One therapist described the stark improvement in attention in a client over telehealth: "One of my clients who has never stayed engaged in a group setting was very excited about telehealth and kept the screen right up to his face the entire session, whereas his attention span only lasted for about 5 minutes in person." Others attempted to explain why telehealth helped clients to focus, saying that "For those who have enough language and cognitive skills, the simplification of facial and non-verbal stimuli that comes with only focusing on a person's upper body might help them focus" or "For those doing better the factors might be: focused attention to the screen . . . therapist becomes an onscreen character." Conversely, others said that it was "generally more difficult to sustain attention and engagement over telehealth." Some stated that length of session was a factor: "I think it's difficult to keep a client's attention and actively

engage them throughout the length of the teletherapy experience." The divergence in responses regarding whether it is more or less difficult to attend over telehealth reveals some of the original rationale and motivation behind the current study.

Screening Tool

Ideally, music therapists would have the tools and information to do telehealth music therapy with any client on the autism spectrum who could benefit from virtual music therapy. The music therapists who participated in the current study provided a wealth of insight into what they perceived could help telehealth sessions work for autistic clients of varying and what could make things difficult. Thus, the researcher created a screening tool as an aid to music therapists providing music therapy over telehealth to autistic persons. See Figure 1. Most of the questions on the screening tool relate directly to the qualitative themes in the current study; a few reflect the wider ethical and practical elements that are incumbent upon music therapists to consider. The following is a description and rationale for each part of the screening tool.

Explanation of the Screening Tool

Part A of the screening tool relates to client characteristics. Question 1: *Does the individual have limited access to in-person music therapy?* This question clarifies whether the client is being considered for telehealth because there is no option for in-person sessions, or if an option for in-person music therapy exists. If an option for in-person music therapy exists, then impetus is stronger for the music therapist to carefully consider in consultation with the family whether telehealth is the best option. Question 2: *Is the individual interested in telehealth?* Here, music therapists are encouraged to ensure that the client is open to trying sessions – some may not be interested in online sessions. Question 3: *Does the client have reliable internet and access to a computer with a web camera & microphone?* This question relates to theme two: "technical factors." Access to good internet can be challenging in some rural areas, and both reliable internet access and computers with a web-camera and microphone may not be present for clients of lower socio-economic status. Therapists must avoid making assumptions that all potential clients have

access to internet/good equipment. Question 4: *Is the individual familiar with screens/computer usage?* This question relates to theme one: "familiarity with screens." In the current study, a major trend emerged indicating that autistic clients who were familiar with computer usage/screens often transitioned well to telehealth. Thus, if potential clients do not commonly use computers, transitioning to telehealth could be more challenging. Question 5: *If the individual requires more support (i.e., is non-speaking, has high sensory needs), do they have a caregiver who is willing to participate in sessions in collaboration with you as the therapist?* This question relates to themes five and six: "individual characteristics" and "caregiver presence." Participants' responses quite clearly indicated that caregiver presence with clients who require such support was highly needed and valued. Thus, it is worthwhile to confirm whether a caregiver can be present during sessions if needed. Question 6: *Is the individual's environment calm and free from distractions?* This question relates to theme three: setting factors. Participants indicated that taking part in music therapy at home increased the comfort level of some clients; yet if the home environment was distracting or chaotic, the comfort factor of telehealth seemed to be compromised. Question 7: Does the individual have an appropriate space for sessions (e.g., space for movement when addressing sensorimotor goals)? This question also relates to the theme of setting, whereby the size of the room must be appropriate for the clients' goal areas, particularly if they require movement. Question 8: *Does this individual tend to suffer from social anxiety when present with others in-person?* This question relates to theme four: "social connection." A trend in participant responses was that autistic clients who tended to become overwhelmed or anxious during in-person group music therapy situations sometimes were much calmer and able to focus during telehealth sessions. Thus, a client with acute social anxiety could potentially benefit from starting sessions over telehealth. Of course, if clinical goals include increasing social interaction, eventually transitioning to in-person sessions could be of benefit. Question 9: *Does the individual have access to preferred musical instruments or required sensory tools (e.g., exercise ball, weighted vest) at home?* This question relates to theme three: "setting factors." Many participants noted that having access to preferred musical instruments/sensory tools was important for

maintaining client engagement over telehealth. Thus, the availability of instruments/sensory props is a pragmatic and necessary consideration for telehealth.

