



Easing the Anxiety Crescendo: How Structured Listening Comprehension Influences Mental Health in Music Students

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Submitted: June 26, 2025. Revised: May 17, 2026. Accepted: June 25, 2026

Abstract

This study investigated whether structured listening comprehension activities reduce performance anxiety among undergraduate music students. Sixty participants completed four weeks of guided listening sessions focused on classical, jazz, or popular music combined with reflective prompts encouraging emotional interpretation and cognitive engagement. A quasi-experimental pretest-posttest design employed the State-Trait Anxiety Inventory and qualitative reflections to evaluate outcomes. Anxiety levels declined across all groups, with the greatest reduction observed in the classical music condition, followed by jazz and popular music. Findings indicate that reflective listening processes, including attention, interpretation, and emotional awareness, may help reduce anxiety and enhance psychological well-being in music education.

Keywords: listening comprehension; music education; anxiety reduction; reflective listening; music cognition; emotional regulation

How to Cite: Bramantyo, T., Wei, C. O., & Adzkia, S. F. (2026). Easing the Anxiety Crescendo: How Structured Listening Comprehension Influences Mental Health in Music Students. *Harmonia: Journal of Arts Research and Education*, 26(1), 127-139

INTRODUCTION

Anxiety disorders continue to represent a significant global mental health concern, affecting millions of individuals across educational, social, and professional settings (World Health Organization [WHO], 2022; Baxter et al., 2013). Within higher education, music students appear especially vulnerable because of the intense combination of artistic expectations, performance demands, competitive evaluation, and perfectionistic standards embedded within music training (Kenny, 2016). Long rehearsal hours, repeated public performances, and constant technical assess-

ment often create conditions associated with chronic stress, emotional exhaustion, and performance-related anxiety.

For many students, performance anxiety extends beyond temporary nervousness before concerts or examinations. Research has linked music performance anxiety to attentional disruption, physiological tension, emotional instability, and diminished self-confidence during performance situations (Papageorgi et al., 2021). Over time, these experiences may influence broader aspects of psychological well-being, motivation, and academic persistence. As a result, accessible and educationally relevant interventions remain an

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important concern within music education.

Recent scholarship in psychology, neuroscience, and music cognition has increasingly emphasized the emotional and regulatory potential of music listening practices. Listening to music engages perceptual, cognitive, and affective processes connected to memory, emotional interpretation, reward processing, and attentional organization (Koelsch, 2014; Koelsch, Vuust, & Friston, 2022). Neuropsychological research has further shown that listening to music activates brain regions associated with emotional processing and stress regulation, including structures linked to affective responses and reward anticipation (Zatorre & Salimpoor, 2019). These findings suggest that listening activities may provide meaningful support for emotional management, particularly among individuals with advanced musical sensitivity and training.

Yet the concept of listening comprehension within music education remains insufficiently clarified. In many educational traditions, listening comprehension has primarily been associated with language learning and the decoding of verbal meaning from spoken discourse. The present study approaches the concept differently. Within this research, listening comprehension is reconstructed as an active and reflective process through which listeners engage emotionally, cognitively, and aesthetically with musical sound.

Listening, therefore, is not treated as passive auditory reception. Instead, it involves focused attention, interpretive awareness, emotional reflection, and engagement with musical structure. This perspective aligns with scholarship on active listening, deep listening, music appreciation, and mindful listening, all of which emphasize intentional interaction with musical expression and form (Oliveros, 2005; Green, 2008; Wiggins, 2015). Research in music cognition similarly characterizes listening as a predictive and interpretive activity through which listeners organize and respond to musical patterns

and expressive cues (Juslin & Västfjäll, 2008; Koelsch, 2014).

From this perspective, musical comprehension does not involve extracting fixed meaning from sound. Meaning instead emerges through interpretive engagement with rhythm, melody, harmony, tempo, dynamics, and expressive character. Listening is a process of constructing emotional and cognitive understanding through interaction with musical experience.

Mindfulness-based theories further strengthen this framework. Mindful listening practices emphasize sustained attention, present-centered awareness, and reflective observation during auditory experience (Kabat-Zinn, 2018). Applied to music education, such practices may encourage emotional regulation not only through relaxation, but also through attentional stabilization and reflective awareness. Listening, in this sense, functions simultaneously as a pedagogical activity and a psychologically meaningful practice.

