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INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY EDUCATIONAL RESEARCH
ISSN:2277-7881(Print); IMPACT FACTOR :9.014(2025); IC VALUE:5.16; ISI VALUE:2.286
Peer Reviewed and Refereed International Journal(Fulfilled Suggests Parametres by UGC)
Volume:14, Issue:4(1), April: 2025
Scopus Review ID: A2B96D3ACF3FEA2A
Article Received: Reviewed : Accepted
Publisher: Sucharitha Publication, India
Online Copy of Article Publication Available : www.ijmer.in

MUSIC AS A STRESS BUSTER: A CONTEMPORARY LITERATURE REVIEW

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Abstract

Stress is an inevitable part of modern life, amplified by rapid technological change, heavy workloads, and social pressures. Increasing evidence highlights music as an accessible and effective way to manage stress, yet findings vary across settings and populations. This conceptual paper reviews peer-reviewed studies published from 2020 onward to examine how music supports stress reduction and emotional well-being. Literature was gathered from databases such as PubMed, PsycINFO, and Google Scholar using key terms including "music," "stress," and "coping," with a focus on empirical and conceptual work across clinical, educational, and everyday contexts.

The synthesis shows that listening to music—particularly self-selected or culturally familiar pieces—consistently lowers subjective stress and anxiety. Participants report improved mood, reduced tension, and a greater sense of control. Evidence for changes in physiological markers such as cortisol, heart-rate variability, and blood pressure is mixed: some trials show significant reductions, while others report only temporary effects. Theoretical models like the Transactional Model of Stress and Coping and the Music-Based Emotion Regulation framework explain these results, suggesting that music primarily supports emotion-focused coping, helping individuals reappraise stressful events and regulate arousal.

Practical implications span healthcare, education, workplaces, and mental health services. Music sessions or personalized playlists can be integrated into wellness programs, therapy, or hospital care as a low-cost, culturally adaptable intervention. However, many studies use small samples and varied protocols, limiting cross-study comparisons and long-term insights. Future research should employ standardized methods and diverse populations to clarify sustained outcomes.

Overall, the review underscores music's potential as a simple, evidence-based tool for reducing psychological stress and enhancing well-being, offering a strong foundation for future applied and clinical work.

Keywords: Music Therapy, Stress Reduction, Coping, Emotion Regulation, Well-Being

INTRODUCTION

Music serves as both an art form and a practical tool for emotional regulation, increasingly recognized as a low-cost intervention for stress and well-being (Adiasto et al., 2022). Research shows that structured music therapy and everyday listening can reduce subjective stress, improve mood, and influence physiological stress markers in both clinical and non-clinical settings (De Witte et al., 2020).

Mechanistically, music supports coping through psychological and neurobiological pathways. It alters affective states, distracts attention from stressors, and promotes emotional expression and cognitive reappraisal (Maidhof et al., 2023). At the same time, music engages brain reward circuits, modulates autonomic activity, and affects the hypothalamic–pituitary–adrenal axis, reflected in changes in heart rate variability, blood pressure, and biomarkers such as cortisol and alpha-amylase (Lata & Kourtesis, 2021).

Systematic reviews and randomized trials report medium-to-large effects of music therapy on stress outcomes, while laboratory and real-world studies show that self-selected or guided listening accelerates recovery and reduces anxiety. Personal preference consistently predicts stronger benefits than researcher-chosen music (De Witte et al., 2020). Group music-making and communal listening further enhance social connectedness, offering collective stress-buffering effects (Dingle et al., 2021).

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Given its accessibility, minimal risk, and adaptability across ages and contexts, music is a promising, evidence-based adjunct for stress management. This paper synthesizes recent findings, clarifies underlying mechanisms, and highlights moderators such as individual preference and intervention format to guide future research and practical applications in health and workplace settings.

REVIEW OF LITERATURE

Recent research continues to strengthen the evidence for music as an effective tool for reducing stress. Maidhof et al. (2023) explored how participant-selected music compares with researcher-selected music during an acute stress test. Using a cold-pressor task, the authors found no universal difference between the two conditions, but gender moderated the effects: women reported higher subjective stress with self-chosen music yet showed faster heart-rate recovery, while men displayed lower heart-rate responses when listening to their own selections. These results point to the importance of personal preference and individual differences when using music for stress relief.

Clinical settings provide additional evidence of music's benefits. Nguyen et al. (2023) conducted a pilot randomized trial combining daily music listening with progressive muscle relaxation for women receiving chemotherapy. Participants who followed the combined program reported significantly lower anxiety, depression, and stress, along with improved quality of life, compared to those receiving standard care. Although the small sample limits generalization, the study shows how music can complement other mind-body techniques in high-stress medical environments.

