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An International Interdisciplinary Commentary on the Revised Guidelines for Music-based Interventions Checklist, Elaboration Guide and Validation Study

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The newly revised reporting guidelines for music-based interventions (RG-MBI) accompanied by the explanation and elaboration guidance document (Robb, Story, et al., 2025) are a much-welcomed addition to the expanding number of frameworks and checklists for reporting interventions. Such frameworks aim to support more robust reporting, which in turn will enable the translation of protocols reported in research studies, the implementation of these protocols in clinical practice, and their replication in future research. Persistent problems in the reporting quality of MBIs suggested that the original checklist (Robb et al., 2011) needed revision (Robb, Springs, et al., 2025). Overall, the new guideline checklist expands upon the original checklist with revised items that offer greater detail for reporting MBIs. The explanation and elaboration document (Robb, Story, et al., 2025) offers examples of optimal reporting for each of the items using illustrative extracts from published research. The rigor and potential utility of the revised checklist lie in the accompanying Delphi validation study with an international interdisciplinary group (USA, Canada, Europe—Robb, Springs, et al., 2025). This study resulted in some reordering of the original checklist items to align with the TIDieR checklist (Hoffmann et al., 2014), the addition of one item and, most importantly, changes in wording and terminology that allow for inclusion of a wider range of music experiences and approaches.

This commentary aims to reflect on the value and utility of the RG-MBI guidelines through broader perspectives, including interdisciplinary (psychobiology; epidemiology; medical doctor; music psychologist; music therapist; nurse; neuroscientist), inter-regional (Antipodean; African; East, South and Southeast Asian; European; and Latin American), and intercultural (Argentinean; Australian; Brazilian; British; Chinese; Columbian; Finnish; Indian; Malaysian; South African; South Korean; North American) lenses. The

authorship of this commentary additionally represents stances of scholar/practitioner (clinician; researcher; educator), and opinions that reflect the potential relevance to practice with different populations across the lifespan (dementia; infant and pediatric; intensive care; mental health/psychiatry; midwifery services; neurorehabilitation).

The expanded RG-MBI checklist is detailed, comprehensive, well-organized, and well-structured. The revised item order is logical and aids professional writing, providing a useful tool for authors to report components of MBIs and to prepare detailed and thorough manuscripts. As with the original checklist (Robb et al., 2011), the RG-MBI provides a much-needed addition to the existing general methodological checklists (CONSORT, SPIRIT, TREND, and TIDieR), which lack the necessary detail for describing the content of music interventions in depth. At the same time, the RG-MBI checklist aligns well with these other widely used frameworks, particularly for reporting the "why, what, who, how, where, and when" involved in the design and delivery of music interventions. Its distinctive contribution lies in clarifying the specific features, delivery methods, and strategies of music interventions. Users are guided to adopt the RG-MBI checklist in conjunction with existing methodological checklists to expand upon the music intervention detail (Robb, Story, et al., 2025).

As noted in both the explanation guidance and the validation study, a guideline is warranted as music interventions vary extensively (e.g., from musical tones used as a sound stimulus, to receptive music listening of entire musical works, to active improvised musicking) and are *complex*. Although music is ubiquitous, its meaning, uses, and purpose differ widely across cultures, generations, and healthcare practices. The structural complexity of MBIs and stimuli, together with music's distinctive attributes—i.e., supporting preverbal communication, engaging multiple senses, and the neurophysiological effects—necessitates precise and detailed articulation. Furthermore, music is delivered in widely contrasting ways as an intervention. Treating music as a singular or universal construct risks obscuring these nuanced features and their therapeutic implications (Karkou et al., 2025). Furthermore, robust reporting will optimize the inclusion and accurate representation of interventions in systematic reviews and meta-analyses, which in turn will inform future research as well as clinical practice.

The Revised Checklist Items

The development of the RG-MBI items and the implementation of the validation study followed the gold standard Delphi process, which increases the RG-MBI value and quality. Although not explicitly stated, it seems participant data was anonymized. The response rates at Delphi round one (63%) and round two (60%) were acceptable, although perhaps somewhat low. Furthermore, the mean completion times of the survey (14 min at round one and 7 min at round two) were relatively low indicating that on average, respondents may not have spent much time on commenting on the RG-MBI item formulations qualitatively.