Although previous studies have explored music therapy, emotional regulation, and mindfulness-based interventions, comparatively limited research has examined structured reflective listening as a targeted strategy for reducing anxiety among music students. This gap is notable because music students have greater familiarity with musical interpretation and may therefore respond differently to guided listening interventions (Kenny, 2016). Existing evidence also suggests that reflective listening activities may help interrupt maladaptive cognitive patterns associated with anxiety by encouraging sustained attention and emotional awareness (Linarдон et al., 2019).

The present study builds upon these interdisciplinary perspectives by examining how structured listening comprehension activities influence anxiety reduction among undergraduate music students. Three musical genres—classical, jazz, and popular music—were selected to explore how different musical structures shape emotional and cognitive engagement during listening experiences. Classical music

often emphasizes harmonic balance, continuity, and predictability, qualities associated with attentional calmness and emotional stability. Jazz listening, by contrast, frequently involves rhythmic variation, improvisational complexity, and shifting musical expectations that may stimulate interpretive concentration and cognitive flexibility. Popular music tends to encourage autobiographical reflection and emotional identification through familiar lyrical themes and personal associations.

To investigate these experiences, the study employed a quasi-experimental embedded mixed-methods design with a supportive explanatory qualitative component. Undergraduate music students participated in a four-week guided listening intervention that included reflective listening sessions, analytical prompts, and emotional reflection activities. Anxiety levels were measured using the State-Trait Anxiety Inventory (STAI), while post-intervention interviews explored participants' emotional responses, interpretive experiences, and perceptions of the listening activities.

By integrating perspectives from music cognition, mindfulness theory, reflective listening pedagogy, and music psychology, the study contributes to ongoing discussions surrounding non-pharmacological approaches to student well-being in music education. At the same time, it offers a clearer conceptualization of listening comprehension as an active interpretive process grounded in emotional, cognitive, and aesthetic engagement with music.

CONTEXT AND REVIEW OF LITERATURE

Anxiety among music students has become an increasingly prominent concern within higher education and performing arts research. Students in music programs are routinely expected to sustain technical precision, expressive interpretation, and performance readiness under conditions of continual evaluation (Kenny, 2016). Such demands often extend beyond ordi-

nary academic stress. Music performance anxiety typically combines cognitive worry, physiological arousal, emotional tension, and fear of negative evaluation during public performance situations. Over prolonged periods, these pressures may influence artistic confidence, academic achievement, emotional well-being, and even long-term professional development (Papageorgi et al., 2021).

In response to growing concern surrounding anxiety disorders, non-pharmacological interventions have attracted increasing scholarly attention. Educational institutions and mental health researchers have shown particular interest in approaches that are accessible, adaptable, and less dependent on clinical treatment environments. Among these approaches, music listening interventions have demonstrated considerable potential to reduce stress and support emotional regulation through both affective and cognitive mechanisms (Chanda & Levitin, 2013; Juslin & Västfjäll, 2008). Much of the existing literature, however, has concentrated primarily on passive music exposure rather than on reflective or interpretive listening processes.

The present study approaches listening comprehension from a perspective distinct from language-learning traditions. In language education, listening comprehension generally refers to decoding spoken meaning. Within music education, however, comprehension cannot be limited to linguistic interpretation or auditory recognition alone. Musical listening involves emotional interpretation, aesthetic awareness, attentional focus, and cognitive engagement with sound.

This understanding aligns with scholarship on active, deep, and mindful listening practices that emphasize intentional engagement with musical structure and expressive meaning (Oliveros, 2005; Green, 2008; Wiggins, 2015). Research in music cognition similarly characterizes listening as a predictive and interpretive activity through which listeners organize, anticipate, and emotionally respond to musical patterns (Koelsch, 2014; Koelsch,

Vuust, & Friston, 2022).

Meaning, therefore, does not emerge from music in a fixed or universally stable form. Instead, listeners actively construct emotional and cognitive understanding as they engage with rhythm, melody, harmony, tempo, dynamics, and expressive character. Musical comprehension becomes an interpretive process shaped through reflective interaction with sound.