At a broader level, Adiasto et al. (2022) synthesized experimental work on stress recovery in healthy individuals. Their systematic review and meta-analysis revealed only small, non-significant overall effects of music on physiological stress recovery, reflecting wide variability in study designs, types of music, and outcome measures. This finding suggests that while many individual studies report benefits, the evidence for consistent laboratory effects in healthy populations remains mixed.

Together, these studies show that music can reduce stress across diverse settings—from everyday listening to acute medical care—while also highlighting important moderating factors such as personal music preference, cultural context, and the intensity of the stressor. They collectively support the view that music is a versatile, low-risk complement to other stress-management approaches, yet they also point to the need for larger and more standardized trials to clarify long-term effects and the mechanisms behind individual differences.

THEORETICAL FRAMEWORK

One key framework is the **Transactional Model of Stress and Coping** (Lazarus & Folkman), which views stress as dependent on how individuals appraise a situation and their perceived coping resources. Coping can be emotion-focused or problem-focused. Music fits the emotion-focused pathway by modulating feelings, lowering perceived threat, and enhancing a sense of calm or control. Recent studies use this model to explain how music aids stress management in medical and educational contexts (Biggs et al., 2017).

The **Circumplex Model of Affect** organizes emotions along two dimensions—valence (pleasant–unpleasant) and arousal (low–high). In music research, it clarifies how tempo, mode, and rhythm shift listeners' emotional state. Calming music, for example, can lower arousal and increase pleasantness, promoting stress recovery. This model provides a structured way to track how music changes emotional responses during or after stress (Posner et al., 2005).

RESEARCH PROBLEM

Stress is a widespread concern linked to anxiety, depression, and other health issues, creating a need for simple, low-cost interventions. Music is a natural choice for many people seeking relaxation and emotional relief, yet its exact effects on stress remain unclear. Recent studies show that music can lower perceived stress and sometimes reduce physiological markers like cortisol, but results vary by genre, duration, and individual preference. Evidence is also limited by small

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samples and short follow-ups. This paper reviews recent research to clarify how music reduces stress and to identify conditions that make it an effective stress-management strategy.

RESEARCH QUESTIONS

1. How does listening to music influence psychological and physiological indicators of stress in adults, according to recent empirical studies?

2. What role do factors such as personal music preference and listening context (e.g., clinical vs. everyday settings) play in the effectiveness of music as a stress-reduction tool?

3. What mechanisms—emotional, cognitive, or physiological—are most consistently identified in recent literature as pathways through which music alleviates stress?

METHODOLOGY

This study adopts a conceptual, literature-based approach to explore music as a stress-reduction strategy. A systematic search was conducted in August 2025 across databases including PubMed, PsycINFO, Scopus, and Google Scholar. Keywords such as "music," "stress," "coping," "relaxation," and "mental health" were combined with Boolean operators (e.g., "music AND stress reduction") to locate relevant peer-reviewed articles. Only studies published in English from January 2020 onward were included to ensure current evidence.

The selection focused on empirical studies and high-quality reviews examining the relationship between music and psychological or physiological stress. Studies limited to unrelated medical conditions or lacking clear stress outcomes were excluded. After screening titles and abstracts, full texts were reviewed to confirm relevance. Key information—such as research design, participant characteristics, type of music intervention, duration, and reported outcomes—was extracted and summarized.

Rather than performing a meta-analysis, findings were synthesized narratively to highlight recurring patterns and theoretical explanations. The review also integrates established frameworks, including the Transactional Model of Stress and Coping and the Circumplex Model of Affect, to interpret results. This method provides a comprehensive yet concise understanding of how recent evidence supports music as an effective, accessible tool for stress management.

RESULTS / SYNTHESIS OF LITERATURE

Recent reviews show that music can reduce psychological stress and anxiety, though physiological effects are less consistent. A comprehensive review found therapist-led, tailored music interventions reliably lower stress in clinical settings, while experimental studies in healthy populations report mixed results (De Witte et al., 2020). Meta-analyses of controlled stress-recovery experiments reveal small or non-significant effects, with wide variation in stressors, music type, and timing. Overall, music offers dependable mood and anxiety relief, but uniform physiological benefits remain uncertain due to methodological heterogeneity (Adiasto et al., 2022).

Clinical and procedural settings offer clearer, more consistent benefits. Meta-analyses and randomized trials in medical contexts (for example, patients undergoing cardiac catheterization or other invasive procedures) report significant reductions in pre-procedural anxiety and improvements in stress-related vital signs such as blood pressure. These findings suggest that music, delivered as a simple, low-risk adjunct before or during medical procedures, can have practical and replicable calming effects for people facing high-intensity, situational stress (Santos et al., 2024).

Physiological evidence is nuanced: biomarkers such as heart rate variability, salivary cortisol, and alpha-amylase sometimes change following music interventions, but results depend heavily on baseline stress level, type of music, and the biomarker chosen. Some studies point to modest reductions in stress hormones or beneficial shifts in autonomic markers after music interventions, whereas others find minimal or mixed physiological effects despite clear subjective

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improvements. This pattern highlights that music's strongest and most consistent impact is often on self-reported affect and anxiety, with physiological effects present but less consistent (Rasing et al., 2022).