The revised checklist is comprehensive and discipline-agnostic, potentially accommodating perspectives from across interdisciplinary fields of scholarship, including the arts, neuroscience, medicine, psychology, and psychotherapy. While it is broad enough to encompass wide-ranging clinical conditions, collaborative efforts from researcher and clinical expert groups will help generate more field-specific adaptations where contextual and population-specific factors are critical (e.g., in culturally embedded settings), or in special education, dementia care, brain injury rehabilitation, or mental health where tailored guidance is needed.

The Delphi process identified that revisions were needed to include a wider range of music experiences from differing approaches. Indeed, the revised Item 3b (Music) seems more inclusive of different practices as it assists with a description of more varied music experiences. Initially, the level of detail might appear burdensome, but it is precisely this detail that is often omitted in reporting of both practice and research, making replication challenging. Furthermore, this detail may facilitate subgroup analysis in meta-analyses to help determine the features of interventions that are critical to effectiveness. This is much needed in the field, potentially helping to identify mediators and moderators of MBIs. Detailed reporting in this way moves beyond descriptions and may lead to identifying mechanisms and assist with replication of interventions, e.g., for neurological populations (dementia, brain injury, stroke, and neurological illness) where elements like rhythm, tempo, and salience can be used to address cognitive, emotional, or behavioral outcomes.

Item 2 (intervention theory/scientific rationale) remains relatively unchanged from its former iteration (Item A, Robb et al., 2011). This item could be expanded for authors to elaborate on

any differences between the music intervention being investigated and the comparator (control condition) in terms of therapeutic components that are shared or specific to each. Item 2 might also report on any "practical" rationale (i.e., the purpose of a music intervention and how it was developed, including whether patient and public involvement was a feature of its design), and whether a person-centered approach underpinned the rationale. The original guidelines (Robb et al., 2011) state "it is impossible to capture all of the essential content investigators should report—ultimately this responsibility lies with the investigator and should be guided by the study's theoretical framework." (p.8). We reiterate the centrality of the theoretical framework for rigorous reporting of MBIs. This item brings together the components of the music intervention, identifies the health outcomes of interest, and the potential mechanisms. However, the responsibility to report comprehensively lies with the authors of any MBI. We encourage authors to consider these suggestions in their use of the RG-MBI.

In particular, the expanded Item 3b prompting greater detail of musical characteristics is welcomed. Focusing on the reporting of music therapy interventions specifically, music is frequently created live (rather than the use of recorded music). The previous checklist (Robb et al., 2011) lacked specificity of music characteristics, requiring greater reliance on additional reporting frameworks. For example, the previous checklist was used to develop an improvised music-speech protocol (Zhang, 2022); however, integration with the *Therapeutic Function of Music Plan* (Hanson-Abromeit, 2015) was necessary to enhance the detail and clarity of the protocol's reported musical characteristics. Other key details that might be prompted in Item 3b include reporting on the familiarity, personal relevance, or novelty of the music to the participants and the associative qualities of the music. All these variables can be important mediators in therapeutic and music medicine interventions and may be more meaningful aspects to report than on the musical elements of a piece. Similarly, individual liking of music might be another key detail to be reported as it can be a critical factor influencing adherence and outcomes.

Despite the improvement to Item 3b, the highly dynamic and nuanced nature of live music remains challenging to capture with the revised checklist. This is particularly so for an intervention like clinical improvisation in which therapist and client cocreate music in dialogue with each other, and which tends to draw on

relationship theories. The examples offered in the elaboration guide illustrate this challenge. For example, Item 3a (Music selection) examples involve recorded music only (see Box 3). Item 3b (Music) provides only one example using live music by a therapist, although "synchronization" may be understood to be a strategy rather than a music description (see Box 4). Three of the four examples for Item 3c (Music delivery method) use recorded music, and the only example involving live music offers a minimal description: "one song was to be sung individually with harmonic accompaniment and support from the therapist." (See Box 5, p.6). For complex relational MBIs where the emphasis is on client-led, spontaneous, and cocreated live music-making, even more guidance is needed. Clinical improvisation based in relational theories (e.g., psychodynamic) is a widely used MBI in music psychotherapy with the triad of therapist/client/music being active agents in the intervention. We hope that future efforts promoting the RG-MBI to clinicians might provide enhanced illustrations of interventions used in music psychotherapy or other relational MBIs to support music therapists using the framework for knowledge translation.

Item 3e (intervention strategies) remained relatively unchanged from the original checklist. Yet, a more qualitative description would be helpful for replication, detailing not just *what* was done, but *how* the intervention was implemented and which aspects were considered important. This might also include whether strategies involve a person-centered approach or whether codesign with participants was a feature of the intervention. Describing the arc of an overall session structure and duration of component parts might be encouraged too for replication purposes. Reporting the essential features of the music (Items 3b and 3e) needs to be closely aligned with intervention rationale (Item 2) and the relevance to the expected outcomes. While the revised guidelines provide a framework for reporting, linking the content between items is essential for ensuring theoretical coherence and potential replication of the MBI.