Neuroscientific research further supports this perspective. Studies in psychology and music cognition have demonstrated that music listening activates neural systems associated with emotional processing, attentional regulation, stress response, and memory formation (Zatorre & Salimpoor, 2019). Brain regions, including the amygdala, hippocampus, and prefrontal cortex, have been linked to emotional and cognitive responses during listening experiences (Chanda & Levitin, 2013). These findings suggest that structured listening activities may influence anxiety reduction through mechanisms extending beyond simple distraction or passive relaxation.

Mindfulness-based theory also provides a relevant conceptual foundation. Mindfulness practices emphasize present-centered awareness, focused attention, and non-judgmental observation of experience (Kabat-Zinn, 2018). Previous research has shown that mindfulness-oriented interventions may reduce anxiety symptoms by strengthening attentional stability and emotional self-regulation (Goyal et al., 2014; Linardon et al., 2019). Guided listening activities may encourage comparable processes by directing attention toward musical detail, emotional awareness, and reflective interpretation.

Within music education itself, reflective listening has long been regarded as an important dimension of musical understanding. Wiggins (2015) argued that musical learning develops not only through performance practice but also through intentional listening experiences that cultivate interpretation, sensitivity, and critical reflection. Green (2008) likewise empha-

sized that listening practices deepen students' engagement with musical structure and expressive meaning. Such perspectives position listening as an active interpretive activity rather than a passive sensory event.

Building on these interdisciplinary perspectives, the present study investigates whether structured listening comprehension activities may contribute to anxiety reduction among undergraduate music students. Unlike research focused solely on passive exposure to music, this study centers on guided reflective listening sessions designed to encourage sustained attention, emotional interpretation, and analytical engagement with musical elements.

Three musical genres were selected because they offer distinctly different listening experiences. Classical music is frequently associated with harmonic predictability, emotional continuity, and relaxation responses that may support attentional stability and emotional regulation (Koelsch, 2014). Jazz music often involves improvisational complexity, rhythmic variation, and shifting musical expectations, potentially encouraging cognitive flexibility and heightened concentration (Chanda & Levitin, 2013). Popular music, by contrast, commonly emphasizes lyrical expression, autobiographical association, and emotional identification, which may support emotional catharsis and reflective self-awareness (Rickard & McFerran, 2015).

The purpose of the study is therefore not simply to compare musical preferences across genres. Greater emphasis is placed on how different forms of guided listening engagement shape emotional regulation, attentional focus, and interpretive experience among music students. By integrating perspectives from music cognition, mindfulness theory, music psychology, and reflective listening pedagogy, the study contributes to both the conceptual development of listening comprehension in music education and broader discussions of mental health support in higher education.

METHOD

The present study investigated whether structured listening comprehension activities could contribute to anxiety reduction among undergraduate music students. To examine this issue comprehensively, the research employed a mixed-methods approach that combined quantitative measurement with qualitative exploration. The study was designed not only to identify changes in anxiety levels following the intervention, but also to understand how participants experienced the listening process emotionally, cognitively, and reflectively.

Research Design

An embedded mixed-methods design was adopted, with the quantitative quasi-experimental component serving as the primary framework and the qualitative phase providing supportive explanatory detail. The qualitative phase was conducted after the completion of the intervention to provide a contextual interpretation of the statistical findings. Accordingly, the study should not be interpreted as a fully concurrent mixed-methods design in which both data types are collected and analyzed simultaneously. Instead, qualitative evidence was used to deepen understanding of the emotional, attentional, and interpretive experiences emerging from the listening intervention.

A quasi-experimental pretest-posttest design was selected because random assignment and full experimental control were not feasible within the university setting. Although the design did not permit complete control over all external variables, it nevertheless allowed systematic examination of changes in anxiety levels before and after participation in the intervention across the three musical genre conditions.

Participants

The participants consisted of 60 undergraduate music students enrolled in a university music program. Participants

ranged in age from 18 to 25 years and were recruited through purposive sampling based on several inclusion criteria. To participate in the study, students were required to: (1) be enrolled in a music performance course, (2) report experiences of performance-related anxiety, (3) obtain a score of 30 or above on the Kenny Music Performance Anxiety Inventory (K-MPAI), and (4) commit to participating in all intervention sessions and follow-up activities.

Efforts were made to maintain diversity in gender, musical background, and cultural experience to strengthen the relevance and representativeness of the findings.

