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Telehealth music therapy research, training and practice: A scoping review

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ABSTRACT

Telehealth music therapy (TMT) has rapidly evolved from a niche practice into a vital mode of service delivery, accelerated by the COVID-19 pandemic. Prior to 2020, literature on TMT was sparse and exploratory; however, the pandemic catalyzed widespread adoption, compelling music therapy practitioners to adapt quickly to virtual formats. This scoping review mapped and synthesized existing evidence on TMT to examine its scope, reported experiences, and emerging frameworks across clinical, educational and community domains. Using the Joanna Briggs Institute methodology and PRISMA-ScR guidelines, eight databases were searched, yielding 53 eligible peer-reviewed studies, spanning 2009–2025. Included studies addressed applications of TMT across diverse populations and contexts, including children with developmental delays, adults with cancer, older adults with dementia and Parkinson's Disease, veterans, caregivers, and students. Results demonstrated high feasibility, accessibility, and acceptability of TMT, while also acknowledging that TMT may not always be the optimal choice. TMT was predominantly delivered synchronously via videoconferencing and therapeutic benefits included reduced anxiety, improved mood, greater caregiver-client connection, and enhanced client engagement. Educational studies highlighted both challenges and innovation in telehealth training, while practitioners' perspectives showed resilience, adaptability, and their need for structured telehealth methods. Existing research is dominated by small-scale qualitative and feasibility studies, with a lack of randomized controlled trials to establish comparative effectiveness. Despite these limitations, evidence supports TMT's acceptability and its potential for integration into hybrid service delivery methods, expanding access and continuity of care. This review provides a comprehensive foundation for future research, practice innovation, and policy development in TMT.

Telehealth is a transformative service delivery method of care that leverages technology to provide healthcare services remotely, breaking down barriers of distance and access. Music therapy may also be provided via telehealth and has expanded opportunities for many individuals to participate in therapy beyond in-person sessions. Before the global COVID-19 pandemic in 2020, telehealth music therapy (TMT) was a nascent and underexplored area of practice, with only a small body of literature addressing its potential applications and efficacy

(Baker & Krout, 2009; Lightstone et al., 2015). Amid the pandemic, TMT gained significant traction which necessitated the rapid and widespread shift from traditional in-person sessions to virtual modes of service delivery (Clements-Cortés et al., 2023). This sudden transition posed considerable challenges for music therapists, many of whom had limited prior experience with digital platforms and virtual facilitation methods. Further, practitioners had minimal formal guidance or evidence-based frameworks to draw upon.

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Despite its crisis-driven adaptation, TMT has demonstrated considerable potential for long-term integration into diverse clinical settings, with applications that extend well beyond the pandemic context. As TMT continues to evolve, it presents a significant opportunity to increase accessibility to music therapy services, particularly for individuals and communities who face barriers to in-person care due to circumstantial, geographical, physical, or socioeconomic constraints (Kelly et al., 2024) and for those it is a preferred mode of care delivery. In this context, TMT has emerged not only as a necessary response to global health emergencies but also as a promising and sustainable avenue for expanding the reach and impact of the profession. As Knott and Block (2020) assert, this shift offers valuable opportunities to “expand access to music therapy in order to meet needs in our healthcare systems, educational settings, and communities” (p. 152), suggesting that the future of music therapy may increasingly rely on the integration of digital and hybrid delivery methods.

While individual studies have explored various aspects of telehealth delivery (Clements-Cortés et al., 2023), including technological adaptations (Cephas et al., 2022), therapeutic outcomes (Cole et al., 2021), and practitioner experiences (Clements-Cortés et al., 2025), these findings remain dispersed across clinical domains and lack an overarching analytical framework. As such, there is a clear need for a structured examination of the existing evidence to better understand the scope, trends, and limitations within this emerging and transformative area of practice.

Aims

The aim of this scoping review was to systematically map and synthesize the existing literature concerning research and professional practices in relation to TMT. Additionally, we aimed to capture the experiences of telehealth delivery and practice, incorporating the perspectives of clients, students, educators, and professionals. This review endeavors to elucidate the current state of the field, encompassing prevailing methodologies, populations served, clinical contexts, and the music interventions and technological tools employed, while systematically identifying gaps in the existing literature. The initial broad research questions included: 1) What are the current practices of Telehealth Music Therapy (TMT)? 2) What populations are most commonly served? 3) What are the interventions and outcomes portrayed in the literature? 4) What are the barriers and facilitators of TMT? The final data set determined the organization of our results around these questions.

Method

The scoping review was conducted in compliance with the Joanna Briggs Institute methodological framework (Aromataris et al., 2024), using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) criteria: Checklist and Explanation guidelines (Peters et al., 2020a, 2020b; Tricco et al., 2016). The PRISMA-ScR framework was selected to systematically map the breadth, scope, and characteristics of telehealth music therapy research and practice across diverse contexts, as scoping reviews are best suited for emerging, heterogeneous fields dominated by qualitative, descriptive, and observational evidence rather than comparative efficacy studies. The research team was composed of members of the Special Interest Group on Telehealth Music Therapy formed as part of the International Association for Music and Medicine Association in 2021.

Eligibility criteria

Articles were eligible if they (1) examined current practices of TMT, (2) were published in English, (3) were categorized as original research, (4) included a music therapist or reported on music therapy practices, and (5) were peer-reviewed. Review papers, book chapters, conference

proceedings, or articles that included music used online but not as part of TMT were excluded. For example, a study where an allied health care professional provided music in an online telehealth session. As the first comprehensive review on the topic, publication year was not considered as an inclusion/exclusion criterion.