Part two of the screening tool relates to therapist characteristics. Question 10: *Does the therapist have an ethernet (hardwired) internet connection, or strong/reliable wireless internet?* This question relates to theme two: "technical factors." Given that internet glitches were reported as a source of great frustration, it is important for therapists conducting telehealth to have strong internet. Questions 11 & 12: *Does the therapist have access to a secure online platform to run sessions? Does the therapist have proper consent forms and liability waivers for online sessions?* These questions, relating to ethical implementation of telehealth, did not arise directly from the qualitative interviews in the present study. However, ethical implementation of music therapy is obviously of crucial importance, including over telehealth, and therefore merits inclusion on a screening form such as this one. Questions 13 & 14: *Does the therapist have a good microphone and an understanding of how to optimize sound for online environments? Does the therapist have tools (i.e., ability to pre-record music, adjusted interventions) to accommodate for the time lag that is present with online sessions?* These questions also relate to the theme of "technical factors," as the therapist must ensure that they can compensate well enough for the differences in sound quality and timing over telehealth. Question 15: *Does the therapist have access to assessment tools and understanding of virtual implementation strategies (e.g., online assessments, screen-sharing, or caregiver assistance)?* This question is a more general prompt to ensure the therapist is undergoing sufficient preparation to translate therapeutic materials to a telehealth modality. Question 16: *Is the therapist prepared to educate and train caregivers in how to support the individual during sessions?* Theme six, "caregiver involvement," revealed therapist perceptions that having caregivers present during telehealth sessions was necessary for some clients and often helpful. Others wrote that they experienced challenges in knowing how to best support the caregiver to in-turn support the child during music therapy. Thus, this question frames the issue of caregiver involvement as an opportunity to support and educate parents and invites clinicians to consider their own skill-set and develop their ability to do so. Question 17: *Does the*

therapist have access to musical instruments or sensory items that they can provide to individuals if needed? Since question 9 already asked therapists to investigate whether families/clients have access to instruments and props; this question calls therapists to consider whether they may be able to provide resources to clients who may not otherwise have access to these items. Question 18: *Is the therapist connected to resources that can help them navigate challenges to online service delivery?* This question serves as a prompt to remind therapists to continue to grow in their ability to provide quality telehealth music therapy by accessing available resources. Questions 19: *If any answers were "no" or "uncertain," does the therapist have access to supports that can bolster resources and skills to mitigate challenges in specific areas?* This question is simply a prompt to help therapists continue to think creatively and understand their clients' contexts on a deeper level to make an effective recommendation where telehealth is concerned. Therapists are encouraged to use this screening tool as a resource, but must continue to use their own clinical judgement in deciding how to provide music therapy, since at the time of publication, this tool has not been validated as a standardized test.

Discussion

The participants in the current study provided rich information regarding their perceptions of the benefits and challenges autistic individuals face when engaging in telehealth music therapy. The seven major themes gleaned from responses can be summarized as follows: familiarity with screens could aid engagement or become a distraction; technology provided new resources but technical glitches could derail sessions; caregivers were often required to assist clients with participation, but music therapists sometimes perceived difficulties in navigating how to include caregivers in sessions; the home setting increased comfort in many clients, particularly if there were few distractions and instruments were available; the altered (virtual) method seemed to diminish social anxiety in some clients, while other therapists experienced a difficulty in making personal connections with clients over Zoom; clients who were older and more independent tended to engage better over telehealth, while younger clients or those who were non-speaking/with higher sensory needs struggled unless they had caregiver support; some

clients seemed to attend better over telehealth while for others it was difficult to maintain engagement. These insights led to the creation of a screening tool that music therapists can use to help guide collaborative decisions with clients regarding whether telehealth music therapy may be a good fit.

