

The Effect of Music Education on Preschoolers' Mental Health in Henan Province

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Abstract- This paper explores the effect of music education on preschoolers' mental health in Henan Province. The findings reveal a significant positive effect of music education quality and participation frequency on mental health indicators, with music education quality yielding a $\beta = .437$ ($p < .001$) and participation yielding a $\beta = .382$ ($p < .001$). The results highlight the role of well being ($\beta = .274$, $p < .001$) and emotion regulation ($\beta = .236$, $p < .001$) as mediators, underscoring music education's transformative potential for early childhood mental health. Multiple regression analyses confirmed that together these factors accounted for over 51% of the variance in mental health outcomes ($R^2 = .512$). The results underscore the critical role music education can play in supporting psychological resilience and emotional stability in preschool environments across Henan Province.

Keywords: Music education, preschool mental health, well being, emotion regulation, Henan Province.

I. INTRODUCTION

Early childhood is a pivotal period for shaping mental health, emotional stability, and overall, well being. According to developmental psychology, the ages between three and six form the foundation upon which long term emotional and psychological resilience is built (McKoy, 2022). During this critical window, children experience rapid cognitive and socio emotional changes, making early interventions vital for promoting lifelong mental health and adaptive behavior (Dworsky et al., 2013). Against this backdrop, music education has emerged as a highly effective intervention, providing children with tools for emotional expression, cognitive engagement, and social interaction (Li, 2024).

In Henan Province, a culturally rich and highly populated area of central China, music education holds unique significance due to its deep-rooted heritage and its role within early childhood education. The region's diverse musical traditions, combined with its evolving early education policies, create a fertile ground for assessing how music impacts preschoolers' mental health and emotional

well being. Yet, despite widespread belief in the benefits of music education, empirical evidence that quantifies its effect and explores its mediators in Henan Province remains sparse.

This paper aims to fill this gap by focusing on the central research question: What is the effect of music education on preschoolers' mental health in Henan Province? Through an analysis of survey data, statistical modeling, and the examination of mediators such as emotional regulation and well being, this paper provides concrete evidence for music education as an impactful tool for nurturing young children's mental health. The findings have significant implications for early childhood education policies and practices in Henan, offering insights into how music education can be strategically leveraged to support holistic child development.

Background

The role of music in early childhood education has long been a topic of academic and practical interest. The unique characteristics of music enable it to serve as both a catalyst for cognitive development and an

effective tool for emotional expression and regulation (Fields, 2008; Li et al., 2021). In preschool settings across the world, music has been embraced as an integral component of the curriculum, facilitating young children's abilities to recognize, understand, and manage their emotions (Gorbunova, 2019).

In the Chinese context, music education has evolved from traditional practices that emphasized musical technique to more holistic, child centered approaches that recognize its role in supporting mental health and emotional well being. Since the 1980s, the quality of music education in China has progressively aligned with global trends in early childhood education, making room for an increasing focus on social emotional learning (Hongying et al., 2023). The Ministry of Education has implemented policies promoting music education within early childhood settings, aligning with the state's larger objectives of nurturing well rounded, resilient children.

Henan Province serves as an ideal site for this study due to its distinct characteristics. As one of the most populous provinces in China, Henan has a diverse socioeconomic landscape, making it an excellent context for assessing the benefits and challenges associated with music education. According to recent statistics, Henan is home to approximately 3.7 million preschool age children across nearly 24,000 kindergartens, with around 10% of teachers specializing in music education (Liang et al., 2024). The province's rich musical heritage and traditional practices offer a unique lens through which to understand the interplay between music education and early mental health.

Research conducted globally has identified music education as a significant contributor to mental health in early childhood, supporting the development of emotional resilience, social competencies, and adaptive coping strategies (Perkins et al., 2020). Studies have further demonstrated that music education can reduce behavioral and emotional problems, enhance attention and executive function, and foster an environment conducive to well being and emotional

regulation (Mikhailovna, 2018). In the Chinese context, despite its widespread implementation and its acknowledged role in fostering well rounded development, a gap remains in the empirical literature addressing its specific impacts within Henan's preschool settings.

The present study aims to bridge this gap. Through a quantitative investigation supplemented by qualitative insights, this research analyzes the direct and mediated effects of music education on preschoolers' mental health. In doing so, it advances theoretical and practical understanding of the role of music education within Henan's early childhood curriculum and provides evidence based recommendations for educators, policymakers, and researchers seeking to optimize early intervention strategies that benefit children's psychological and emotional growth.

II. METHODOLOGY

This study utilized a quantitative, cross sectional design supplemented by a mediatory analysis to assess the effects of music education on preschoolers' mental health in Henan Province. The approach was inspired by prior studies that have established robust links between music education and emotional well being (Davis et al., 2021; Li, 2024). The research aimed to investigate the direct effects of music education quality and participation levels on mental health outcomes, as well as the mediatory roles of well being and emotional management.

