Review

Music and dementia care: Future directions for research and innovation

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Abstract

Background: Cognitive decline and dementia can have a major impact on individuals, families, societies and economies. While there are currently no cures for Alzheimer's disease and related dementias, and available treatments only modestly slow early progression, there is enormous scope to improve cognitive health and support individuals emotionally and psychologically as they age. By developing and implementing research-informed, music-based approaches in dementia care, quality of life could be significantly improved for those living with dementia and their families.

Objective: An early-stage visioning project brought together an interdisciplinary research team from across Canada, Scotland and England to discuss music-based interventions (MBIs) as scalable, real-world solutions that can have a positive impact on the health and well-being of older people. The focus of the discussion was future research directions.

Methods: A community of practice was formed to map out directions for future research and innovation in the continued advancement of MBIs in dementia care.

Results: Six emerging research themes were identified: (1) music, mind and body; (2) social isolation and connection; (3) music technologies; (4) creativity, cultural rights and participation; (5) involving people living with dementia in the research process; and (6) real world implementation and sustainability.

Conclusions: MBIs are a beneficial application in dementia care, but ensuring quality, access and long-term sustainability remain a challenge. More fundamentally, music should be seen as part of the human experience, and engagement in music and other arts-based activities should be considered a cultural right during aging.

Keywords

Alzheimer's disease, caregivers, dementia, music, music-based interventions

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Introduction

The global rise in dementia is having a major impact on individuals, families, societies and economies.[1] While there are currently no effective treatments or cures for Alzheimer's disease and related dementias, there is enormous scope to support individuals with non-pharmacological interventions, such as music and the creative arts, and to enhance quality of life for people living with dementia. With the right policies, services, technologies and changes in health-related behaviors, it should be possible to help people live healthier, active lives as they grow older, while potentially reducing demands on health and social care services—a "win-win" scenario. Research can play a pivotal role in shaping policy at both national and local levels by offering evidence-based insights that can guide strategic decision-making. However, to address the complex societal and health challenges posed by dementia, research institutions and policymakers increasingly emphasize the need for collaboration and interdisciplinary research to enhance dementia care.[2,3] The importance of interdisciplinary research and international collaboration has previously been highlighted in the broader context of "musical care", encompassing the variety of ways music can be used to support health and child development.[4] The current paper reports on an early-stage collaborative visioning project bringing together an international group of researchers from different disciplines, institutions and countries, to explore future research and innovation directions specifically in the area of music and dementia care.

Music has long been valued as a powerful way to affect the mind, and in recent years there has been an increasing awareness and interest in the role of music in the health and well-being of people living with dementia.[5–12] In particular, the retained musical memory of those with Alzheimer's disease has become a key point of interest.[13–15] Simultaneously, research into the musical brain has increased in the last few decades, with the development of new brain imaging technologies and the rapid expansion of the field of the cognitive neuroscience of music. Evidence of music-driven neuroplasticity and the extensive neural basis of musical listening have driven a renewed interest in the ways in which music can affect the mind and brain, including for older adults and those with dementia.[5,16,17] Music and other arts-based programs and therapeutic interventions are starting to be seen as scalable, real-world solutions that can have a positive impact on the well-being, health, cognition, and social participation of older people.[18–20]

Music can play a fundamental and multifaceted role in the daily lives of individuals living with dementia[21] and has long been employed in care settings to promote social interaction and enhance quality of life.[22–24] However, as Clements-Cortés notes, there remains "considerable confusion regarding the identification and terminology of musical experiences in healthcare settings" (p. 4).[25] When music experiences are situated within health-related contexts, they are often referred to as music-based interventions (MBIs).[26,27] Music therapy is a distinct type of MBI, distinguished by its provision by the professional training of the music therapist. "Music Therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program".[28] Contrastingly, MBIs not provided by a credentialed music therapist may be facilitated by a range of individuals, including nurses, personal support workers, recreation therapists, activity coordinators, caregivers, community or health musicians, and volunteers. Such interventions can vary widely depending on contextual factors such as setting, available resources, and the training and role of the individual delivering the music experience. Critically, the underlying intention and design of these interventions must be considered to ensure meaningful engagement. These crucial elements are sometimes overlooked, particularly where there is perhaps an assumption that all music experiences are inherently beneficial and of equal therapeutic value.[29,30]