Though the amount of research on the intersection of telehealth, autism, and music therapy is not large, many of the themes identified by the researcher echoed those found in other autism and telehealth research such as the comfort but potential distracting nature of the home setting (Kalvin et al., 2021), decreased anxiety over telehealth due to fewer social pressures (Ameis et al., 2020), the challenge of technical difficulties (Solomon & Soares, 2020), and the necessity for caregiver involvement with some individuals (Su et al., 2021). The resonances of some of the current study's themes with other literature (Kalvin et al., Solomon & Soares, Ameis et al., & Su et al) would seem to indicate that a certain level of generalizability exists. However, the generalizability of the current literature may be limited by its narrow context: music therapy telehealth with autistic clients during a global pandemic in North America. Future studies could investigate this topic on a broader worldwide level and investigate whether the telehealth screening tool is reliable in determining whether an autistic person would be able to engage well and benefit from telehealth music therapy.

Limitations

Despite being circulated by the CBMT, CAMT, and World Federation of Music Therapy, responses totaled 192, about 2% of those who received an invitation to the study. This low response rate is likely due to a number of factors including: not all music therapists who were invited to participate may have fit the inclusion criteria; regions outside of North America may not have transitioned to online music therapy during the study period; a large number of surveys on music therapy and telehealth were circulating around the same time as the current survey, which may have led to participant survey fatigue; and the survey was available in English only due to funding constraints preventing from translating it into other languages. Of the five gender categories provided on the survey (see supplemental materials), the vast majority of respondents identified as women, with only a few identifying as men. The disparity between

women and men in survey responses reflects the gender balance of music therapists in general, most of whom identify as women (Kern & Tague, 2017). Methodologically, the qualitative process did not include member-checking to ascertain whether the categories resonated with participants of the study. Future studies should examine whether similar themes emerge with other music therapists, and/or autistic community members and their families regarding the challenges and benefits of telehealth music therapy. Another limitation is that the survey did not collect demographic information related to race-ethnicity and socioeconomic status of respondents. This information would have been helpful in terms of identifying disparities between communities who may have varied access to technological resources and should be included in future studies. Finally, this study included data regarding the opinions and thoughts of music therapists, and not directly autistic clients and their caregivers. Future studies should consult autistic community members to obtain a complementary perspective on engagement in music therapy telehealth.

Conclusion

Several factors influence whether autistic persons are likely to engage well in music therapy over telehealth. These include the client's comfort level with screens, the level of distraction in the home, the presence and effectiveness of caregivers, the ability to build rapport with the client, the client age, level of verbal ability, sensory needs, presence of technology resources, prior social anxiety, and the overall ability to attend during telehealth sessions. Assessing a client's circumstances related to these factors may help to identify factors which make clients more (or less) suitable for telehealth music therapy. The screening tool created out of the data collected in the present study provides a concrete strategy to make telehealth music therapy effective for autistic persons. Identifying keys to successful online engagement with this tool may help therapists maximize their ability to serve autistic clients over telehealth. As a result, the improved efficacy of music therapists' online delivery of services will help increase availability of music therapy for those who may not have access to in-person therapy, or who may benefit from telehealth.

