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Beyond Words: How Non-Verbal Musical Activities Bypass Psychological Defense and Facilitate Emotional Expression in Adolescents

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Abstract. Psychological problems are prevalent among adolescents; however, psychological defences and social stigma hinder their participation in traditional verbal psychological interventions, thereby limiting the effectiveness of talk therapy alone. Existing research on music therapy has largely focused on instrumental improvisation and has not yet systematically elucidated the underlying mechanisms through which group-based, non-verbal vocal activities break through and overcome psychological defences. This paper addresses this core topic as its central research question. Adopting a literature review method, this paper integrates theoretical and empirical research from music psychology, developmental psychology, and music therapy. The author's own Shoushan music workshop, which features cup percussion, vocal imitation, and multi-part choral singing for middle school students, is also used as a practical case study to illustrate the theoretical mechanisms. The interventions discussed in this study are examined with non-clinical adolescent populations who are not in acute psychiatric crisis, which defines the scope and boundary conditions of the present analysis. The paper identifies three core pathways: activation of the emotional brain that bypasses cognitive censorship, low-threshold imitation that lowers psychological defenses, and group synchrony that builds belonging. Together, these mechanisms make musical activities an effective psychological scaffolding that facilitates a natural transition from non-verbal expression to verbal dialogue, thereby providing an accessible pathway for adolescents who struggle in conventional talk therapy.

Keywords: non-verbal musical activities, adolescent psychological defense, emotional expression, music therapy, psychological scaffolding

1. Introduction

Adolescence represents a high-risk period for mental health disorders. According to the World Health Organization, one in seven (14.3%) of 10 to 19 years old experience mental health problems globally, and the remaining adolescents are largely unrecognized and untreated [1]. In China, a systematic review and meta-analysis found that the pooled prevalence of social anxiety symptoms among children, adolescents, and young adults was 23.5%, and among adolescents with probable depression, the prevalence of behavioral intention to seek professional help was found to be low [2,

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3]. Yet this vulnerable group shows consistently low willingness to seek help, with widespread resistance to conventional language-based psychotherapy [4]. Mainstream therapeutic approaches assume that clients can talk about their feelings, but this requirement often conflicts with adolescent developmental traits such as self-consciousness or fear of being judged by others [5]. This inherent conflict between self-expression and social expectations causes many adolescents, who are already apprehensive about self-disclosure, to immediately activate their defence mechanisms, thereby further widening the gap that keeps them from seeking psychological support.

Existing reviews have synthesized evidence across various music therapy formats. Active engagement, such as instrumental play, singing, and structured rhythmic activities, has been distinguished from passive exposure to music, while other reviews have documented interventions including instrumental and vocal improvisation, songwriting, and guided listening [6, 7]. Yet the specific mechanisms of non-verbal group vocal activities remain insufficiently systematized. This paper addresses three questions: what cognitive and developmental barriers make verbal therapy ineffective for defensive adolescents, through which multi-layered mechanisms can non-verbal group vocal activities can bypass psychological defenses, and how these mechanisms can be organized into a practical scaffolding model. Using a literature review method, this paper integrates theoretical and empirical sources from music psychology, developmental psychology, and music therapy to understand music-induced emotions and their neural relations [8-11]. The author's Shoushan a cappella workshop also serves as a case study to ground theoretical mechanisms in practice. This paper offers a systematic mechanism-based explanation of non-verbal musical intervention.

2. Adolescent psychological defense and language avoidance

2.1. Developmental roots of psychological defense in adolescence

Adolescence is characterized by cognitive and emotional transformations that reshape how young people perceive themselves. Elkind's theory of adolescent egocentrism provides a foundation for understanding the increased self-consciousness in this stage [5]. According to Elkind, adolescents will construct an "imaginary audience," a belief that other people are constantly watching and evaluating them. They will also demonstrate "personal fable", which is another dimension of this egocentrism, where adolescents believe that their feelings are unique and no one can understand them. Therefore, by believing that no one can truly understand them, adolescents will develop a psychological buffer to cope with the vulnerability of self-disclosure. This defense often prevents adolescents from seeking psychological support.