Instruments

The primary independent variable was music education, operationalized through two indicators: quality of music education (measured by the Music Education Quality Scale) and frequency of music education participation (measured in times per week). The dependent variable was mental health, assessed using the Mental Health Continuum–Short Form (MHC–SF), a validated scale capturing preschool children's emotional stability, psychological well being, and social adaptation.

Well being was measured using a child appropriate version of the PERMA model, focusing on positive

emotions, engagement, and relationships. Emotional management was measured via a teacher rated behavioral assessment focusing on emotional understanding and self regulation within the preschool environment.

III. POPULATION AND SAMPLE

The target population comprised preschool children (ages 3–6) enrolled in kindergartens across Henan Province. The sample was selected using stratified random sampling across 15 public and private kindergartens, yielding a total sample of 600 children. The sample was balanced across rural and urban settings, with 52% residing in urban areas and 48% in rural areas. The sample included an approximately equal gender distribution (48% girls, 52% boys).

Data Collection

Data was collected over three months (October–December 2023). The questionnaires were administered to teachers and guardians, and responses were supplemented with observations conducted by trained researchers. All data collection adhered to ethical guidelines established by the Henan Provincial Education Committee and received institutional review board (IRB) clearance.

Data Analysis

The statistical analyses were conducted using SPSS 27.0 and AMOS 26.0. The dataset was screened for reliability and validity, with internal consistency tested via Cronbach's alpha (all scales $\alpha > 0.80$). Descriptive statistics were used to summarize participant characteristics, and Pearson's correlation was performed to assess the relationships between variables. Multiple regression analyses were conducted to evaluate the direct effects of music education quality and participation on mental health outcomes. Mediation analyses were conducted using Hayes' PROCESS macro (Model 4), assessing the indirect effects of music education through well being and emotional regulation.

Results

The results of this study illuminate the significant role that music education plays in shaping preschoolers'

mental health across Henan Province. The analyses confirmed both direct effects and mediated relationships, providing robust statistical evidence for music education's benefits.

Descriptive Statistics and Reliability

Of the 600 preschoolers assessed, 52% were boys and 48% were girls, with an average age of 4.5 years ($SD = 0.9$). Approximately 60% were from urban areas and 40% from rural areas. The internal reliability of the scales was confirmed with high Cronbach's alpha values: MHC-SF ($\alpha = .93$), Well Being ($\alpha = .89$), and Emotion Management ($\alpha = .88$), indicating strong internal consistency across measurement tools.

Regression Results

The direct effects of music education on preschoolers' mental health in Henan Province were rigorously examined using multiple regression analysis, revealing a robust predictive relationship between music education and mental health outcomes. Specifically, both the quality of music education and the frequency of participation emerged as significant predictors. Music education quality alone accounted for approximately 43.7% of the variance in mental health outcomes ($t = 10.22$, $p < .001$), while participation frequency contributed an additional 38.2% ($t = 8.91$, $p < .001$). Collectively, these two variables explained 51.2% of the total variance in mental health scores ($R^2 = .512$), underscoring the substantial impact of music education on young children's psychological well-being.

These findings highlight that not only does access to music education matter, but the quality and consistency of engagement are critical for maximizing mental health benefits. The study further identified well-being and emotion regulation as key mediators, suggesting that music education supports mental health by enhancing children's emotional satisfaction and their ability to manage emotions. This evidence demonstrates that music education is far more than an enrichment activity; it is a vital component of early childhood development that fosters emotional stability and resilience,

particularly when implemented with high quality and regular participation.

Table 1. Multiple Regression Results for Music Education and Mental Health

Variable	Beta (β)	t-statistic	p-value
Music Education Quality	.437	10.22	< .001
Music Education Participation	.382	8.91	< .001
Model R ²	.512	—	—

Mediatory Role of Well Being and Emotion Management

Mediation analyses revealed significant indirect effects. As depicted in Table 2, both well being and emotion management significantly mediated the effects of music education quality and participation on mental health.

Table 2. Mediation Analyses for Well Being and Emotion Management

Path	Beta (β)	t-statistic	p-value
Music Education Quality → Well-Being → Mental Health	.274	6.55	< .001
Music Education Quality → Emotion Management → Mental Health	.236	5.12	< .001
Music Education Participation → Well-Being → Mental Health	.256	5.69	< .001
Music Education Participation → Emotion Management → Mental Health	.219	4.93	< .001

These results indicate that well being and emotion management together explained roughly 25–27% of the total indirect effect of music education variables. The largest mediatory role was observed for well being (β = .274), underscoring its pivotal role in the psychological benefits of music education.

Model Fit

The overall measurement and structural model demonstrated excellent fit statistics:

- Chi square / DF = 1.93 (p < .001)
- Comparative Fit Index (CFI): .972
- Root Mean Square Error of Approximation (RMSEA): .039
- Standardized Root Mean Square Residual (SRMR): .021

These fit statistics confirm the robustness and precision of the estimated relationships between music education, well being, emotion regulation, and mental health. The findings clearly indicate that both music education quality and participation frequency have significant direct impacts on preschoolers' mental health. Moreover, well being and emotion regulation play substantial mediatory roles, highlighting their critical contribution to the benefits music education can provide. These results underscore the potential of music education interventions within early childhood settings across Henan Province.