Search strategy

The search was carried out across eight databases, including Cochrane Library, EBSCOhost, Ovid, PubMed, Sage, Science Direct, SCOPUS, and Web of Science, for articles published before March 2025. The search strategy was developed by the research team using the population, concept, and context (PCC) mnemonic (Peters et al., 2020a, 2020b). Terms such as “music therapy” or “music intervention” were used to define the concept, the terms “telehealth” or “telemedicine” or “virtual” were used to describe the context, while the population was not specified in order to capture all relevant publications across the lifespan (i.e., involving children, adolescents, and adults; see Table 1).

Additionally, we conducted a hand search of non-ISI journals relating to music therapy and/or music and health on July 10, 2025. This included *Approaches: An Interdisciplinary Journal of Music Therapy* and *Voices: A World Forum for Music Therapy*. Finally, we cross-referenced the bibliographies of selected studies to ensure we captured current and emerging evidence. Potential studies for inclusion were identified, sourced, shared with the research team, and reviewed at a research meeting, where the final decision was made. This process was repeated for each study until no new studies were identified. The full search strategy is available upon request.

Screening and data extraction

The filtering processes of the search results were completed using the Covidence software (Veritas Health Innovation, n.d.), an online systematic review workflow platform that facilitates study screening, deduplication, and data extraction. Following import, duplicate records were removed, and the remaining references were made available to the research team for screening and review. Six research team members independently completed the initial title and abstract screening, wherein each article was screened by two reviewers to ensure eligibility. Any uncertainties during the screening process led to papers being advanced to the next stage of full-text screening for further evaluation. The remaining two researchers then independently reviewed the full texts of the relevant studies. An online meeting was held with the first author to mediate and resolve any discrepancies in the screening decisions, ultimately reaching a consensus by thoroughly discussing each point of dispute (< 5 studies). Succeeding this, a final decision was made on which studies to include in the review.

We systematically extracted the following information from the included studies: publication details (i.e., author, year), clinical population, study design, aims, sample characteristics (i.e., sample size, age, sex), intervention description, and key findings. Extracted data were

Table 1
Search strategy for PubMed.

1	Telehealth [Title/Abstract]	18,455
2	Telepractice [Title/Abstract]	384
3	Virtual [Title/Abstract]	117,383
4	Digital [Title/Abstract]	220,783
5	Online [Title/Abstract]	296,202
6	Remote [Title/Abstract]	115,310
7	#1 OR #2 OR #3 OR #4 OR #5 OR #6	721,253
8	Music [Title/Abstract]	25,069
9	#7 AND #8	1776
10	“therap*” [Title/Abstract]	4006,906
11	#9 AND #10	393
12	#11 English Only	384

charted and descriptively synthesized in accordance with PRISMA-ScR and Joanna Briggs Institute guidance. To address the four research questions, data from the included studies were systematically collated, synthesized, and organized into a priori categories based on clinical setting (Supplementary Table 1) and reported experiences of TMT (Supplementary Table 2). The synthesis focused on mapping the scope and distribution of evidence, narratively describing patterns across study designs, populations, and intervention types, and reporting frequencies where relevant. Two authors reviewed, summarized, and drafted the synthesis within each subsection, ensuring consistency in interpretation of study characteristics and reported outcomes.

Results

A total of 2849 sources were identified from search of eight electronic databases. After removing 1771 duplicates, 1078 studies were screened based on the title and the abstract, of which 909 did not meet the inclusion criteria. A full review was conducted for the remaining 168 records; of these, 53 studies met the inclusion criteria for this review (see Fig. 1).

The publication dates of the eligible studies spanned 16 years from 2009 to 2025, of which 94.3 % of studies (n = 50) were published after 2020. Fig. 2 presents publications included in the scoping review by year (A) and by research area (B).

The included studies have a diverse range of methodological designs. Specifically, 34 % used a pre-post design (18/53), 28.3 % used

interviews (15/53), 24.5 % used surveys (13/53), 20.8 % were case studies (11/53), and 1.9 % were retrospective observational studies (1/53). Percentages exceed 100 % because several studies used more than one method. Thirty-six studies reported on the use of TMT across clinical settings and 17 examined the client, student and educator experiences of TMT. Subsections within each area were data-driven rather than pre-determined, in that the categories, such as older adults, oncology, psychosocial support, and children/adolescents, were created based on how TMT was described and implemented in the published studies. Interrater reliability was assessed with Cohen’s κ. Reviewers agreed on 141 of 168 records (84 % agreement). Cohen’s κ was 0.68, indicating significant agreement beyond chance.

Clinical applications of TMT

Older adults

Fifteen studies were related to TMT for older adults with a range of conditions including Parkinson’s disease (Shah-Zamora et al., 2024; Stegemöller et al., 2020; Tamplin et al., 2024) and dementia (Clark et al., 2024; Dassa, 2023; Dassa et al., 2021; Kelly et al., 2024; Mercadal-Brotons et al., 2023; Thompson et al., 2023). Several studies explored the impact of TMT on older adults (Haddad et al., 2024; Pearson et al., 2023; Wilhelm & Wilhelm, 2022) including an inter-generational group for grandparents (Gvili & Bodner, 2024).

TMT has demonstrated substantial emotional and psychosocial benefits for older adults across various populations and conditions.