Companion frameworks/checklists may continue to be useful here. For example, the INNATE framework for arts engagement (Warran et al., 2022) assists with identifying ingredients of an intervention. As a theoretical framework rather than a reporting guideline, INNATE expands on some aspects of an intervention that are not prompted by the RG-MBI, specifically, *activity, people,* and *context.* "Activity" identifies elements such as whether engagement

was goal-orientated, the level of challenge in an activity, and the use of feedback and instruction. These are all elements that can activate mechanisms of mastery and self-efficacy. "People" encourages detail about who was involved, which is important in group interventions where composition, heterogeneity of members, and managing different characteristics of group membership are all important. For example, considering differences in music expertise in group interventions may be an important mediator influencing not just outcomes, but also group cohesiveness (Windle et al., 2020). "Context" expands the notion of setting through considering factors such as whether participants have been recruited to an intervention by researchers or referred by healthcare professionals or by artists; these can all moderate the way a person engages and their experience (thereby influencing outcomes). Therefore, companion frameworks (such as INNATE) may be helpful for providing more nuanced information when reporting, comparing, replicating, and scaling of MBIs. Including these elements is important not only for replication but may also help to describe theoretical elements, thus enabling interpretation of findings.

Item 8 (treatment fidelity) has been expanded to encourage reporting of participant engagement by considering three dimensions: treatment delivery, treatment receipt, and dose receipt. While useful, greater consideration might be needed in real-world contexts given challenges within individual settings and client characteristics. Some MBIs may imply a larger scale (e.g., choirs) and yet struggle to maintain membership, leaving members feeling awkward to participate, resulting in poorer outcomes. The use of standardized materials (such as manuals) is essential and critical in randomized controlled trials where recruitment prioritizes homogeneity of participants, but less applicable in clinical situations where clients (participants) show diverse needs and varying levels of ability. Similarly, assessing treatment receipt, such as how participants understand the intervention, is not always feasible or realistic across individuals in clinical settings. Reporting treatment fidelity therefore needs to reflect how interventions were adapted across different contexts to meet individualized needs. Such a broadened scope can still support a systematic approach to designing and reporting interventions, particularly in contexts when relying on fixed methods of fidelity checking is not possible, appropriate, or authentic.

One omission from the checklist was noted that may be included in Item 8 until further revisions are made. "Safety" is needed for

reporting risk management during MBIs. This might report on how patients are kept safe, or contingency plans where patient/staff safety may be at risk (e.g., during periods of agitation, aggression, or emotional outbursts) as well as clarifying the involvement of trained professionals. These details are usually stated in advance in ethics applications and need to be included in reporting. Contraindications might also provide useful information to ensure patient safety.

Cultural Specificity is Needed

While the Delphi study has enhanced the rigor of the MBI checklist, greater cultural specification in MBI reporting is needed beyond solely Items 3a and 3b where cultural relevance, identity, and heritage are prompted. The role and meaning of music (and health) in a given society, community, setting, context, or geographical region varies widely and there does not seem a place to capture this adequately in the current RG-MBI, although the authors do emphasize that Item 2 (intervention theory/scientific rationale) informs the processes for music selection. Cultural influences drive conscious or unconscious responses to music, how music is perceived and performed, the display or nondisplay of emotions, and expectations of what music might or might not do. Music selection and the complexities of music's influence on behavioral states such as pain, anxiety, or quality of life are also influenced by culture and need to be viewed through wider lenses. In brief, all users of the RG-MBI need to articulate the multidimensional cultural elements involved in MBIs to a greater degree.

MBI reporting needs to capture wider cultural practices in order to improve the uptake of the RG-MBI both to enhance research rigor and knowledge translation to practice. The RG-MBI risk being perceived as irrelevant unless researchers, clinicians, and educators understand that reflecting culture-specific dimensions of health and of the role and meaning of music in different cultures are valued. As we witness an ever-growing migration and diaspora of peoples around the globe, multiple worldviews must be captured in the way that MBI are reported. Otherwise, clinical practice risks not providing a cultural fit for ever-diversifying clinical populations. For example, cultural congruence in mental health interventions can be a key to a person feeling enough safety, connection, and meaning in order to begin to engage; incongruence may be a barrier. In countries with continental dimensions, such as Brazil, and

where musical culture is highly diverse, cultural adaptation of MBIs is essential. The MBI selection and delivery process should explicitly consider the cultural background, regional traditions, and lived experiences of the target population to maximize the relevance and therapeutic impact of the MBI. Without explicitly articulating these cultural considerations we risk failing to include perspectives that have remained historically hidden in research.