References

Ameis, S. H., Lai, M.-C., Mulsant, B. H., & Szatmari, P. (2020). Coping, fostering resilience, and driving care innovation for autistic people and their families during the COVID-19 pandemic and beyond. *Molecular Autism*, *11*, 61. https://doi.org/10.1186/s13229-020-00365-y

Baker, F., & Krout, R. (2009). Songwriting via Skype: An Online Music Therapy Intervention to Enhance Social Skills in an Adolescent Diagnosed with Asperger's Syndrome. *British Journal of Music Therapy*, *23*(2), 3–14. https://doi.org/10.1177/135945750902300202

Canada, H. (2006, June 29). *Information Management and Technology*. https://www.canada.ca/en/health-canada/services/health-care-system/reports-publications/primary-health-care/information-management-technology.html

CBMT-AMTA-Scope-of-Music-Therapy-Practice.pdf. (2018). Retrieved June 8, 2021, from https://www.cbmt.org/wp-content/uploads/2019/10/CBMT-AMTA-Scope-of-Music-Therapy-Practice.pdf

CDC Centers for Disease Control and Prevention. (2021). *Autism prevalence higher in CDC's ADDM network.* https://www.cdc.gov/media/releases/2021/p1202-autism.html

Cole, L. P., Henechowicz, T. L., Kang, K., Pranjić, M., Richard, N. M., Tian, G. L. J., & Hurt-Thaut, C. (2021). Neurologic music therapy via telehealth: A survey of clinician experiences, trends, and recommendations during the COVID-19 pandemic. *Frontiers in Neuroscience*, *15*, 648489. https://doi.org/10.3389/fnins.2021.648489

Corey, G. (2009). *Theory and Practice of Counseling and Psychotherapy* (8th edition). Thomson Brooks/Cole.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Gaddy, S., Gallardo, R., McCluskey, S., Moore, L., Peuser, A., Rotert, R., Stypulkoski, C., & LaGasse, A. B. (2020). COVID-19 and music therapists' employment, service delivery, perceived stress, and hope: A descriptive study. *Music Therapy Perspectives*, *38*(2), 157–166. https://doi.org/10.1093/mtp/miaa018

Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Kalvin, C. B., Jordan, R. P., Rowley, S. N., Weis, A., Wood, K. S., Wood, J. J., Ibrahim, K., & Sukhodolsky, D. G. (2021). Conducting CBT for anxiety in children with autism spectrum disorder during COVID-19 pandemic. *Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s10803-020-04845-1

Kern, P., & Tague, D. B. (2017). Music therapy practice status and trends worldwide: An international survey study. *Journal of Music Therapy*, *54*(3), 255–286. https://doi.org/10.1093/jmt/thx011

Knott, D., & Block, S. (2020). Virtual music therapy: Developing new approaches to service delivery. *Music Therapy Perspectives*, *38*(2), 151-156. https://doi.org/10.1093/mtp/miaa017

Levy, C. E., Spooner, H., Lee, J. B., Sonke, J., Myers, K., & Snow, E. (2018). Telehealth-based creative arts therapy: Transforming mental health and rehabilitation care for rural veterans. *The Arts in Psychotherapy*, *57*, 20–26. https://doi.org/10.1016/j.aip.2017.08.010

Lightstone, A. J., Bailey, S. K., & Voros, P. (2015). Collaborative music therapy via remote video technology to reduce a veteran's symptoms of severe, chronic PTSD. *Arts & Health*, *7*(2), 123–136. https://doi.org/10.1080/17533015.2015.1019895

Lindgren, S., Wacker, D., Suess, A., Schieltz, K., Pelzel, K., Kopelman, T., Lee, J., Romani, P., & Waldron, Debra. (2016). Telehealth and autism: Treating challenging behavior at lower cost. *Pediatrics*, *137*(S2), e201528510. https://doi.org/10.1542/peds.2015-2851O

Public Health Agency of Canada. (2018). *Autism Spectrum Disorder among children and youth in Canada 2018: A report of the national autism spectrum disorder surveillance system*. Retrieved from https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/diseases-

conditions/autism-spectrum-disorder-children-youth-canada-2018/autism-spectrum-disorder-children-youth-canada-2018.pdf