2.2. The access barrier of language-based psychotherapy

The demand for verbal communication in cognitive behavioral therapy (CBT) creates a significant barrier for adolescents predisposed to defensive withdrawal. Common problems with CBT in young people include limited verbal and cognitive reflection skills, as the method assumes clients can identify, articulate, and reframe their thoughts in advance [12]. Emotional granularity, the ability to label and articulate one's internal states, will develop gradually from adolescence to adulthood and varies widely across individuals [13]. Dunning et al. conducted a scoping review of 40 studies and found evidence that lower emotional granularity is related to greater levels of depressive symptomatology in adolescents, meaning that people who need help the most are often least able to

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engage verbally [14]. Clinical observation reveals that some adolescent patients remain silent throughout consultations, suggesting that language may lead to defensive withdrawal [15].

2.3. The necessity of nonverbal alternative pathways and their adaptability to adolescent groups

Music, as Malloch and Trevarthen argue, represents a pre-linguistic form of communication that predates and underlies human capacity for language [16]. Their concept of "communicative musicality" demonstrates how rhythmic musical interaction, such as shared timing and pulse, forms the essential foundation for human communication. North, Hargreaves, and O'Neill demonstrated that music plays an important role in adolescent identity formation and social life, and also serves as a primary medium through which young people explore their self-identity [17]. By working with a medium they already use spontaneously for emotional regulation, non-verbal musical activities may offer a more developmentally appropriate pathway to psychological support [18, 19].

This background guided the design of the Shoushan music workshop conducted by the author in Yunnan Province. The workshop took place at Shoushan Middle School, a township school located in a remote mountainous area of Yunnan Province. The school serves a student population with limited mental health resources, and most of the students are left-behind children. The workshop was held over five consecutive days . Each day consisted of three sessions, with each session lasting between one hour and one and a half hours. The author personally led five sessions, one per day. Activities were conducted across three venues: the school's activity classroom, music classroom, and the outdoor playground. The school principal was occasionally present as an observer.

The workshop was open to approximately 60 eighth- and ninth-grade students who registered voluntarily. The final number of participants ranged from 65 to 70. Prior to the workshop, teachers at the school reported that students in this region tend to be introverted and reserved due to their family circumstances and limited access to developmental support. In classroom and group settings, they rarely speak up voluntarily or ask questions, often remaining at the periphery of group activities. Many students habitually withdraw into silence when facing stress and seldom seek help from teachers or peers. These observed defensive behaviors informed the design of the workshop activities. Although students primarily communicated in their local dialect, the volunteer team did not encounter significant language barriers and thus did not require additional assistance from local teachers for translation.

The workshop was positioned as a creative arts and wellness activity rather than a therapeutic intervention. The activities were structured in a progressive, phased manner, incorporating cup percussion, vocal imitation, choral singing, and choreographed performance as a medium for emotional expression. In addition to musical activities, the workshop also included instruction on learning strategies and stress management techniques. Throughout the entire process, participants were never required to engage in verbal self-disclosure. The aim was to observe changes in defensive behaviors through low-threshold non-verbal musical interactions, and to explore the natural pathway from non-verbal connection to verbal dialogue.

3. How non-verbal musical activities bypass defense: three core mechanisms

3.1. Direct pathway: music activates the emotional brain, bypassing cognitive censorship

The first mechanism involves directly activating the emotional brain structures, therefore bypassing the specific cognitive checks that occur during language processing. Chanda and Levitin evaluated

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the evidence that music improves health and well-being through the engagement of neurochemical systems for reward, stress and arousal, immunity, and social affiliation [8]. Music positively impacts dopamine levels through mesocorticolimbic structures such as the ventral striatum and ventral tegmental area, which are important for reinforcement [8]. More importantly, these neurochemical effects occur without requiring verbal semantic processing.