In the UK, music therapy is an established psychological clinical intervention practiced with people living with dementia, with an estimated one-third of music therapists working in National Health Service (NHS) settings.[31,32] Furthermore the NHS includes music activities (e.g., Singing for the Brain and Playlist for Life) in their "Living with Dementia" guidance.[33] In Canada, in addition to the practice of music therapy for people living with dementia,[34] many private health and social care services and charities, (e.g., the Alzheimer Society), are highlighting music as a resource for people living with dementia.,[35–37] However, there is still work to be done on a policy level in both countries, as music therapy was only minimally noted as a promising (but under evidenced) non-pharmacological therapy in the Public Health Agency's of Canada's 2019 Dementia strategy, and Playlist for Life was the only music intervention mentioned in the Scottish Government's 2023 Dementia strategy.[38,39]

Project methodology

The aim of the current project was to explore fruitful and viable directions for research into MBIs to support the health and well-being of older adults, primarily in terms of care interventions for people living with dementia but also considering preventative approaches for healthy cognitive aging. To accomplish this, a small community of practice (CoP) was formed as a semi-formal way of bringing together individuals and organizations with a shared interest in music and dementia in a spirit of learning, knowledge sharing, and collaboration.[40] The CoP comprised an interdisciplinary group of researchers and clinicians from four universities (University of Edinburgh, Scotland; Lancaster

University, England; University of Toronto and Simon Fraser University, Canada), representing fields including music therapy, music psychology, music technology, gerontology, cognitive neuroscience, human-computer interaction, urban planning, and philosophy, with members ranging from postgraduate students to full professors. The Primary Investigators (PIs), faculty, and graduate students in the group had a strong track record of experience in the fields of music, music therapy, cognitive health, and dementia with extensive connections and partnerships with community-based organizations. A key aim of the initiative involved engaging partners in developing a research agenda that would address real-world challenges and opportunities while driving innovation.

The interdisciplinary nature of the collaboration allowed the team to explore the wide range of different perspectives and priorities for research. The CoP was established through a catalyst project (led by PIs Sixsmith and Clements-Cortés in Canada, and PI Overy in the UK) funded by a collaborative initiative by AGE-WELL and the University of Toronto in Canada and the Advanced Care Research Centre at the University of Edinburgh in the UK to foster new research alliances in the field of aging, with particular reference to care. Participation in the CoP was fluid and was initially established through existing networks of the PIs leading the project. As a catalyst project, the project was subject to oversight by the institutional ethics board at SFU but was not deemed to require ethical consent.

To facilitate collaboration, a series of online meetings, workshops, and offline working were convened to brainstorm, reflect, foster critical thinking and develop ideas for future research. This work began in November 2024, where the objectives and plans for the project were presented and discussed.

The CoP comprised regular monthly virtual PI meetings (3 attendees [PIs], Sept 2024-Oct 2025); quarterly/bimonthly virtual meetings (8–21 attendees, Sept 2024-Oct 2025); two in-person meetings in Edinburgh (7 and 10 attendees, Dec 2024 and April 2025); and one in-person international gathering and workshop in Edinburgh (36 attendees, April 2025). These meetings and workshops enabled dynamic knowledge exchange and cross-institutional conversations.

As part of the collaboration, CoP participants were invited to provide a biography/summary of their own research, plus a short text on what they felt were key areas for future research in music and dementia care (500 words in total). A total of 15 submissions were compiled into a single document for analysis (see Table 1 for details of those who contributed).

Researcher AS coded the submissions into meaningful chunks of information relating to the research aim and combined these into initial themes. These were written up for discussion, and researchers AS, KO, and ACC reviewed, discussed, and revised the themes in online meetings with all co-authors until a final set of themes were agreed. This process was not fixed but rather allowed for iterative discussion and refinement over CoP meetings.

The themes were presented and further discussed and validated at the in-person workshop held in Edinburgh in April 2025. The Edinburgh workshop included an afternoon "knowledge café" session which consisted of a presentation on the project and the key themes developed by the CoP to a wider audience of researchers and community stakeholders. Discussion groups on the themes were facilitated by CoP participants to capture feedback from the open discussion. Co-authors were then invited to refine the six themes for submission for publication, and as a final indicator of consensus. Three of the themes focus directly on key areas for future research—(1) music, mind and body; (2) social isolation and connection; and (3) music technologies—while the other three themes raise ethical issues and challenges and opportunities for innovation: (4) creativity, cultural rights and participation; (5) involving people living with dementia in the research process; and (6) real world implementation and sustainability. The themes are thus not mutually exclusive—they interact with and are informed by each other.