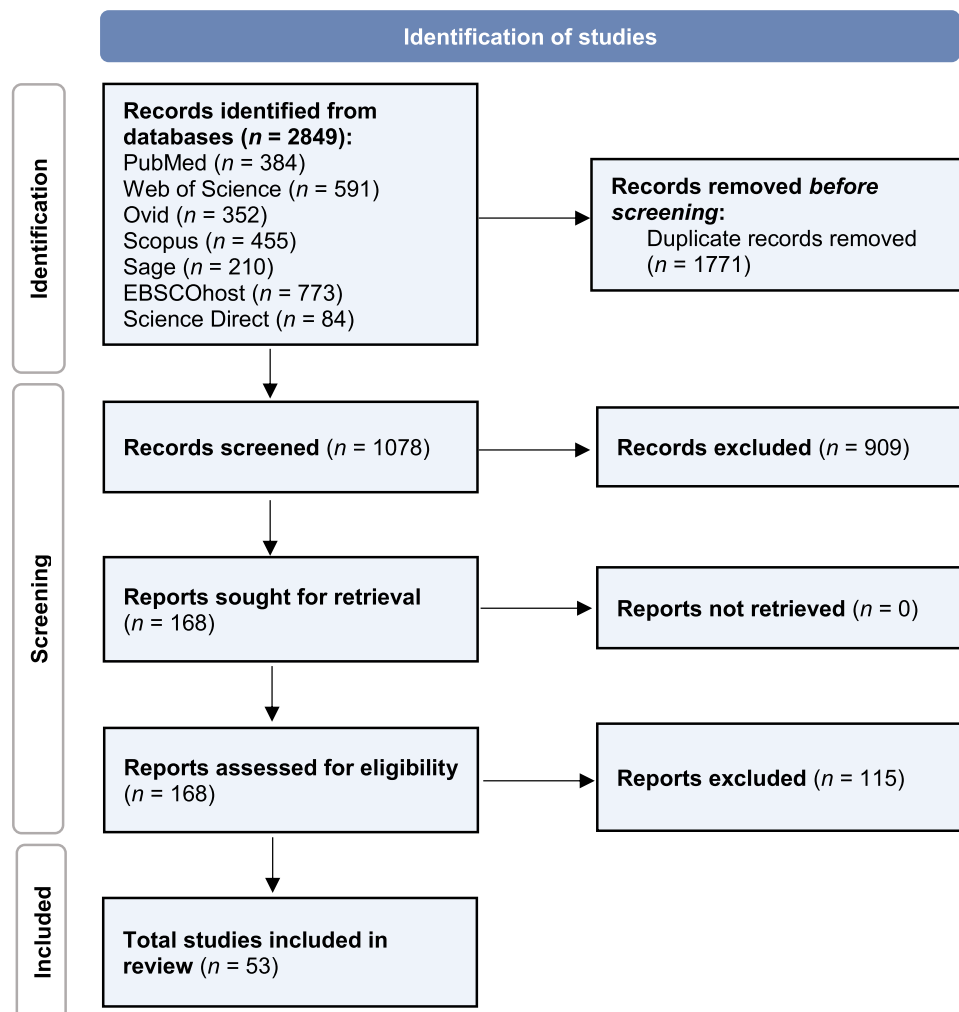


Fig. 1. Selection of sources of evidence (PRISMA flow diagram).

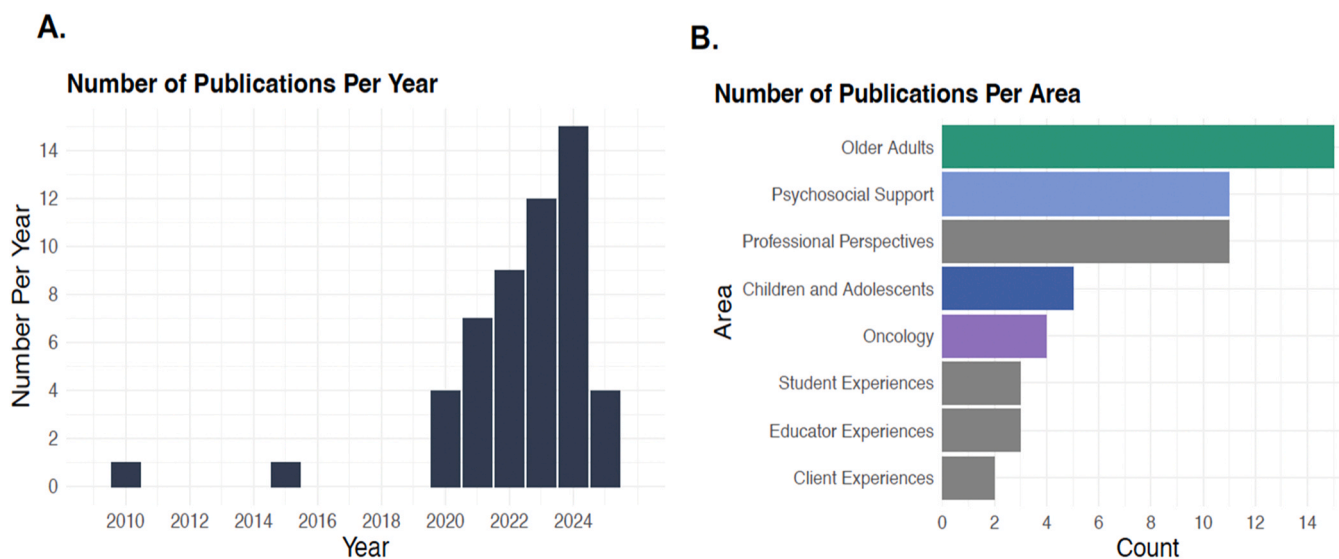


Fig. 2. Publications Included in the Scoping Review by Year (A) and by Research Area (B).

Interventions such as singing, songwriting, lyric analysis, music-assisted relaxation, and guided imagery have been shown to enhance mood, reduce apathy, and promote engagement (Mercadal-Brotons et al., 2023; Pearson et al., 2023). In studies involving individuals with Parkinson's disease (PD), group-based TMT programs like "ParkinSong" and therapeutic singing interventions yielded high levels of participation, emotional expression, and voice awareness (Tamplin et al., 2024), though two studies reported limited physical vocal improvements (Stegemöller et al., 2020; Tamplin et al., 2024). Similarly, Belgrave et al. (2023) found that cognitively healthy older adults engaged deeply with prerecorded, culturally tailored music therapy content, experiencing improvements in emotional well-being and quality of life. These findings underscore music therapy's potential to provide meaningful, non-pharmacological support for mental and emotional health in aging populations, even when delivered remotely.