For example, Indian classical music including the use of ragas is a well-established MBI to target changes in biological outcomes, such as blood pressure and heart rate (Ajmera et al., 2018), sleep quality (Deshmukh et al., 2009), depression and anxiety (Varghese et al., 2019), and pain (Jethva et al., 2025). Although positive outcomes have been reported for music listening interventions using ragas, the reporting of the theoretical rationales, treatment strategies, and musical experiences can lack enough clarity concerning the musical elements to ensure replication and generalization. Playing or singing ragas involves subtle manipulations of textural elements and tempo (sometimes smooth and sometimes quick, rough, and harsh) depending on the ornamentations (*gamakas*) used for determining the emotional qualities expressed by the raga. The *rasa* (or objective) of a specific raga needs to be indicated. For example, *Shantha* rasa indicates expressions of feeling calm, serene, and tranquil after relaxation training. This example is offered to illustrate the complexity of one MBI that is widely used, yet culturally bound.

There are several places in the RG-MBI where authors may detail these elements. Item 2 (intervention theory/scientific rationale) may be a place where cultural viewpoints of both music and health (targeted outcomes) could be considered more explicitly. Item 3b can include specifics of material characteristics of musical instruments (e.g., made of skins, wood, clay, or metals) to attest to the cultural contexts of music making.

Reporting of MBIs needs to reflect the distinctive characteristics of their cultural context, while also being communicated within a shared framework. Achieving this balance is essential for ensuring the effectiveness of culturally grounded MBIs. In this context, the RG-MBI can serve as a means of supporting universality while respecting cultural specificity.

RG-MBI as an Educational Tool

The RG-MBI are invaluable as a teaching tool for guiding clinical and research thinking in both clinicians and emerging scholars.

The framework offers a structure for theory and application for both protocol development and research reporting. For entry level students, the guidelines provide a tool for developing clinical reasoning in treatment planning. For students with advanced clinical practice (e.g., doctoral), the RG-MBI are invaluable in protocol development, encouraging articulation of solid theoretical foundations as well as an understanding of the level of musical and procedural detail necessary for replication. For educators—of both music-based professions as well as interprofessional groups—the guidelines provide a framework for teaching critical thinking about MBIs both in the reporting of research as well as knowledge translation to practice. As a comprehensive, theoretically grounded, and cross-disciplinary tool, the RG-MBI can effectively support replication, systematic synthesis, and clinical translation.

Summary

The checklist is comprehensive and allows professionals from different disciplines to use it to communicate their research involving MBIs. The level of detail this tool promotes is necessary for clear and transparent communication of interventions and results. Although completing yet another reporting checklist [for example, in addition to TIDieR (Hoffmann et al., 2014)] is time consuming, the revised items provide greater clarity. However, more detailed reporting may not fall within the limited word counts required of most journals. Whilst providing intervention details within supplementary materials is feasible, moving the description of the music (e.g., Item 3b) to a supplementary file may reduce the prominence of this material, thus undermining the importance of these components. Challenges remain in reporting complex MBIs (such as clinical improvisation) with accuracy and clarity to communicate the nuance of spontaneous interpersonal musical interactions. Similarly, complex MBI that are based on nonmusical (e.g., psychotherapeutic) models where musical and interpersonal elements are challenging to isolate need more guidance in further dissemination of the RG-MBI. Ultimately, placing attention on how to describe the music itself will demonstrate how complex these interventions truly are.

The high degree of consensus over the items along with the sustained problem of low uptake highlights that good research is difficult to conduct and report. The challenge now is raising awareness of the RG-MBI to ensure that journal editors and

reviewers across fields of scholarship use the checklist to improve reporting. With more dedicated and passionate researchers and access to research funding, the guidelines will gain a needed impetus and traction. If clinicians have an interest in research and possess the necessary skills, they will be able to optimize and accelerate its adoption and wide usage. The RG-MBI may encourage research collaborations across disciplines to advance clearer evidence-based reporting of MBIs and health outcomes. The RG-MBI will be invaluable as a push forward to situate music more solidly in the evidence-based medicine ecosystem and move from music being seen as "alternative" toward being recognized as an integral option in healthcare.

Author contributions

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