Themes

Key directions

Theme 1: Music, mind and body. As mentioned in the introduction, there is increasing understanding of the impact music can have on the mind and brain, including in older age. For example, a recent study with older adults (over age 50) showed increased functional connectivity between auditory and reward regions of the brain after an 8-week music-listening intervention.[41,42] Listening to the temporal structure of an underlying beat or pulse has been found to engage motor regions[43] and to facilitate so-called "perceptual entrainment", in which neural oscillations are synchronized with the timing patterns of the music.[44] Such entrainment is a potential foundation for neural auditory-motor coupling and may support the coordination of bodily rhythmic movements, such as clapping, tapping, or dancing in time to music.[45] In the context of music therapy, this rhythmic feature fosters a space where a person and their therapist can engage together with temporal alignment. Engaging in synchronized movement and experiencing entrainment with others has also been associated with positive social outcomes, including a heightened sense of togetherness[46] and reduced stress levels.[47]

Understanding the full potential sensory experience of MBIs also necessitates consideration of the environment in which these interventions occur.[48] In dementia care, the sensorial qualities of spaces, including auditory, visual, and tactile elements, can play a pivotal role in shaping care experiences,[49] all of which can work together with music to enhance therapeutic outcomes.[50] The

Table 1. Contributing community of practice participants.

CoP member	University	Discipline	Current Role/Position	Years of experience in relation to dementia	Country
Amy Clements-Cortés	University of Toronto	Music Therapy and Psychotherapy	Associate Professor	28	Canada
Andrew Sixsmith	Simon Fraser University	Gerontology	Professor	39	Canada
Katie Overy	University of Edinburgh	Music Psychology	Professor	12	Scotland
Anna Bryan	University of Edinburgh	Music and Social Care	PhD Student	7	Scotland
Sarah Faber	Simon Fraser University	Neuroscience	Postdoctoral Fellow	18	Canada
Lucy Forde	University of Edinburgh	Music Education and Community Music	PhD Student	20	Scotland
Deniz Hepdogan	University of Edinburgh	Psychology and Human-Computer Interaction	PhD Student	1	Scotland
(Melody) Zixuan Wang	University of Edinburgh	Design	PhD Student	1	Scotland
Mei Lan Fang	Simon Fraser University	Gerontology	Assistant Professor	5	Canada
Cosmin Munteanu	University of Waterloo	Human-Computer Interaction	Associate Professor/Schlegel Research Chair	27	Canada
Megan Polden	Lancaster University	Psychology and Applied Health	Research Fellow	8	England
Tom Mudd	University of Edinburgh	Music Technology	Associate Professor (Reader)	0	Scotland
Heather Wilkinson	University of Edinburgh	Social Sciences	Professor	30	Scotland
Anne Gallacher	University of Edinburgh	Musicology	MMus Student	13	Scotland
Eilidh Bowman	University of Edinburgh	Philosophy and Ethics	PhD Student	2	Scotland

consideration and integration of such factors can create a more comforting and healing environment, helping individuals better perceive and engage with their surroundings. For example, a research protocol for the "SOUND" music-based intervention has recently been developed which prioritizes a "homelike" environment; this includes welcoming soft light and low noise levels, to optimize concentration and cognition.[51]

These embodied, perceptual and environmental aspects of music interventions present several exciting avenues for further study, from a variety of perspectives. For example, as neuroscience researchers strive to better understand what complex brain dynamics can reveal about disease prognosis, response to treatment, and resilience, music is well-positioned to contextualize new findings about brain activity and organization with observable behavioral and environmental information. New paradigms combining brain, body, and environmental factors have already begun to map the interaction between brain dynamics and social interaction[52] and have leveraged advances in video analysis techniques to examine movement and interaction behaviors,[53] providing concrete next steps for investigation.