A central recurring pattern across multiple studies was the vital role of caregivers in facilitating TMT and the capacity of music therapy to restore intimacy and connection within caregiving relationships. Clark et al. (2024), Dassa (2023), and Kelly et al. (2024) documented how TMT sessions allowed couples impacted by dementia to rediscover shared identity and emotional closeness through familiar songs, collaborative songwriting, and personalized playlists. These interventions offered moments of reprieve from the caregiver-care recipient dynamic, allowing couples to reengage as partners. Specific to caregiver wellbeing, Brault and Vaillancourt (2022) found TMT offered a welcoming nonjudgmental space that fostered reconnection with music, arousal and mood regulation for five informal female caregivers. Clark et al. (2024) further demonstrated that creative processes fostered relational depth and personal validation for both people with dementia and their care partners. In broader familial contexts, Gvili and Bodner (2024) adapted their intergenerational music therapy group to a virtual format facilitated on Zoom, showing how collaborative music-making between grandparents and grandchildren reinforced emotional bonds and improved intergenerational understanding during pandemic isolation.

Despite initial skepticism about digital delivery for older populations, a growing body of evidence confirms the feasibility and accessibility of TMT when adequate support is in place. Pearson et al. (2023) reported high session satisfaction among older adults using a Virtual Music Therapy (VMT) kit, which was designed to support participant engagement though technical issues occasionally affected perceived quality. The kit contained instructions on technology, percussion instruments, paper etc. Similarly, studies by Dassa et al. (2021)

and Wilhelm and Wilhelm (2022) acknowledged challenges such as reduced session duration, latency, and the need for support to assist older adults during sessions. Yet many therapists viewed TMT as a flexible and efficient alternative worth continuing beyond the pandemic. Mercadal-Brotons et al. (2023) and Haddad et al. (2024) found that individualized, virtual interventions supported by volunteers and structured resources like curated playlists—were both accessible and beneficial for participants, even among those with limited digital literacy. The accessibility of TMT has proven especially valuable for reaching rural, isolated, or homebound populations, offering consistent therapeutic engagement despite geographic or public health restrictions (Belgrave et al., 2023; Dassa, 2023; Dassa et al., 2021; Haddad et al., 2024; Mercadal-Brotons et al., 2023; Pearson et al., 2023; Stegemöller et al., 2020; Wilhelm & Wilhelm, 2022).

Although TMT has shown promise for older adult populations, several studies have identified limitations that warrant further investigation and innovation. Thompson et al. (2023) found that while online sessions reduced behavioral disturbances in dementia patients compared to no therapy, in-person sessions were significantly more effective while Dassa et al. (2021) acknowledge potential challenges in building the therapeutic relationship as well as disorientation, difficulty following gestures, vision loss or neglect.

Oncology

Four studies explored TMT in an oncology setting (Folsom et al., 2021; Knoerl et al., 2023; Phillips et al., 2023; Rabinowitch et al., 2023). Recent studies exploring TMT for adult oncology patients reveal promising outcomes, particularly in reducing anxiety and pain. Rabinowitch et al. (2023) found that their "Balance-Space" intervention—combining original music listening with guided discussion—led to significantly greater reductions in pain than a meditation-based control, highlighting the potential of music-based modalities in symptom management. Similarly, Knoerl et al. (2023) demonstrated that young adults (ages 18–39) with higher baseline anxiety and physical functioning experienced the greatest reductions in anxiety following an online mindfulness-based music therapy program which ranged from one to four (45 min) individual sessions over 12 weeks. Phillips et al. (2023) reinforced these findings in their study of 31 cancer patients, reporting that participants who received TMT sessions experienced greater reductions in anxiety than those treated in-person. Notably, individuals with higher fatigue, sleep disturbances, or anxiety at baseline benefited most, particularly females. Additionally, Folsom et al. (2021) documented the successful transition of an integrative oncology music

therapy program to a virtual format during the COVID-19 pandemic, affirming the feasibility of various TMT interventions such as music listening, singing, and guided relaxation. Across studies, TMT emerged as a flexible, accessible, and effective modality for psychological support in oncology care, although further research is needed to optimize delivery and personalize interventions based on client preferences, types and stages of cancer, and context in where TMT is being received.

Psychosocial support

Telehealth music therapy (TMT) has been implemented across diverse groups, including veterans, adults in substance abuse recovery, healthy adults, and caregivers, showing strong feasibility, high acceptability, and emotional and interpersonal benefits. However, clinical outcomes vary, and technology challenges persist. For example, a retrospective case study (Lightstone et al., 2015) with a veteran in his fifties experiencing PTSD, and other mental health needs, found that music improvisation enhanced emotional expression and regulation, breakthroughs not achieved in eight years of prior psychotherapy. Story et al. (2024) provided the Telehealth Engaged Music Imagery for Pain Outcomes (TEMPO) program in four individualized Guided Imagery and Music (GIM) sessions to eight veterans with chronic pain. Retention was 75 % ($n = 6$). Participants valued social connection and intentional music listening, though audio quality and internet issues were common. While some reported pain, anxiety, or depression reductions, others saw no change or worsening symptoms. Subjective pain relief often differed from self-reported scores. During COVID-19, Zeiser (2023) provided telehealth music interventions including music-assisted relaxation, reminiscence, lyric analysis, and movement to 39 veterans, 27 staff and three family members in palliative care. Acceptability was high, with reported emotional benefits and improved therapy compliance. Recommendations included access to better technology, considering scheduling difficulties, and including pre-session preference assessments.