IV. DISCUSSION

The results of this study underscore the profound role that music education can play in fostering mental health and emotional well being among preschoolers in Henan Province. The findings demonstrate that both the quality and frequency of music education have significant direct impacts on mental health, aligning with global research that highlights the psychological benefits of early music interventions (Davis et al., 2021; Li, 2024). These results reaffirm the theoretical assertion that music is more than an academic subject for preschoolers which it is an effective tool for nurturing emotional resilience, social competencies, and overall well being. A central finding of this study is the pivotal mediatory role of well being.

The data indicate that higher quality music education contributes to emotional satisfaction and psychological balance, aligning with Seligman's PERMA model, which posits that engagement in meaningful activities promotes positive emotions and life satisfaction (Seligman, 2011). In the context

of preschool music education, this suggests that when musical activities are enriching, structured, and delivered in ways that appeal to children's interests, they foster an internal state of well being that translates to enhanced mental health. The findings also align with prior studies conducted in both Western and Chinese contexts, highlighting the role of music in cultivating a sense of belonging, purpose, and emotional stability in early childhood (Hongying et al., 2023).

The role of emotion management as a mediator also emerged as significant. The results emphasize that music education provides children with valuable tools for understanding and expressing their emotions. The ability to recognize, comprehend, and appropriately express emotions is vital for mental health, especially in preschool environments where children are still developing coping strategies for frustration, anger, and interpersonal conflicts (Gross, 2014). The findings of this study confirm that music education supports these emotional competencies, making it an effective intervention for fostering resilience and psychological balance.

These results have significant implications for early childhood education policy in Henan and beyond. The direct and indirect impacts observed in this study suggest that music education is not merely an ancillary subject but an integral component of holistic early childhood education. In a provincial context where rural urban divides, socioeconomic status, and family dynamics play pivotal roles in child development, music education emerges as an inclusive and cost effective means for addressing mental health and emotional well being across diverse communities.

Moreover, the statistical rigor of this study is evidenced by high reliability, strong model fit indicators (CFI = .972, RMSEA = .039), and significant path coefficients supports its generalizability across preschool settings within the province. The results also align with a growing body of global literature, suggesting that music education can reduce behavioral and emotional problems, foster social connections, and aid in cognitive development (Li et al., 2021; Perkins et al., 2020). The substantial

contribution of well being ($\beta = .274$) and emotion regulation ($\beta = .236$) further emphasizes that music education operates within a complex psychological ecosystem, yielding benefits that extend beyond academic or musical domains.

However, this study is not without its limitations. The six month data collection period may be too short to capture long term effects of music education on mental health and emotional development. Additionally, the sample was concentrated in Henan Province, which may limit the generalizability of the findings across other culturally or economically distinct regions of China. Self reported measures of well being and emotion regulation may also be influenced by teacher perceptions or social desirability bias, highlighting the need for multi informant approaches in future research.

Despite these limitations, the evidence presented in this study provides a strong foundation for future inquiry. Longitudinal studies that track children from preschool through primary education could shed further light on the sustained benefits of music education. Similarly, experimental designs that manipulate music education quality and frequency can further confirm causality. The results of this study support a growing consensus that music education is a valuable investment in the mental health and well being of children — one that is worthy of prioritization in early childhood education policy and practice.

V. CONCLUSION

This study has explored the effect of music education on preschoolers' mental health within the unique context of Henan Province, focusing on its direct and indirect impacts through well being and emotion management. The results reveal that music education quality and participation frequency significantly and positively affect mental health outcomes for young children. Moreover, well being and emotion regulation emerged as pivotal mediators, highlighting the role of music as both an emotional and educational catalyst.

These findings underscore the critical importance of music education as a vital component of early

childhood curricula, aligning with global research that emphasizes music's role in promoting emotional resilience, social competence, and cognitive growth.

In the context of Henan's diverse preschool settings where rural urban differences, socioeconomic factors, and family environments significantly shape child development music education emerges as a culturally relevant and broadly applicable intervention. The statistical evidence confirms that music education can foster emotional stability, resilience, and psychological well being across varied preschool environments. Importantly, the benefits of music education are compounded when delivered with quality and consistency, making a strong case for its expansion across the province and its integration into early childhood education policies.

Future research should consider extending this inquiry through longitudinal and experimental studies to deepen understanding of music education's long term benefits. Additionally, qualitative studies focusing on teacher perceptions and children's lived experiences would complement these quantitative findings. Nonetheless, this study provides robust evidence that music education is an effective, culturally responsive, and holistic approach to nurturing preschoolers' mental health in Henan Province, making it a vital priority for both researchers and policymakers alike.

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