Theme 2: Social isolation and connection. Social isolation is a key issue impacting older adults,[54,55] especially for those with conditions resulting in increased isolation in the home.[56] Recent reviews have highlighted the harmful effects of social isolation for individuals with dementia and their caregivers[57–59]; however, there is no clear consensus on the effectiveness of existing interventions and how they might function.[24,60]

Memory for music capabilities appears to be preserved throughout Alzheimer's disease,[61] even in advanced stages,[13] and is therefore a uniquely powerful and accessible facilitator of social bonding between caregivers and those living with dementia[62–64] that does not rely on verbal language. In addition to its social benefits, it is evident in the literature that music supports cognitive and emotional health in people with dementia. A growing body of evidence suggests that engaging with music can enhance mood and emotional well-being[65] and aspects of cognition and executive functioning, including attention and working memory.[16,66] Research has demonstrated that musical activities stimulate widespread neural networks, including those associated with memory, emotion, and reward,[67–69] contributing to improved cognitive resilience and positive mental health outcomes. Importantly, improvements in cognitive and executive functioning may also enhance people's capacity to engage meaningfully in social interactions; as better attention, communication, and emotional regulation enable more reciprocal and sustained interpersonal interactions.[70] The potential of MBIs extends beyond social connectedness, offering a multidimensional approach to dementia care that supports both psychological and cognitive domains.

In considering the interactions between individuals with dementia and their caregivers, improving social interaction has been associated with positive outcomes in dementia care: both in promoting positive quality of life and reductions in agitation and other responsive behaviors for individuals with dementia,[71,72] and in promoting well-being in caregivers.[73] In a recent integrative review of singing interventions for family caregivers of people living with dementia,[73] caregivers' emotional and social well-being alongside their ability to cope and care for their loved one were improved by participation in singing and other MBIs.

Future research on social isolation and connection also needs to integrate more co-creative approaches, as working together has been shown to lead to positive outcomes such as a stronger sense of agency, equality and togetherness, both for people living with dementia and those around them.[74,75] Numerous studies have demonstrated that music can positively influence mood and emotional well-being in people living with dementia; however, there are some contradictory findings across the literature, creating some inconsistencies. This is likely due to variability in intervention type, duration, and individual responsiveness, as well as variation in dementia type and severity, which often leads to mixed results. Due to this, the area warrants further research on the specific conditions required for optimal benefits from MBIs as well as effective and robust ways to objectively measure outcomes. Future research should aim to clarify the mechanisms through which music modulates mood and emotional regulation, identify factors influencing individual differences in response, and determine optimal delivery methods to maximize benefits to people with dementia.

Theme 3: Music technologies. While the global population is aging, technology is also advancing rapidly. "AgeTech" is a term that refers to using everyday and emerging technologies in areas such as information and communication technologies; artificial intelligence; robotics; e-health; and mobile technologies to help older people stay healthy and active, increase safety and security, support independent living, and enhance social participation.[76] Recent years have seen increasing use of communications technologies among older adults, including adoption of music streaming technologies such as Spotify, YouTube, and Apple Music.[77] Further, the COVID-19 pandemic accelerated older adults' engagement with online music through synchronous engagement in online platforms, such as online choirs.[78]

Given music's range of benefits, there is increasing interest in technology to support its use in dementia care,[79] and recent reviews suggest that many older people living with dementia are capable of using technology to both access and create personally meaningful music.[80,81] Examples of technology-based programs for people living with dementia include "SingFit PRIME" (a technology platform that engages older people living with cognitive decline in social music groups)[82] and music therapy provided via

telehealth.[83] Music-based technologies may also support dementia caregiving; for example, Baker et al. found significant benefits from an app designed to support caregivers to use music strategically to better manage care using virtual training and "intuitive music technology".[84]

Future research on music technology in the context of dementia care can build on the expanded interest in technological support, leveraging the increasing adoption of streaming technologies, interactive large language models, and online collaborative platforms for social music-making among older adults. From a technology opportunity perspective, leveraging new platforms may provide avenues for augmenting the role of music in dementia care. For example, new technologies such as Virtual Reality have begun to be explored for therapy purposes (e.g., pain or palliative care).[85] A major limitation in the AgeTech field is that technologies are often designed and implemented by individuals with little or no direct experience of the real-world challenges faced by older people, particularly those with dementia.[86] This limitation can be addressed through the involvement of older adults in conceptualizing and designing new technologies and particularly new user interfaces, from early-stage visualization through to commercialization and implementation.[87] One such example of this is the Simple Music Player, trialed in various settings and commercially available, that was iteratively designed for older people living with dementia to enable easy access to personally meaningful music.[88]