In a community context, Schoonover et al. (2023) piloted an eight-week virtual group MT program for individuals recovering from substance use disorder (SUD). Eleven participants consented, but attrition left six, with only three completing all sessions. Challenges included internet access, technology literacy, and scheduling conflicts. Preferences regarding virtual versus in-person formats were mixed; however, participants reported high satisfaction, reduced cravings, greater calm, and valued music-making and community-building.

Two studies explored client experiences of TMT. Honig and Hannibal's (2022) interview study with 2 adult female clients' experiences of transitioning from in-person to online GIM therapy for depression reported that online GIM was beneficial but perceived as less powerful than face-to-face sessions. While the therapeutic relationship remained strong, initial online sessions felt less personal, and environmental factors, such as home and virtual settings, influenced experiences. Finally, practical issues like scheduling outweighed telehealth-specific concerns; however, internet disruptions during music and imagery phases posed significant risks given the client may be in an altered state of consciousness.

Regarding stress in non-clinical populations, Dungsirisangthong et al. (2025) delivered six weekly one-hour TMT sessions including relaxation, mindful listening, songwriting, movement, improvisation, and singing, plus 15 min of daily self-guided practice to 13 hotel managers. Perceived stress significantly decreased, and participants reported improved coping, emotional expression, relaxation, family bonds, and integration of music into daily life. Finnerty et al. (2023) also addressed stress reduction by comparing active MT, receptive MT, verbal therapy, and a control group in an RCT with 84 undergraduates. All therapy groups showed significant within-session stress reductions, and only the control group showed increased hair cortisol, suggesting MT's effectiveness as a stress-reduction strategy.

Twelve adult inpatient participants engaged in a two-phase, iterative study using questionnaires and post-session interviews, with Phase 1

addressing latency issues and evaluating online group singing platforms ($n = 6$), and Phase 2 developing and trialing a custom virtual reality (VR) application for group singing ($n = 6$) (Tamplin et al., 2020). Thematic analysis revealed five themes, highlighting VR as a positive, immersive, and transformative experience that reduced singing inhibitions but also attenuated some social cues for example interpreting facial expressions as a means of communication and emotional connection when singing with others. Overall, online music therapy with VR was found to be usable, acceptable, and psychosocially beneficial, meriting further research.

For caregivers, telehealth MT approaches demonstrate well-being benefits. Giordano et al. (2020) provided four weeks of a receptive MT intervention supplemented with GIM to 34 emergency clinical staff during COVID-19. After a therapist-selected playlist in week one, personalized playlists enhanced relaxation. Tiredness, sadness, fear, and worry significantly decreased, especially with customized playlists. Psaltopoulou-Kamini and Nikolaidou (2024) tested a 12-week remote Synthetic MT group for clients with psychotic disorders and hospital staff, reporting improved relationships, reduced stigma, and appreciation of creative freedom. The authors define Synthetic MT as a combination of humanistic and psychodynamic approaches, with choices of music listening, playing pre-composed songs, lyric analysis, clinical improvisation, and verbal processing. Kim et al. (2024) provided a five-week Supportive Music and Imagery program for ICU nurses, showing significant decreases in stress, psychological distress, and tension, plus increased energy after sessions. Sleep and mood showed no significant overall changes. Finally, Steiner-Brett et al. (2025) piloted the single-session "Listen, Breathe, Move" program with music-assisted breathing, movement, and mindfulness for informal caregivers. Fourteen participants showed significant improvements in well-being, caregiving satisfaction, community connection, and intentions to reuse techniques.

Children and adolescents

Five studies reported on TMT for children and adolescents (Ahessy, 2023; Baker & Krout, 2009; Bompard et al., 2023; Goicoechea & Lahue, 2021; Richard Williams et al., 2024a). Conditions and diagnoses included visual impairments (Ahessy, 2023), autism (Baker & Krout, 2009; Richard Williams et al., 2024a), developmental delays (Bompard et al., 2023), and paediatric dialysis, cardiology and sibling grief work (Goicoechea & Lahue, 2021). Music therapy interventions used included songwriting (Ahessy, 2023; Baker & Krout, 2009), neurologic music therapy interventions such as therapeutic instrumental music performance (TIMP), patterned sensory enhancement (PSE), and rhythmic auditory stimulation (RAS) (Richard Williams et al., 2024a) and movement, song singing and music assisted relaxation (Ahessy, 2023).

Recent research highlights the adaptability and effectiveness of TMT and home-based music therapy interventions for children with developmental, neurological, and sensory impairments. Ahessy (2023) implemented a six-week TMT program for children with congenital visual impairments, reporting increased child engagement, improved parent-child interaction, and enhanced emotional and social outcomes. Similarly, Bompard et al. (2023) utilized the Euterpe method—an at-home music therapy intervention involving audio and video recordings—for children with developmental delays, which led to improvements in sleep quality and reductions in parental stress. The importance of remote delivery methods was further emphasized by Baker and Krout (2009), who found that songwriting sessions delivered via Skype were as effective as in-person sessions for a participant with Asperger's, with increased engagement observed during TMT sessions. Goicoechea and Lahue (2021) also documented the benefits of TMT, despite challenges such as latency and connectivity issues; adaptations such as structured turn-taking, musical flexibility, and use of asynchronous materials supported client participation and extended therapeutic impact.

Supporting these findings, Richard Williams et al. (2024a) demonstrated that neurologic music therapy (NMT) sessions delivered to

children with autism led to improvements in motor function and engagement, particularly among older children and those with fewer sensory sensitivities, while also reinforcing the crucial role of caregiver involvement—an outcome echoed in [Ahessy \(2023\)](#) and [Bompard et al. \(2023\)](#). Collectively, these studies underscore the efficacy of TMT across diverse paediatric populations, and highlight the significance of personalized, structured, and flexible interventions that support both client and caregiver engagement.