Rizkallah, M. (2020). The North London Music Therapy Phone Support Service for NHS staff during the COVID-19 pandemic: A report about the service and its relevance for the music therapy profession. *Approaches: An Interdisciplinary Journal of Music Therapy*, 1-9. Retrieved from http://approaches.gr/wp-content/uploads/2020/11/Approaches-FirstView-r20201110-Rizkallah.pdf

Shakes, P., & Cashin, A. (2019). Identifying language for people on the autism spectrum: A scoping review. *Issues in Mental Health Nursing*, *40*(4), 317–325. https://doi.org/10.1080/01612840.2018.1522400

Simacek, J., Elmquist, M., Dimian, A. F., & Reichle, J. (2021). Communication interventions for young children with or at risk for autism spectrum disorder. *Current Developmental Disorders Report*, *8*, 15–23. https://doi.org/10.1007/s40474-020-00214-w

Solomon, D., & Soares, N. (2020). Telehealth approaches to care coordination in autism spectrum disorder. In *Interprofessional Care Coordination for Pediatric Autism Spectrum Disorder*. Springer Nature. https://doi.org/10.1007/978-3-030-46295-6_19

Spooner, H., Lee, J. B., Langston, D. G., Sonke, J., Myers, K. J., & Levy, C. E. (2019). Using distance technology to deliver the creative arts therapies to veterans: Case studies in art, dance/movement and music therapy. *The Arts in Psychotherapy*, *62*, 12–18. https://doi.org/10.1016/j.aip.2018.11.012

Stegemöller, E. L., Diaz, K., Craig, J., & Brown, D. (2019). The feasibility of group therapeutic singing telehealth for persons with parkinson's disease in rural iowa. *Telemedicine and E-Health*, *26*(1), 64–68. https://doi.org/10.1089/tmj.2018.0315

Su, W.-C., Srinivasan, S., Cleffi, C., & Bhat, A. (2021). Short report on research trends during the COVID-19 pandemic and use of telehealth interventions and remote brain research in children with autism spectrum disorder. *Autism*, 1–7. https://doi.org/10.1177/13623613211004795

Talmage, A., Clulee, M. B. C., Cho, H., Glass, M., Gordon, J., Kong, J. C., Hoskyns, S., Hunt, B. J., Jeong, A. A. Y., Johns, L., Hunt, E. L., Matthews, E., Rickson, D., Landreani, C. R., Sabri, S., & Solly, R. (2020). Music Therapy in a time of pandemic: Experiences of musicking, telehealth, and resource-oriented practice during COVID-19 in Aotearoa New Zealand. *The New Zealand Journal of Music Therapy*, *18*, 7–66.

Thaut, M., & Hoemberg, V. (Eds.). (2014). Handbook of neurologic music therapy. New York, NY: Oxford University Press.

Trevisan, D.A., Roberts, N., Lin, C., Birmingham, E. (2017). How do adults and teens with self-declared Autism Spectrum Disorder experience eye contact? A qualitative analysis of first-hand accounts. *PLoS ONE 12*(11): e0188446. https://doi.org/10.1371/journal.pone.0188446

Vaudreuil, R., Langston, D. G., Magee, W. L., Betts, D., Kass, S., & Levy, C. (2020). Implementing music therapy through telehealth: Considerations for military populations. *Disability and Rehabilitation: Assistive Technology*, 1–10. https://doi.org/10.1080/17483107.2020.1775312

White, L. C., Law, J. K., Daniels, A. M., Toroney, J., Vernoia, B., Xiao, S., The Spark Consortium, Feliciano, P., & Chung, W. (2020). Brief Report: Impact of COVID-19 on Individuals with ASD and Their Caregivers: A Perspective from the SPARK Cohort. *Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s10803-020-04816-6

White, S. W., Stoppelbein, L., Scott, H., & Spain, D. (2021). It took a pandemic: Perspectives on impact, stress, and telehealth from caregivers of people with autism. *Research in Developmental Disabilities*, *113*, 103938. https://doi.org/10.1016/j.ridd.2021.103938