Ethical issues, challenges, opportunities

Theme 4: Creativity, cultural rights and participation. Within applied research in the disciplines of gerontology and medicine, there has been an emphasis on creating solutions to solve the "problems" of older adults and the challenge that global aging presents to societies and economies. As Eastman notes, this is a form of ageism: "…the belief that older adults are needy and deserve special policies to help them has led to the commodification and 'othering' of older adults and responses which can re-enforce paternalistic and patronizing social care services".[89] While the dominant narrative around MBIs focuses on the therapeutic role of music and the potential of MBIs to support the behavioral and psychological symptoms of dementia, along with general well-being, there is a need to develop an agenda based around the rights of people living with dementia. This rights-based perspective argues that we must shift away from pathologizing the use of music in dementia care and instead focus on its potential to meet psychological and social needs and develop ethical frameworks for supporting people living with dementia to participate in music.

One approach that could potentially bridge the current gap between the healthcare system and the social agenda for people living with dementia is social prescribing. Social prescribing is a pathway for healthcare professionals to refer persons to third sector organizations for non-medical services to improve physical, mental, and social well-being.[90] Social prescribing includes a wide range of activities such as peer-support and social groups, exercise classes, nature-based interventions, art, music, and theatre performance. There is a growing body of evidence showing the benefits of social prescribing on health and well-being, as well as potentially reducing demand on care services.[91] The UK has been at the forefront of social prescribing, which forms an integral part of the National Health Service's (NHS) health prevention program.[92] Luminate, Scotland's creative aging organization, works with a range of providers of social care and other community-based support, such as Age Scotland and Alzheimer Scotland. Luminate's growing network of dementia "Meeting Centres" across Scotland works to ensure that people living with dementia continue to be able to access personally relevant creative opportunities and find new opportunities for self-expression and social connectedness through the arts. While established in the UK, social prescribing is just starting to gain traction internationally.[93] It should be noted though, that rapid growth of social prescribing without appropriate funding can undervalue community interventions and lead to unsustainable reliance on charities and volunteers - something to be considered in future research.[94]

Theme 5: Involving people living with dementia in the research process. Individuals living with dementia are often excluded from the research design processes that are intended to directly affect them. Yet, their involvement is crucial—not only to ensure research aligns with their lived experiences, but also to enhance their sense of agency and personhood.[95,96] Despite this, many studies tend to rely primarily on proxies—such as family members or professional carers—to speak on behalf of people living with dementia.[97,98] Co-design offers a promising approach by directly involving people living with dementia in shaping research processes. When grounded in respect, flexibility, and relational safety, co-design approaches can lead to more inclusive and context-sensitive outcomes, ensuring that solutions genuinely reflect the needs and preferences of those most affected.[99,100]

However, meaningful collaboration faces several barriers. Academic structures can make meaningful collaboration difficult due to logistical challenges, jargon in research literature, and traditional biases towards positivist research and replicable findings, all of which can marginalize participatory research and exclude the voices of people living with dementia.[97] Overcoming these barriers requires significant time and resource investment,[101] along with participatory methods tailored to individuals' cognitive and psychological needs.[102] Practical strategies include early role planning, accessible communication, and dementia-

friendly environments—such as familiar settings, flexible scheduling, and travel support. Effective engagement also depends on trust and shared understanding, with researchers adapting tasks to suit co-researchers' abilities and evolving needs.

Theme 6: Real world implementation and sustainability. Given the well-established benefits of MBIs for individuals living with dementia, it is important to ensure these services are not only accessible and widely implemented but also sustainable. Providing ongoing, affordable, and accessible post-diagnostic support for those with dementia remains a significant global challenge,[103] and ensuring the longevity and effectiveness of MBIs in both community and residential care settings can be difficult. A key barrier is overcoming the widespread prioritization of physical care, particularly in culturally western environments,[104] over a more holistic approach. Not only does it make ascertaining buy-in from care settings more difficult, but funding at both large and small-scale tends to overlook non-pharmacological approaches that support emotional and psychological well-being.