Student, educator, and practitioner perspectives of TMT

Student perspectives

Three studies explored student experiences of TMT through both music therapy training, and the process of administering TMT sessions. [Kern and Tague's \(2022\)](#) online questionnaire with 230 undergraduate and graduate music therapy students during the COVID-19 pandemic indicated that synchronous lectures and video conference platforms became the most commonly used modality, with live video lectures, screen shares, and breakout rooms reported to be the most engaging. Benefits included increased safety during COVID-19, no travel or carrying instruments, and being more comfortable at home while barriers were screen fatigue, physical isolation from peers, and poor internet connection.

[Krout et al. \(2010\)](#) reported similar technological barriers when analyzing the written reflections of four music therapy clinical students who participated in peer collaboration songwriting sessions both online and in person. Students reported internet connection and auditory delays which led to difficulties forming connections with their fellow students. Overall, however, results suggested no significant difference in the experience of songwriting in person compared to online, and students' reflections pointed to an overall positive and knowledge experience. Also lending support to the use of telehealth in music therapy academic settings were the results from [Lee et al. \(2024\)](#), who detailed five key themes that arose through interviews with practicum students who observed 8 recorded telehealth sessions. Themes included accessibility, usefulness, uniqueness, limitations, and potential, resulting in the authors supporting the use of telehealth practicums in conjunction with in-person experiences.

Educator perspectives

Three studies explored educator experiences of TMT. [Heiderscheid and Short \(2024\)](#)'s international music methods study indicated rapid adaptation of teaching strategies, curriculum adjustments, changes to assessment practices and compliance/approval workflows, and active sharing of resources within professional networks in response to the COVID-19 pandemic implications on music therapy teaching and learning delivery. With respect to TMT, educators had students engage in role play and also facilitated telehealth sessions the students observed. Continued evaluation of pedagogical outcomes and guidelines for hybrid methods is recommended.

Alternative online placement opportunities in music therapy education, were investigated in [Steele et al.'s \(2024\)](#) mixed-methods study exploring student and supervisor experiences to inform future pedagogical planning. Thematic analysis pointed to four pedagogical considerations to support online student learning: (1) respond to context with creativity and flexibility; (2) scaffold student learning; (3) foster peer relationships; and (4) supplement online learning with additional resources and support. [Gooding and Rushing \(2022\)](#) described key components for successful telehealth training for pre intern music therapy students which included: (1) situating telepractice within existing evidence and prior training to help students make conceptual links; (2) integrating technology training into curricula to prepare students for contemporary practice; (3) emphasizing communication skills to support virtual professional interactions; and (4) employing a developmental, scaffolded supervision framework that provides greater structure in telepractice than in-person placements. The authors

concluded that telehealth training can be effective when curricula, supervision, and assessment are adapted to address the distinct technological, communicative, and pedagogical demands of virtual clinical training.

Practitioner perspectives

Internationally, therapists made significant technological and methodological adjustments to deliver music therapy virtually during the COVID-19 pandemic ([Agres et al., 2021](#)). A large-scale survey surrounding pandemic implementation of TMT documented reduced client contact hours, job disruptions, and increased telehealth reliance, especially in US private practice ([Gaddy et al., 2020](#)). Despite stress and income threats, therapists reported maintaining professional hope and adapting to sustain care. An international survey of 572 therapists confirmed overall decline in clinical hours, both in-person and online ([Clements-Cortés et al., 2023](#)). Reported benefits included greater access and caregiver involvement, though many perceived TMT as less effective for live or recorded music than in-person sessions. Therapists proficient in telehealth tools were more likely to continue post-pandemic, particularly in private practice. A follow-up qualitative study indicates shifts from widespread, pandemic-driven adoption towards more selective, client-specific use, with growing emphasis on therapists' perceptions, training, and readiness as key determinants of effective TMT delivery. It also highlighted ongoing infrastructure challenges - particularly latency and connectivity issues - while pointing to emerging hardware- and software-based solutions as signs of evolving technological infrastructure needed to support future telehealth practice ([Clements-Cortés et al., 2025](#)).

Specific models, especially Neurologic Music Therapy (NMT), adapted effectively worldwide indicating all NMT therapeutic music experiences could be delivered virtually, though rhythmic auditory stimulation was less frequent. NMT's use was correlated with greater continuation of telehealth and fewer lost group sessions ([Cole et al., 2021](#)). Practitioners working with autistic clients reported smaller reductions in clinical hours, aided by structured protocols included in a neurologic music therapy framework specifically patterned sensory enhancement (PSE), therapeutic music instrument playing (TIMP), and rhythmic auditory stimulation (RAS) and transformation design approaches ([Richard Williams et al., 2024b](#)). Another study identified facilitations and barriers to autistic clients' telehealth engagement, resulting in a screening tool for clinical decision-making ([Richard Williams et al., 2022](#)).

Other condition-focused studies demonstrate telehealth's adaptability. For pain-related care, technology functioned not only as a delivery medium but as an active therapeutic agent enhancing agency and intimacy ([Cephas et al., 2022](#)). Implementation efforts in the Czech Republic showed structured training and support increased uptake, though confidence, resources, and demand limited sustainability ([Kantor et al., 2023](#)). Non-technical issues such as copyright concerns also constrained practice choices ([Reid & Kresovich, 2021](#)).

Finally, narrative accounts of a music therapist's experience of facilitating TMT captured evolving relational dynamics in synchronous and asynchronous sessions with neurodivergent and autistic children, moving through phases of technological struggle, skill acquisition, and creative adaptation. These findings emphasize technology's dual role in enabling connection while constraining improvisation ([Devlin, 2022](#)).