Participants were assigned to one of three intervention groups representing different musical genres: (1) classical music group ($n = 20$), (2) jazz music group ($n = 20$), and (3) Popular music group ($n = 20$).

Instruments

Several instruments were employed to collect both quantitative and qualitative data throughout the study.

State-Trait Anxiety Inventory (STAI)

Anxiety levels were measured using the State-Trait Anxiety Inventory (STAI) developed by Spielberger et al. (1983). The instrument was administered before and after the intervention to assess changes in anxiety levels across the intervention period. The STAI was selected because of its extensive application and established reliability in psychological and educational research involving anxiety assessment.

Reflective Listening Journals

Participants completed reflective listening journals during the intervention period. These journals documented emotional reactions, attentional experiences, interpretive observations, and personal reflections associated with the listening sessions. The journals also provided evidence of participants' ongoing engagement with the structured listening activities.

Semi-Structured Interviews

Following the intervention, semi-structured interviews were conducted to explore participants' experiences in greater depth. Interview questions focused on emotional responses, attentional engagement, interpretive understanding, genre preferences, perceived therapeutic effects, and challenges encountered during the listening process.

Operationalization of Listening Comprehension

Listening comprehension in the present study was not operationalized as passive auditory exposure. Instead, it was conceptualized as an active and reflective process involving emotional, cognitive, and interpretive engagement with music.

The construct was examined through several observable indicators, including: sustained attentional focus on musical elements such as melody, rhythm, harmony, tempo, and dynamics; interpretive processing of expressive and emotional musical characteristics; reflective awareness of emotional responses emerging during listening activities; and analytical engagement demonstrated through written reflections and verbal responses to guided prompts.

Listening engagement was therefore not inferred solely from exposure duration. Rather, participants' comprehension processes were identified through reflective journals, guided discussion responses, emotional self-reports, and analytical observations collected throughout the intervention period. These procedures were intended to capture how participants actively interpreted and responded to musical experiences, rather than merely passively hearing the music.

Intervention Procedures

At the beginning of the study, participants completed the STAI pretest and provided demographic information related to musical background, performance experience, and listening habits.

The intervention was conducted over four weeks. Participants attended daily

20-minute guided listening sessions according to their assigned genre group.

The musical selections included: Classical music: works characterized by stable harmonic structures and slower tempos, including Debussy's *Clair de Lune*; Jazz music: compositions emphasizing rhythmic complexity and improvisation, including Brubeck's *Take Five*; and Popular music: emotionally expressive songs emphasizing lyrical and autobiographical meaning, including Adele's *Someone Like You*.

During each session, participants responded to structured listening prompts designed to encourage active engagement with musical features and emotional reflection. These activities included identifying melodic, rhythmic, harmonic, and dynamic changes; reflecting on emotional shifts experienced during listening; describing personal interpretations of musical expression; and connecting musical experiences with personal memories or psychological states.

The activities were adapted from reflective listening practices in music education and mindfulness-based listening approaches, emphasizing intentional attention and interpretive awareness.

Following completion of the intervention, participants completed the STAI posttest and participated in semi-structured interviews.

Data Analysis

Quantitative data were analyzed using descriptive and inferential statistical procedures. The descriptive analysis included the mean anxiety-reduction scores, standard deviations, confidence intervals, and sample distributions across groups. A one-way analysis of variance (ANOVA) was conducted to determine whether there were statistically significant differences in anxiety-reduction outcomes among the three musical genre groups. The effect size was calculated using eta squared (η^2) to determine the magnitude of the intervention effect. Subsequently, a post hoc analysis using Tukey's Honestly Significant Difference

rence (HSD) test was performed to identify statistically significant pairwise differences between groups.

The classical music group demonstrated the highest mean reduction in anxiety levels, whereas the popular music group showed the smallest reduction.

To examine whether the differences in anxiety reduction between groups were statistically significant, a one-way Analysis of Variance (ANOVA) was conducted.

The ANOVA results indicated a statistically significant difference in anxiety reduction across the musical genre groups, $F(2, 57) = 51.80, p < .001$.

The effect size was substantial ($\eta^2 = .645$), indicating that approximately 64.5% of the variance in anxiety reduction was attributable to differences across musical genre conditions.