In care homes and day centers, workforce training and staff retention pose additional challenges.[105] High-quality music-based support relies on staff who are not only trained in the therapeutic application of music but also possess a good understanding of the specific needs of people living with dementia and delivery of person-centered care.[106–108] However, the training required can be resource-intensive, both in terms of time and cost, especially in a sector where high staff turnover is common. Additionally, staffing shortages, time pressures, and a lack of confidence among care staff can make it difficult to consistently deliver these interventions.[109] While bringing in external facilitators is one option, securing additional funding or grants is often necessary. As the cognitive capacity of those living with dementia can change significantly over time, MBIs must be adaptable to these changes to be successful.[107] Achieving this will be reliant on either training staff to adapt these interventions or by creating resources that include different pre-determined options for engagement. Volunteers can also be a valuable low-cost resource, but they must be trained to support those living with behavioral and psychological symptoms of dementia. Even with a well-planned intervention, it is vital that the intervention be tailored to the context as closely as possible, with a deep understanding of the capacities, preferences and needs of the participants. This may require adapting to the abilities that those in the setting already possess and providing ongoing support as needed.[110]

Discussion

This paper presents a process of team reflection as part of an early-stage visioning project that aimed to identify key priorities and future research directions in the field of music and dementia. The project successfully fostered interdisciplinary interaction and shared learning across disciplines, countries, and career stages. The CoP reached a consensus on future research directions and generated ideas that extended well beyond the project's original scope, by challenging prevailing ideas and assumptions amongst all involved.

The authors recognize some of the limitations of the project. The CoP was drawn from researchers based in institutions in Canada, Scotland, and England. Whilst our members came from various national and cultural backgrounds, we fully acknowledge that the project may primarily reflect a UK/North American perspective. The CoP could also have included people with lived experience and community organizations earlier, although our wider participatory workshop in Edinburgh did enable participation and feedback, including strong support and validation for the ideas that were being developed.

The CoP began to critically evaluate some of the underlying ideas behind the initial rationale for the project, particularly the use of the MBI terminology, and started to frame ideas in terms of "compassionate ageism" to go beyond seeing music only in terms of "therapy". Music should be seen as part of the human experience, and engagement in music and other arts-based activities should be part of a person's cultural rights. Research design and investigation in dementia care have typically followed a top-down approach, which conceptualizes MBIs primarily as therapeutic tools and often neglects the importance of adopting an intersectional perspective on aging. In contrast, individuals living with dementia may wish to primarily engage with music on their own terms, perhaps as part of their daily experience, or in celebration of special occasions—perhaps seeking routine, social connection, creative expression, and personally meaningful or pleasurable experiences outside of therapeutic goals.[24,111,112]

While MBIs in dementia care appear to be beneficial, the how and why of their efficacy remains obscured at times by shortfalls in methodological rigor.[24] Both quantitative and qualitative studies can address these questions, and as noted above, we suggest that researchers using both approaches should incorporate input from those with lived experience of dementia in their research designs to stay relevant to the research priorities of those whose lives we are hoping to positively impact. However, capturing and measuring engagement with and impact of MBIs for people living with dementia presents significant challenges, especially for those in the advanced stages of dementia. Assessment methods often rely on verbal communication or retrospective reflection, which is not always feasible for people living with advanced cognitive impairments. Innovative technological approaches, such as eye tracking, skin conductance, heart rate monitoring, portable MRI, and movement sensors could offer valuable insights into engagement and emotional arousal and a more

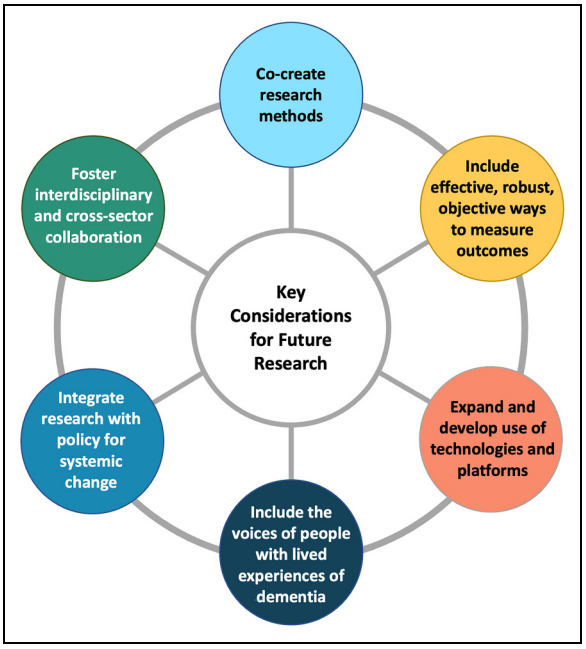

Figure 1. Key considerations for future research.