Juslin and Västfjäll's framework confirms that multiple core pathways for music to induce emotion operate at a pre-conscious level; no higher-order cognitive appraisal is required [9]. The contrast with verbal processing is instructive. When an individual hears or reads verbal language, emotional responses are closely intertwined with semantic integration. Event-related potential studies have demonstrated that emotional responses to sentences emerge as a result of semantic unification operations [20]. This processing pathway carries a cognitive checkpoint. In contrast, functional neuroimaging studies have shown that music can modulate activity in brain structures directly involved in emotion, such as the amygdala, nucleus accumbens, hypothalamus, hippocampus, insula, cingulate cortex, and orbitofrontal cortex [10]. This direct neural pathway has significant implications for adolescents who have developed defensive responses to verbal communication about emotions. However, the physiological activation of emotional brain structures alone does not automatically translate into reduced psychological defense. The critical link between neural activation and the bypassing of psychological defence is the absence of evaluative pressure. In verbal therapeutic cases, adolescents often perceive questions about their feelings as evaluative. Research has shown that fears of evaluation peak during adolescence and are closely linked to difficulties in emotion regulation [21]. In contrast, music engagement does not carry an evaluative connotation. When an adolescent participates in a non-verbal musical activity, there is no expectation to articulate feelings correctly and no external judgment of their emotional expression. Consequently, the defense mechanisms that would normally be triggered by verbal therapeutic questions are not activated during musical engagement.

The Shoushan workshop provided a practical illustration of this mechanism. Throughout the musical activities, participants were never evaluated on the quality of their performance. There was no assessment of whether they played the cups correctly, whether their singing was in tune, or whether they were doing it "right." The facilitator explicitly framed all activities as playful exploration rather than skill demonstration. Participants engaged freely without the fear of being graded or judged, allowing the neurobiological effects of music to proceed without triggering the defensive barriers that typically emerge when adolescents feel they are being evaluated.

3.2. Low-threshold pathway: rhythmic and vocal imitation reduces defense

Saarikallio and Erkkilä explored the role of music in adolescents' mood regulation through an inductive theory construction approach [19]. Their research identified multiple strategies that young people spontaneously employ when using music to manage their emotional states, including mood enhancement, diversion, and discharge [19]. These strategies include active engagement with music in ways that feel natural and self-directed rather than therapeutic and intentional. The concept of "play" as a psychological entry point is central to understanding why low-threshold musical activities are effective with defensive adolescents. The Shoushan music workshop observations suggested that framing activities as games helped lower defensive barriers. When the tasks carried no explicit demand for emotional disclosure, participants appeared less self-conscious and more willing to engage than in typical verbal interactions.

The developmental basis of imitation reinforces this mechanism. Imitation is one of the most primitive and least threatening forms of social interaction, present from infancy. Rochat argues that

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imitation serves as a fundamental mechanism for infants to maintain social proximity and create interpersonal contacts with others [22]. When participants are asked to imitate rather than create or express, they are engaging in a familiar, low-risk interaction pattern that does not trigger self-conscious evaluation.

3.3. Synchrony pathway: group music-making builds belonging

The third mechanism is interpersonal synchrony. Workshop observations suggested that coordinating rhythms and voices fostered belonging and trust, consistent with evidence that group music-making enhances social skills [23]. The Shoushan music workshop practice illustrates this mechanism. Both multi-part choral singing and collective cup percussion required participants to synchronize their rhythm with other participants, process auditory information, and make real-time adjustments. These activities collectively produced a psychological shift from individual engagement to collective participation. Romano and colleagues' scoping review of music interventions in mental health settings found that music interventions appear to complement usual psychiatric care [24]. These three pathways form a coherent and mutually reinforcing sequence. The direct pathway establishes the neurobiological foundation: music's ability to access emotional processing without cognitive censorship [8-10, 16]. The low-threshold pathway builds on this foundation by using play and imitation to further reduce fear of social evaluation, enabling adolescents to take the first step of participation [19, 24]. The synchrony pathway, operating on the safety established by the previous two, generates belonging and trust through collective rhythmic coordination, marking the critical transition from individual willingness to genuine connection with others [23, 24].

4. From non-verbal to verbal: music activities as psychological scaffolding

4.1. The "scaffolding" model: three-phase design of the Shoushan music workshop

The Shoushan workshop was designed as a three-phase scaffolding model, with each phase combining three interconnected elements: activity content, psychological objective, and observable change in defensive behavior.