A recurring theme across the literature is the importance of moderators and mechanism-related factors. Personal music preference, intentionality (self-selected vs. assigned music), familiarity, and the social context (individual listening vs. group singing) shape outcomes: self-selected and familiar music often lead to stronger emotional benefits, and group music activities can add social support effects that further buffer stress. Methodological gaps—small sample sizes, short follow-ups, inconsistent outcome measures, and cultural homogeneity—limit firm conclusions about long-term effectiveness. Future work would benefit from larger randomized trials that standardize key variables (timing, music characteristics, and biomarker selection) and test for moderators (preference, baseline stress, cultural factors) to clarify when and how music most reliably reduces stress (Song et al., 2023).

DISCUSSION

The literature reviewed presents a consistent yet nuanced picture: music is a promising, low-cost tool for reducing psychological stress, though the strength of its effects varies with context, intervention type, and individual differences. In clinical and procedural settings—where stress levels are high—music shows the clearest benefits (De Witte et al., 2020). Systematic reviews and randomized trials report that structured music therapy and simple listening protocols reduce anxiety and can improve vital signs before or during medical procedures.

Theoretical frameworks help explain these patterns. According to the Transactional Model of Stress and Coping, music functions as an emotion-focused coping resource: it alters stress appraisal and supports strategies like distraction or reappraisal. The Circumplex Model of Affect shows how music that lowers arousal and increases pleasantness can aid stress recovery. Together these theories suggest music works when it meaningfully shifts emotional state, is used intentionally, or strengthens social support, explaining why therapist-led or self-selected music and group music-making are often most effective.

Individual preference and context are crucial moderators. Self-selected or familiar music often produces stronger benefits than researcher-chosen pieces, though not always—gender and emotion-regulation style can influence responses (Maidhof et al., 2023). One controlled study found men gained more physiological benefit from self-chosen music, while women's responses were more variable. Such findings show that "one-size-fits-all" prescriptions, like always using slow classical music, are unlikely to capture the full effect. Practical implications follow directly.

Several limitations temper these conclusions. Methodological heterogeneity—across music characteristics, intervention timing, and outcome measures—complicates synthesis. Small samples, short follow-ups, and cultural homogeneity limit generalizability. Physiological measures remain sensitive to timing and context, and mechanistic pathways are under-tested.

Future research should prioritize larger randomized trials with standardized music parameters, clear physiological sampling, and attention to moderators such as preference, baseline stress, and culture. Mechanism-focused studies combining subjective, autonomic, and endocrine measures would clarify how music shifts the stress response and test scalability in hospitals, schools, and workplaces.

Overall, music reliably improves subjective mood and anxiety and shows clear utility in clinical settings. These findings answer the study's questions by demonstrating that music lowers psychological stress even when physiological changes vary, that personal preference and context matter, and that emotion-regulation theories explain its benefits.

IMPLICATIONS

This review highlights music as a simple, low-cost tool for stress management across health, workplace, and educational settings. Healthcare providers can integrate patient-selected music before procedures to ease anxiety, while schools and

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offices can offer brief "music breaks" to enhance focus and emotional balance. Mental-health professionals may recommend personalized playlists as an adjunct to therapy, empowering clients with a culturally adaptable coping strategy. For researchers, the findings point to the need for standardized methods and larger, more diverse samples to clarify long-term effects and strengthen evidence for practical, wide-scale application of music-based interventions.

LIMITATIONS

This review is limited by the small, heterogeneous samples and varied protocols of the included studies, making it difficult to compare outcomes or determine long-term effects. Most research focuses on short-term interventions and self-reported stress, with inconsistent measurement of physiological markers. Additionally, the conceptual nature of this paper means no primary data were collected. These factors restrict the ability to draw definitive conclusions and highlight the need for more standardized, large-scale, and longitudinal studies.

CONCLUSION

Despite these limitations, the review demonstrates that music is a versatile and evidence-supported tool for reducing stress, particularly in terms of subjective experience. Across diverse contexts—from hospital waiting rooms to everyday listening—music consistently lowers self-reported anxiety and improves mood, even when physiological markers such as cortisol or heart-rate variability show mixed results.

Theoretical perspectives, including the Transactional Model of Stress and Coping and the Circumplex Model of Affect help explain these findings by framing music as an emotion-focused coping resource that alters appraisals, regulates arousal, and fosters social connection. Together, these insights answer the study's research questions: music reliably mitigates psychological stress, its effectiveness depends on personal preference and listening context, and its benefits operate largely through emotional-regulation mechanisms. With continued efforts to standardize methodologies, expand participant diversity, and investigate long-term outcomes, music can be more confidently recommended as both a personal coping strategy and a structured therapeutic adjunct in healthcare, educational, and occupational settings.

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