comprehensive understanding of how people living with dementia interact with music-based interventions; however, a person-centered intentionality must be employed to reduce the risk of harm related to anxiety or confusion when using these devices.[113]

Creative and flexible qualitative and quantitative approaches and methods must be developed that are sensitive to the needs and contexts of people living with dementia,[100] and that effectively capture their in-the-moment experiences.[114] Researchers must critically reflect on assumptions about dementia, avoid tokenism, and ensure the co-research experience is empowering, not burdensome.[115] Furthermore, while using any method of data collection, obtaining ongoing consent of participants throughout the research process is fundamental to conducting ethical research,[116] particularly when the cognitive abilities of participants could change as the study progresses.[117]

Beyond research methods, a further challenge is developing standards of practice for MBIs. While music therapists are highly trained in good clinical practice, presenting music as a complement to care requires thorough investigation into potential risks to patients consistent with research into any other intervention, pharmacological or otherwise. This is another opportunity to incorporate input from those with lived experience of dementia, both in identifying and mitigating dementia-specific risks and adverse effects of MBIs and in creating standards of best practice for new interventions designed to be used by non-therapists. As Hackett et al. (2021) argue, studies regarding MBIs for people living with dementia should be driven by person-centered goals, the cognitive and personal attributes of the participants should inform the specific features of MBIs, and the context must be considered to ensure feasibility and sustainability.[30]

Finally, the underlying impetus for MBIs must lie with real-world innovation and impact beyond purely academic interest and research, so that people living with dementia can benefit from engaging with music and music-based activities. This is particularly relevant to the discussion of music technologies, where the need to implement, scale-up, and commercialize promising technologies is essential if they are to have practical use. Funders and organizations operating within the AgeTech space, such as Canada's AGE-WELL Network of Centres of Excellence (www-agewell-nce.ca) have increasingly required researchers to work closely with industry, health and social care providers, and community organizations to ensure longer-term viability of new technologies. More widely, the long-term sustainability of MBIs emerged as a key issue during project deliberations, highlighting the complexity of, and potential barriers to, innovation and implementation within health and social care. Researchers working within the field need to be cognizant of these kinds of challenges, and working beyond the traditional disciplinary boundaries is required. The engagement of relevant stakeholders is crucial, particularly those with lived experience, at all stages of the so-called "innovation pipeline" from early-stage visioning through development and piloting, to real-world implementation.

Building on these ideas, research on music and dementia must also inform and be informed by policy, in order to create systemic change. Research-driven policy can strengthen the translation of evidence into sustainable community and care practices by embedding music and the arts within dementia care strategies at local, national, and international levels. Policymakers should prioritize frameworks that recognize music not merely as a therapeutic adjunct but as a human right and a means of social inclusion. This could involve integrating arts-based interventions into dementia action plans and funding guidelines and training standards for healthcare and social care providers. To achieve this, cross-sector partnerships between researchers, policy actors, cultural institutions, and dementia advocacy groups are needed to co-produce guidance that ensures equitable access, ethical implementation, and long-term support for MBIs. Such alignment between research and policy would advance not only evidence-informed practice but also the broader goal of enabling people living with dementia to live well through cultural participation.

Figure 1 summarizes our suggested key considerations for future research.

Conclusion

Everyone can participate in music and has a right to do so. Music is an adaptable, accessible, low-cost intervention

which can help support individuals with dementia and facilitate both one-to-one and group interactions, but more research is needed to explore the most effective methods through which music can be integrated into dementia care. Co-designing MBIs and understanding older adults' feedback and responses to music will ensure therapeutic processes and interventions are more aligned with daily experiences and needs. Further, the research process and the communication of findings is a crucial area for advancement in this field. Moving forward, person-centered dementia care needs to position the person living with dementia as the driver of future MBI and music therapy research.

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