A Tukey's HSD (Honestly Significant Difference) post-hoc analysis was subsequently conducted to determine which genre groups differed significantly from one another.

The post hoc analysis demonstrated that classical music produced a significantly greater reduction in anxiety than

both jazz and popular music. Jazz music also produced significantly greater anxiety reduction than popular music

Regression Analysis: Depth of Listening Engagement

To further examine the relationship between listening engagement and anxiety reduction, a regression analysis was conducted with "depth of interaction" as the predictor. The construct was not treated as a simple exposure duration. Instead, it was operationalized through reflective journals, guided listening responses, emotional self-reports, attentional observations, and analytical engagement during intervention activities.

To capture the depth of participants' engagement during the listening sessions, a composite interaction score was constructed based on four complementary dimensions of engagement. These dimensions comprised sustained attentional focus on musical elements, interpretive processing of expressive characteristics, reflective awareness of emotional responses, and analytical engagement with the structured listening prompts. Each di-

Table 1. Descriptive Statistics of Anxiety Reduction by Music Genre

Music Genre	n	Pretest Mean (SD)	Posttest Mean (SD)	Mean Reduction	SD	95% CI Lower	95% CI Upper
Classical	20	58.45 (4.12)	46.79 (3.85)	11.66	1.92	10.82	12.50
Jazz	20	57.90 (4.34)	50.43 (4.01)	7.47	1.94	6.62	8.32
Popular	20	58.10 (4.27)	52.15 (3.96)	5.95	1.64	5.23	6.67

Table 2. ANOVA Results for Anxiety Reduction

Source	SS	df	F	P
Music Genre	349.86	2	51.80	< .001
Residual	192.47	57	—	—

Table 3. Post-Hoc Comparison Analysis (Tukey's HSD)

Comparison	Mean Difference	p	95% CI Lower	95% CI Upper	Significant
Classical vs Jazz	-4.19	< .001	-5.59	-2.79	Yes
Classical vs Popular	-5.71	< .001	-7.11	-4.31	Yes
Jazz vs Popular	-1.52	.029	-2.92	-0.12	Yes

mension was assessed using a five-point engagement rubric completed after the listening sessions, and the resulting scores were combined to produce a composite measure for the regression analysis.

To determine whether the depth of listening interaction predicted anxiety reduction, the composite score was analyzed using regression analysis, as presented in Table 4.

Table 4. Regression Analysis Predicting Anxiety Reduction

Predictor Variable	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>P</i>
Depth of Interaction	1.84	0.29	.71	6.34	< .001

The regression results did not suggest that anxiety reduction occurred independently of participant engagement. Rather, depth of listening interaction significantly predicted reductions in anxiety levels, $\beta = .71$, $p < .001$, indicating that participants demonstrating higher levels of reflective and interpretive engagement experienced greater therapeutic benefits.

Qualitative Analysis

Qualitative data obtained from interviews and reflective journals were analyzed using thematic analysis following Braun and Clarke's (2006) framework. The analysis involved repeated reading of transcripts, coding of recurring patterns, theme development, and interpretive synthesis.

The qualitative findings were not treated as separate outcomes independent from the quantitative analysis. Instead, they were used to deepen the interpretation of the statistical findings by illustrating how participants experienced the listening intervention emotionally, cognitively, and reflectively.

The analysis identified three major and interrelated themes: emotional regulation, cognitive engagement, and personal connection with music. The qualitative findings were not treated as outcomes separate from the quantitative analysis; rather,

they were used to deepen the interpretation of the statistical results by illustrating how participants experienced the listening intervention emotionally, cognitively, and reflectively

Ethical Considerations

The study followed established ethical guidelines for research involving human participants. All participants provided informed consent before participation. Confidentiality and anonymity were maintained throughout the research process, and participants retained the right to withdraw from the study at any stage without penalty.

Because the study addressed anxiety-related experiences, psychological support services were made available if participants experienced emotional discomfort during or after participation in the intervention.

DISCUSSION

The findings of this study suggest that structured listening comprehension activities can meaningfully contribute to anxiety reduction among undergraduate music students. Yet the outcomes cannot be explained simply by assuming that music itself automatically produces therapeutic effects. What emerged more clearly from the data was the importance of reflective and guided engagement with music. Anxiety reduction appeared to develop through interconnected processes involving emotional regulation, focused attention, interpretive reflection, and active cognitive participation during listening experiences.