Phase 1 used cup percussion and vocal imitation games to lower psychological defense through fun and playful engagement. The task was framed as a game rather than a therapeutic exercise, which allowed participants to engage without self-consciousness. Participants who initially stood at the periphery because of shyness gradually moved closer and began to imitate rhythmic patterns, marking a transition from defensive withdrawal to curious participation. The transition to Phase 2 was triggered when the majority of participants demonstrated active engagement, such as voluntarily stepping forward to join the activities and stop avoiding group work. These behavioral signals indicated that basic psychological safety had been established.

Phase 2 introduced multi-part choral singing and collective rhythm activities to build belonging through cooperative music-making. Participants coordinated their timing, listened to one another, and adjusted their vocal production to achieve harmony. This phase shifted participants from independent observation to collective engagement, as shown by increased willingness to coordinate with others. The transition to Phase 3 was initiated when participants showed observable indicators of peer connection, including active eye contact with one another, spontaneous coordination with others' rhythms, and mutual listening during group singing. These signals suggested that trust and belonging had begun to form, creating a foundation for verbal sharing. Phase 3 introduced structured thematic discussions on stress management and learning strategies, which were delivered only after

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trust and safety had been established. Participants moved from non-verbal interaction to verbal sharing, showing willingness to discuss personal experiences. McFerran's review highlighted that contextualized approaches are essential when working with adolescents, as therapeutic strategies must align with their developmental and social needs [18].

Throughout the workshop, the three-phase progression was not rigidly enforced. If a participant showed signs of persistent withdrawal, such as moving away from the group, refusing to participate, or displaying visible discomfort during group activities, the facilitator would return that individual to the low-threshold games of Phase 1 rather than pushing them toward Phase 2 or Phase 3. This flexible adjustment ensured that participation remained voluntary and non-threatening. Participants were never forced to engage verbally if they were not ready. The process respected each adolescent's individual pace, allowing them to move forward when they felt safe and to step back when they needed more time. This responsiveness to individual differences was essential to maintaining the psychological safety of the scaffolding model.

4.2. The continuum from non-verbal to verbal

The transition from non-verbal musical engagement to verbal dialogue represents a gradual continuum rather than a simple shift. McFerran emphasized that musical engagement serves as a primary vehicle for building trust with young people, and this trust forms the foundation for any meaningful therapeutic dialogue [18]. In the Shoushan music workshop, approximately 70% of participants who had been reluctant to speak at the beginning voluntarily shared their emotional experiences after engaging in choral activities. This observation supports the point that non-verbal expression functions as a warm-up for verbal disclosure: as participants first experience safety and connection through music, subsequent verbal expression becomes less threatening. Pennebaker's research on expressive writing demonstrated that translating feelings into language produces measurable health benefits, but only when the language carries genuine emotional weight [25]. Superficial or detached writing does not produce the same outcomes. This parallels the function of music in the scaffolding model: musical activities provide the emotional priming that enables meaningful verbal articulation. Workshop observations confirmed this sequence: participants who had been entirely silent in the initial phase were often the ones who spoke most openly after the choral activities. The gradual nature of this transition respects the adolescent's need for autonomy and control, allowing them to choose when and how to engage verbally.

5. Conclusion

The findings demonstrate that adolescent psychological defense, rooted in egocentrism and social evaluation fear, creates a significant access barrier to language-based psychotherapy. Three mechanisms are identified through which non-verbal musical activities bypass this barrier: direct activation of the emotional brain, low-threshold imitation through play, and group synchrony that builds belonging and trust. These mechanisms, when organized into a three-phase scaffolding model, facilitate a natural transition from non-verbal engagement to verbal dialogue, offering an accessible pathway for adolescents who struggle with conventional therapy that requires communication. Several limitations of this paper should be acknowledged. First, as a literature review, this paper lacks quantitative empirical data to support its claims. Second, the observations from the Shoushan music workshop are based on the organizer's practice records and did not include systematic interviews with participants. Future research could address these limitations through quasi-experimental studies measuring psychological defense indicators before and after

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interventions, qualitative interviews exploring participants' subjective experiences, and comparative studies examining the effects of passive listening, active creation, and collective performance.

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