Discussion

The COVID-19 pandemic catalyzed rapid, global implementation of TMT with a variety of individuals across the lifespan. Collectively, studies included in this review suggest that TMT is a viable service delivery method that fosters social connection and engagement, offering personalized support. TMT may not be the most effective choice in all circumstances. Success is dependent on several factors including access to appropriate technology and infrastructure, caregiver support, and

ensuring client safety which might be more challenging depending on the music therapy interventions (Honig & Hannibal, 2022). However, the need and desire for TMT with certain groups such as community dwelling older adults will likely increase in future years (Dassa et al., 2021; Haddad et al., 2024), especially with technological improvements enhancing the music provision.

Research and professional practice on TMT across clinical settings

The majority of the research and descriptive articles reported in this scoping review focused on older adults often with dementia or Parkinson's as well as caregivers. Other notable populations were veterans, children with neurodevelopmental differences and persons diagnosed with cancer. Across populations there were multiple beneficial outcomes including reduced pain and anxiety, enhanced mood and sleep quality, increased engagement, quality of life, emotional wellbeing, reductions in stress, improvement in motor function and improved relationships, intimacy and connection with caregivers.

With respect to children and adolescents, TMT showed promise although its success was closely linked to therapist adaptability and environmental support. Initial technical difficulties often gave way to creative adaptations, yet limitations in spontaneity and sensory interaction persisted. Studies with adults suggest that TMT may serve as an important supplement rather than a full replacement for live, in-person interventions. Across all studies, technical barriers—such as video conferencing difficulties, unstable internet access, and discomfort with digital platforms—were common (Mercadal-Brotons et al., 2023; Wilhelm & Wilhelm, 2022). Moreover, while participants often thrived during guided sessions, maintaining musical engagement independently remained challenging (Dassa, 2023). Together, these findings highlight the importance of caregiver involvement, follow-up support, and possibly hybrid approaches that combine live virtual engagement with asynchronous tools or occasional in-person visits.

Overall, successful TMT implementation was afforded by providing personalized, structured yet flexible environments (i.e., participant's preferred music and resources), supportive supervision (i.e., approaches that met students at their developmental level), by making adaptations, and by engaging in turn taking when making music. While benefits are evident, it is important to highlight that most of these studies were feasibility or limited efficacy pilot studies. Challenges such as technological barriers, retention, and variability in clinical outcomes underscore the need for tailored delivery and robust infrastructure.

Student, educator and practitioner perspectives of TMT delivery and practice

Telehealth generated new uses of technology in music therapy practice, ranging from video conferencing to virtual reality (Tamplin et al., 2020). While these tools enhanced access and creativity, they also introduced challenges—such as latency, sound quality, and digital fatigue. Some studies identified technology as an active agent in enhancing therapeutic presence and client agency (Cephas et al., 2022), while others highlighted the constraining effects of technical delays on musical interaction and improvisation (Devlin, 2022). The growing emphasis on hybrid delivery methods and continued innovation suggests that TMT will remain integral to the evolving music therapy landscape.

Across professional prospective studies, several categories emerge: (1) Adaptability and resilience—therapists worldwide found ways to preserve therapeutic rapport and continuity of care despite logistic and emotional strain (Agres et al., 2021; Devlin, 2022; Gaddy et al., 2020); (2) Structured models aid transition—frameworks like NMT and deliberate implementation strategies enhanced confidence and session retention (Cole et al., 2021; Kantor et al., 2023; Richard Williams et al., 2024b); (3) Caregiver involvement—telehealth often increased caregiver participation, with positive effects on engagement

(Clements-Cortés et al., 2023; Cole et al., 2021; Richard Williams et al., 2022). (4) Barriers remain—technology limitations, training needs, legal uncertainties, resource gaps, and fluctuating demand challenge sustainability (Agres et al., 2021; Clements-Cortés et al., 2023; Cole et al., 2021; Kantor et al., 2023; Reid & Kresovich, 2021); (5) Potential for hybrid features (Clements-Cortés et al., 2023; Cole et al., 2021; Richard Williams et al., 2022); and (6) Positive attitudes when coupled with skills and supportive systems and increased likelihood of continuing telehealth services beyond the pandemic (Clements-Cortés et al., 2023; Clements-Cortés et al., 2025; Cole et al., 2021).

Limitations

Despite valuable insights, several methodological limitations were noted across the reviewed articles which should be considered when interpreting the findings. Many studies relied on small sample sizes, often with limited demographic diversity (e.g., Honig & Hannibal, 2022; Krout et al., 2010) and were primarily qualitative, observational or case study designs. Many interventions were brief or exploratory, often limited to weeks or a few sessions, with limited long-term follow-up. This restricts understanding of sustained outcomes, durability of therapeutic relationships, and long-term feasibility. Our recommendations for future research address these limitations.

Recommendations for future research

This scoping review demonstrates the breadth, feasibility and emerging effectiveness of telehealth music therapy (TMT) across clinical, educational, and professional contexts. It also serves as a roadmap that pinpoints crucial priorities for future TMT research, paving the way towards an evidence-based, equitable, and digitally integrated music therapy practice. The following section presents a series of recommendations outlining key priority areas for future research in TMT.

Comparing effectiveness of TMT, in-person, and hybrid delivery models

A recurring finding across populations – particularly among older adults, oncology patients, and individuals with dementia – was that TMT is often perceived as beneficial yet less effective than in-person music therapy for certain outcomes (Dassa et al., 2021; Honig & Hannibal, 2022; Thompson et al., 2023). Future studies should prioritize comparative research designs that examine TMT, in-person, and hybrid delivery methods. Hybrid approaches, combining synchronous telehealth sessions with asynchronous tools or periodic in-person contact, warrant systematic evaluation given their promise for addressing engagement, spontaneity, and therapeutic depth (Clements-Cortés et al., 2023; Cole et al., 2021).