A central contribution of the study lies in the way listening comprehension was reconceptualized within music education. Rather than adopting a language-based understanding of comprehension as the decoding of verbal meaning, the study approached listening as a multidimensional process of musical meaning-making. Participants were not merely exposed to sound; they actively interpreted musical

structure, monitored their emotional responses, and reflected on the expressive qualities embedded in the listening experience. In this sense, listening comprehension functioned as an interpretive practice grounded in cognition, emotion, and reflective awareness.

This perspective aligns closely with scholarship in music cognition, suggesting that listening involves predictive processing and interpretive organization rather than passive sensory reception (Koelsch, Vuust, & Friston, 2022). Similar connections can also be observed in research on reflective and mindful listening, where musical engagement is understood as intentional, attentive, and emotionally responsive (Oliveros, 2005; Wiggins, 2015). The present findings extend these theoretical discussions by demonstrating how such forms of listening may also support psychological well-being within educational settings.

The quantitative findings revealed reductions in anxiety across all three listening conditions, although the degree of reduction varied by musical genre. Participants exposed to classical music demonstrated the largest decrease in anxiety scores. Several characteristics commonly associated with classical music may help explain this outcome, including harmonic stability, slower pacing, balanced phrasing, and structural continuity. Participants frequently described experiences of calmness, mental steadiness, and emotional restoration during these sessions.

Importantly, these responses should not be interpreted as evidence that classical music universally produces relaxation. The qualitative findings indicate that participants were actively engaged with the music's emotional pacing and structural flow throughout the listening process. Emotional regulation, therefore, appeared to emerge not from passive calming effects alone, but from sustained attentional focus and reflective immersion in musical structure.

A different pattern emerged in the jazz condition. Although the anxiety

reduction was smaller than in the classical group, participants consistently described heightened concentration, attentional alertness, and interpretive engagement. The rhythmic variation and improvisational complexity characteristic of jazz appeared to demand continuous cognitive processing. Rather than calming the mind through predictability, jazz listening redirected attention away from anxious rumination by sustaining mental engagement with shifting musical patterns.

This finding suggests that anxiety reduction may also arise through cognitively stimulating forms of listening. In the jazz condition, participants often described the experience as mentally absorbing rather than emotionally soothing. The therapeutic value of jazz, therefore, seemed connected to attentional redirection and interpretive flexibility rather than relaxation alone.

The popular music condition produced comparatively smaller reductions in anxiety, yet participants reported strong emotional identification with lyrical themes and personal memories. Listening experiences in this group frequently involved autobiographical reflection, emotional release, and recognition of personal experiences within the music itself. For many participants, the significance of popular music depended less on formal musical structure and more on subjective emotional resonance.

These responses highlight another important dimension of listening comprehension: personal meaning-making. Participants did not simply analyze musical elements; they connected songs to relationships, memories, and emotional states. Consequently, listening became a reflective process through which individuals interpreted both the music and aspects of their own emotional experiences.

Taken together, the findings reinforce the argument that listening comprehension in music education cannot be reduced to auditory recognition or passive exposure. Instead, it should be understood as a layered process involving emotional inter-

pretation, attentional regulation, aesthetic awareness, and reflective cognition. The study, therefore, broadens existing discussions of listening within music education by positioning reflective listening as both a pedagogical practice and a psychologically meaningful activity.

Methodologically, the study also contributes by clarifying how listening comprehension may be operationalized within music education research. Listening was not measured solely through duration of exposure. Instead, the intervention incorporated guided prompts, reflective journals, analytical observations, and emotional self-reports to capture participants' active engagement with musical experiences. This approach helped address conceptual ambiguity surrounding listening comprehension by identifying observable indicators of reflective and interpretive listening behavior.

The integration of quantitative and qualitative findings further strengthened the interpretation of the results. Statistical reductions in anxiety were consistently supported by participant narratives describing emotional stabilization, cognitive focus, reflective awareness, and shifts in attentional engagement during listening sessions. Combining both forms of evidence, therefore, provided a more comprehensive understanding of how structured listening activities may influence psychological well-being among music students.