Yi, Z., & Dixon, M. R. (2021). Developing and enhancing adherence to a telehealth ABA parent training curriculum for caregivers of children with autism. *Behavior Analysis in Practice*, *14*, 58–74. https://doi.org/10.1007/s40617-020-00464-5

Tables and Figures

Table 1: Participant Demographics

Variables	Mean ± (SD)
Years of music therapy practice	12.36 (12.38)
Years of experience with autistic clients	10.57 (10.68)
	# of Clinicians (%)
Music Therapist Age	
18-24	19 (9.9)
25-34	82 (42.7)
35-44	32 (16.7)
44-54	29 (15.1)
55+	30 (15.6)
Client Ages Served	
Children 0-12 years	70 (36.5)
Adolescents 13-21 years	37 (19.3)
Adults 22 years and older	20 (10.4)
A combination of ages	58 (30.2)
Country	
United States	164 (85.4)
Canada	25 (13.0)
Chile	1 (0.5)
Singapore	1 (0.5)
Taiwan	1 (0.5)
Gender	
Men	17 (8.8)
Women	175 (91.1)
Education	
Bachelor's degree	94 (48.9)
Master's degree	80 (41.7)
PhD	8 (4.2)
Other	10 (5.2)
Additional Training	
Occupational therapy	3 (1.6)
Special education	38 (19.8)
Applied Behaviour Analysis (ABA)	29 (15.1)
DIRFloortime	14 (7.3)
Neurologic Music Therapy	56 (29.2)
Other (e.g., speech-language therapy, counseling/psychotherapy, parent of autistic child, other autism trainings).	24 (12.5)

Figure 1: Telehealth Music Therapy Screening tool for Autistic Individuals

Telehealth Music Therapy Screening Tool for Autistic Individuals			
A higher number of "yes" answers may indicate that music tele-therapy will be a good fit.			
Part A: Client Considerations	**Yes**	**No**	**Unsure**
1. Does the individual have limited access to in-person music therapy?			
2. Is the individual interested in receiving online music therapy?			
3. Does the individual have reliable internet and access to a computer?			
4. Is the individual familiar with screens/computer usage?			
5. If the individual requires more support (i.e., is non-speaking, has high sensory needs), do they have a caregiver who is willing to participate in sessions in collaboration with you as the therapist?			
6. Is the individual's session environment calm and free from distractions?			
7. Does the individual have an appropriate space for sessions (e.g., space for movement when addressing sensorimotor goals)?			
8. Does this individual tend to suffer from social anxiety when present with others in-person?			
9. Does the individual have access to preferred musical instruments or required sensory tools (e.g., exercise ball, weighted vest) at home?			
Part B: Therapist Considerations			
10. Does the therapist have an ethernet (hardwired) internet connection, or strong/reliable wireless internet?			
11. Does the therapist have access to a secure online platform to run session?			
12. Does the therapist have proper consent forms and liability waivers for online sessions?			
13. Does the therapist have a good microphone and an understanding of how to optimize sound for online environments?			
14. Does the therapist have tools (i.e., ability to pre-record music, adjusted interventions) to accommodate for the time lag that is present with online sessions?			
15. Does the therapist have access to assessment tools and understanding of virtual implementation strategies (e.g., online assessments, screen-sharing, or caregiver assistance)?			
16. Is the therapist prepared to educate and train caregivers in how to support the individual during sessions?			
17. Does the therapist have access to resources (e.g., musical instruments, sensory items) that they can provide to individuals?			
18. Is the therapist connected to a network of other health care professionals who can help them navigate challenges to online service delivery?			
19. If any answers were "no" or "uncertain," does the therapist have access to supports that can bolster resources and skills to mitigate challenges in specific areas?			
Created in 2022 by Nicole Richard			