Mechanisms of action and differential outcomes

Although reductions in anxiety, pain, stress, and improvements in mood and engagement were frequently reported, few studies examined *how* or *for whom* TMT is most effective. Future research should investigate mechanisms of change, including the role of caregiver involvement, technology-mediated intimacy, personalization of music selection, and therapist-guided structure (Cephas et al., 2022; Clark et al., 2024; Dassa, 2023). Stratified analyses based on baseline symptom severity, cognitive status, age, gender, and digital literacy particularly evident in oncology and caregiver studies, could clarify differential responses to TMT (Knoerl et al., 2023; Phillips et al., 2023).

Long-term outcomes and sustainability

Most reviewed studies were short-term, feasibility-focused, or crisis-driven (e.g., pandemic-related). Longitudinal research is needed to evaluate durability of outcomes, maintenance of therapeutic relationships, and sustained engagement over time, especially for chronic conditions such as dementia, Parkinson's disease, autism, and caregiver stress (Mercadal-Brotons et al., 2023; Richard Williams et al., 2024a;

Steiner-Brett et al., 2025). Examining long-term adoption of TMT in routine care would determine the viability of positioning it as a core, rather than supplemental, service delivery method.

Cultural responsiveness and equity of access

Despite the global uptake of TMT, the results of this scoping review indicate that limited attention has been given to cultural, linguistic, and socioeconomic factors shaping access and engagement. Future research should explore culturally responsive TMT models, including the use of culturally tailored music, multilingual delivery, and community-based participatory approaches (Belgrave et al., 2023; Haddad et al., 2024). Research addressing digital inequities – such as access to reliable internet, devices, and technical support – is particularly important for rural, marginalized, and low-resource populations.

Rigorous experimental and quasi-experimental designs

The predominance of qualitative, case-based, and pilot studies reveals the need for more rigorous research designs. Randomized controlled trials (RCTs), while challenging to set up, are recommended to compare TMT with in-person music therapy and non-music control conditions, particularly in high-impact areas such as pain and anxiety management, as well as neurorehabilitation. Where RCTs are not feasible, well-designed single-case experimental designs (SCEDs), stepped-wedge trials, or matched cohort studies could offer strong internal validity while remaining pragmatic for clinical settings.

Standardized outcome measures with mixed-methods integration

Future studies could incorporate standardized outcome measures alongside qualitative data to capture both clinical change and lived experience. The discrepancies observed between subjective reports and quantitative pain or stress measures (Story et al., 2024) underscore the importance of mixed-methods approaches. Incorporating video-based observational analysis may further elucidate relational, musical, and nonverbal processes unique to telehealth contexts.

Technology-focused process evaluation

Given the central role of technology in shaping therapeutic processes within TMT, future research should include systematic reporting of technological variables such as platform type, latency management strategies, audio quality, use of technical support models and other peripherals. Studies exploring emerging technologies – such as virtual reality and asynchronous digital tools – should assess not only acceptability but also their impact on musical interaction, embodiment, and social presence (Devlin, 2022; Tamplin et al., 2020;).

Educational and workforce development research

The growing integration of TMT into training programs highlights the need for empirical evaluation of pedagogical models, supervision frameworks, and competency development in telepractice (Gooding & Rushing, 2022; Steele et al., 2024). Longitudinal studies examining how telehealth training influences early-career practice patterns, professional identity, and workforce sustainability would support evidence-informed curriculum development. Addressing these research directions will not only strengthen the scientific foundation of TMT but also enhance its clinical relevance, policy impact, and integration within digital health systems worldwide.

Conclusion

This scoping review systematically mapped and synthesized the existing literature concerning research and professional practices related to TMT, with particular attention to telehealth delivery and practice. It also examined the documented experiences and perspectives of clients, students, educators and practitioners across diverse populations and practice contexts. Furthermore, the review aimed to identify existing gaps in the literature, inconsistencies in practice, and areas

of potential development with the aim of providing a robust foundation for future empirical inquiry while contributing to the advancement of evidence-based practice in TMT.

The emerging consensus is that TMT – when backed by structural models, adequate resources, and thoughtful client selection – can be a viable complement to in-person therapy, shaping a more flexible, hybrid future for the field. By articulating clear research priorities and methodological strategies grounded in the findings of this review, future research investigations can move beyond feasibility studies toward establishing TMT as an evidence-based, equitable, and sustainable component of music therapy practice. By charting the evolution of the field and highlighting key challenges and innovations, this study offers valuable insights for researchers, clinicians, educators, and policy-makers seeking to understand and enhance the role of music therapy in digital health contexts.

CRedit authorship contribution statement

Eunyoung Han: Conceptualization. **Eugenia Hernandez-Ruiz:** Writing – review & editing, Writing – original draft, Formal analysis. **Lisa Kelly:** Writing – review & editing, Writing – original draft, Software, Methodology, Formal analysis, Conceptualization. **Clements-Cortés Amy A.:** Writing – review & editing, Writing – original draft, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Marija Pranjić:** Writing – review & editing, Writing – original draft, Software, Methodology, Investigation, Formal analysis, Data curation. **Indra Selvarajah:** Writing – review & editing, Writing – original draft, Formal analysis. **Natasha Wandel:** Writing – review & editing, Writing – original draft, Formal analysis. **Melissa Brotons:** Writing – review & editing, Writing – original draft, Formal analysis.

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Appendix A. Supporting information

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Data availability

No data was used for the research described in the article.

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