Several practical implications emerge from these findings. Within music education, structured listening activities may function not only as tools for musical understanding but also as accessible strategies for emotional support and attentional development. Reflective listening exercises could therefore be incorporated into performance training, classroom instruction, and student wellness initiatives.

The findings additionally suggest that musical genres support different forms of emotional and cognitive engagement. Classical music may facilitate emotional stabilization and sustained attentional continuity. Jazz may encoura-

ge cognitive flexibility and interpretive concentration, while popular music may promote autobiographical reflection and emotional catharsis. These distinctions indicate that genre selection in therapeutic or educational contexts should be approached thoughtfully rather than treated as universally interchangeable.

Several limitations should nevertheless be acknowledged. The sample was relatively small and restricted to undergraduate music students from a single institutional setting, limiting the generalizability of the findings. The intervention also lasted only four weeks, making it difficult to evaluate longer-term psychological effects. In addition, emotional responses to music are shaped by personal preference, cultural background, and individual listening histories, variables that were not explored extensively within the present research.

Future studies may therefore benefit from larger and more diverse participant populations, longitudinal research designs, and broader exploration of musical genres and listening environments. Additional investigation could also examine whether reflective listening practices influence academic performance, creativity, emotional resilience, or sustained concentration among music students over time.

Overall, the study supports the view that structured reflective listening functions as more than passive music exposure. Listening comprehension emerged as an active interpretive process involving emotional, cognitive, and attentional engagement with musical experience. In doing so, the findings contribute to ongoing interdisciplinary discussions connecting music cognition, mindfulness-based listening, emotional regulation, and pedagogical practice within music education.

CONCLUSION

The present study demonstrates that structured listening comprehension activities may contribute meaningfully to anxiety reduction among undergraduate music students while also supporting emotional

regulation, attentional focus, and reflective engagement. Across all three musical genre conditions, participants reported measurable psychological benefits alongside deeper forms of musical awareness and interpretive involvement.

A major contribution of the study lies in its reconceptualization of listening comprehension within music education. Rather than treating listening as passive auditory reception or limiting comprehension to language-based models of decoding meaning, the study approached listening as an active interpretive process shaped through emotional reflection, focused attention, and cognitive engagement with musical structure. Participants interacted with music not simply as listeners, but as interpreters actively constructing meaning from musical experience.

The findings further indicate that different musical genres may encourage distinct forms of emotional and cognitive engagement. Classical music was associated most strongly with emotional stabilization and sustained attentional calmness, jazz listening encouraged interpretive concentration and cognitive flexibility, and popular music promoted autobiographical reflection and emotional identification. Although all three genres contributed to anxiety reduction, the qualitative findings suggest that the underlying mechanisms of engagement differed across listening conditions.

Importantly, the results suggest that the therapeutic value of listening activities may depend less on music exposure alone and more on the reflective processes accompanying the listening experience. Guided prompts, emotional awareness, attentional focus, and interpretive engagement appeared to shape how participants responded psychologically to music throughout the intervention period.

The study also contributes methodologically by demonstrating practical ways to operationalize reflective listening within music education research. Through the integration of reflective journals, guided

listening activities, interviews, and anxiety measures, the research captured listening as an observable process involving emotional, cognitive, and interpretive dimensions rather than simple exposure duration.

Several limitations nevertheless remain. The study involved a relatively small sample drawn from a single institutional context, and the intervention period was limited to four weeks. Individual musical preference, cultural background, and prior listening experience may also have influenced participants' responses in ways not fully explored within the present research.

Future studies may therefore benefit from broader participant populations, longitudinal research designs, and examination of additional musical genres and listening environments. Further investigation could also explore how reflective listening practices influence creativity, concentration, academic performance, and emotional resilience within music education settings.

Overall, the findings support the view that structured reflective listening functions as more than passive engagement with sound. Listening comprehension ultimately emerged as an interpretive practice shaped by emotional awareness, attentional regulation, aesthetic engagement, and personal meaning-making. In this sense, reflective listening may hold value not only as a pedagogical activity within music education, but also as an accessible form of psychological support for students navigating the emotional demands of musical training.

ACKNOWLEDGEMENT

The authors gratefully acknowledge the participation of the undergraduate music students who contributed to this study. The authors also extend appreciation to colleagues and faculty members for their valuable support during the research process. No external funding was received for this study.

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