The Effectiveness of Rhythmic Cheerful Gymnastics in Improving Gross Motor Skills in Children with Intellectual Disabilities

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Abstract

Children with intellectual disabilities have cognitive limitations that affect their gross motor abilities, such as balance, coordination, and physical strength. Rhythmic cheerful gymnastics is a form of exercise that involves structured body movements performed to musical rhythms to develop gross motor skills. This study aims to examine the effectiveness of rhythmic cheerful gymnastics accompanied by songs in improving gross motor skills in children with intellectual disabilities using the Systematic Literature Review (SLR) method. Literature sources were obtained from various databases, including Google Scholar, Semantic Scholar, Research Rabbit, and Publish or Perish, using the keyword "effectiveness of cheerful gymnastics in improving gross motor skills of children with intellectual disabilities." Of the 14 articles found, 5 relevant studies were identified, analyzed, and systematically interpreted. The findings indicate that rhythmic cheerful gymnastics significantly improves the gross motor skills of children with intellectual disabilities, including enhancements in coordination, balance, muscle strength, and self-confidence. Therefore, rhythmic cheerful gymnastics has been proven effective and can be implemented as a physical intervention in adaptive physical education for children with intellectual disabilities in special schools (SLB).

Keywords: Intellectual Disability, Rhythmic Cheerful Gymnastics, Systematic Literature Review.

Introduction

Children with special needs (CSN) require specific interventions and targeted support to achieve optimal developmental outcomes. This necessity arises from the presence of developmental disorders or particular impairments that hinder their ability to reach their full potential without appropriate assistance. Such specialized services encompass multiple domains, including educational provisions that are carefully adapted to accommodate each child's individual characteristics and learning requirements (Gebrina Rezieka et al., n.d.).

One of the major categories within CSN is children with intellectual disabilities, characterized by significantly below-average intellectual functioning and concurrent deficits in adaptive behavior, particularly evident during the developmental period. As Park (2023) explains, these children face substantial academic barriers that necessitate modified curricula and specialized teaching strategies tailored to their specific needs. Their limitations also contribute to reduced environmental awareness and social participation, both within family and community contexts. Nonetheless, they are entitled to equitable access to quality education to ensure a meaningful and promising future comparable to that of typically developing peers (Maranata et al., 2023).

In this regard, adaptive physical education in special schools (Sekolah Luar Biasa—SLB) serves as a crucial component in addressing the educational and developmental needs of children with intellectual

disabilities. Through adaptive approaches, physical education teachers are able to design activities that enhance students' motor competence, coordination, and self-confidence, while aligning these activities with each child's abilities. The overall aim of adaptive physical education is to promote physical fitness and gross motor development, enabling children with special needs to actively engage in daily life activities (Manggau & Usman, 2020).

Empirical evidence supports the effectiveness of structured exercise programs in this context. Manggau and Usman (2020) demonstrated that rhythmic gymnastics significantly improves gross motor abilities among children with disabilities. Regular and structured participation not only enhances physical outcomes but also fosters greater engagement and overall life satisfaction. Similarly, Anggraini et al. (2023) found that rhythmic movement interventions effectively reduce Body Mass Index (BMI) among children with obesity who are typically less active. These findings suggest that adaptive physical education may serve as a multidimensional approach—improving not only motor coordination but also promoting physical health and psychological well-being (Ren & Ma, 2025).

Moreover, adaptive physical education programs have been shown to positively influence students' psychological and emotional development. Endrawan et al. (2023) reported that participation in well-structured adaptive programs enhances students' confidence and motivation to engage in physical activities, emphasizing the significance of responsive instructional practices. Thus, adaptive physical education contributes not only to physical development but also to the cultivation of independence and social participation among children with special needs (Bieniaszewska et al., 2021).

One of the most relevant forms of adaptive physical activity is rhythmic exercise, which combines body movement with musical rhythm to strengthen gross motor skills, physical endurance, and self-esteem—particularly for children with mild intellectual disabilities (Fadilah Azzahra & Tarigan, 2024; Mercê et al., 2025). The integration of music and movement provides a structured yet enjoyable platform for children to develop balance, flexibility, and coordination, while simultaneously enhancing their emotional expression and social engagement.

Manggau and Usman (2020) further emphasized that children who regularly participate in rhythmic exercises exhibit marked improvements in coordination and movement accuracy. Consequently, rhythmic exercise represents a promising pedagogical tool within adaptive physical education frameworks, especially for students experiencing motor difficulties. In addition, when rhythmic activities are implemented within positive, interactive learning environments, they contribute to higher learning outcomes and greater student participation (Endrawan et al., 2023).

Beyond the physical dimension, rhythmic exercise also nurtures social and emotional growth. As highlighted by Al-Mamouri (2024), rhythmic movement activities provide opportunities for collaboration and communication, aligning with the holistic objectives of physical education that balance physical skill acquisition with social development. Family and community involvement further enhance children's engagement and learning outcomes in such programs (Iswanto et al., 2023).

Gross motor abilities—such as running, jumping, and kicking—are frequently delayed in children with intellectual disabilities (Krismon, 2023; Nurdaningsih & Riant, 2017). Therefore, physical activity-based interventions, particularly cheerful rhythmic exercises, are essential for improving balance, coordination, and muscular strength (Li et al., 2022; Zhang et al., 2016). Furthermore, the inclusion of music in these exercises increases children's motivation, focus, and overall quality of life, making the intervention both functional and enjoyable.

Recent research has provided strong empirical support for the benefits of rhythmic exercise in enhancing both independence and gross motor performance among children with intellectual disabilities. Dewi et al. (2024) found that rhythmic exercise implemented at SLB Aisyiyah Tulangan Sidoarjo increased children's gross motor abilities from 41% to 82% after two intervention cycles. Similarly, Fibrianti et al. (2022) confirmed a positive correlation between rhythmic exercise participation and gross motor development in preschool-aged children.

The successful implementation of adaptive physical education programs in various SLB contexts has consistently shown significant contributions to children's motor skill improvement (Sukriadi & Arif, 2020; Zulfah, 2019). Moreover, rhythmic exercise fosters the development of self-confidence and emotional well-being among children with intellectual disabilities (Hartina & Abubakar, 2019). Dewi et al. (2024) further noted that when rhythmic activities are appropriately designed and applied, they enable children to reach higher stages of motor development consistent with their age level.

Taken together, these studies underscore the importance of rhythmic exercise not only as a means of enhancing gross motor skills but also as a strategy for strengthening social interaction, self-confidence, and autonomy among children with intellectual disabilities (Nugrohowati & Raharjo, 2023). This activity engages large muscle groups responsible for strength, flexibility, and postural balance (Naufal & Ardiani, 2022).

Based on this theoretical and empirical foundation, it is crucial to conduct a systematic examination of the effectiveness of cheerful rhythmic exercises accompanied by music in improving the gross motor skills of children with intellectual disabilities. Therefore, this study employs a Systematic Literature Review (SLR) approach to comprehensively analyze the extent to which rhythmic exercises contribute to the enhancement of gross motor development among this population.

Method

This study employed a Systematic Literature Review (SLR) method. The SLR is a research approach designed to systematically identify, analyze, evaluate, and interpret all relevant research findings obtained from previous studies. Through this process, the researcher critically reviews prior works by conducting a structured and comprehensive assessment of selected articles (Fian Arifiona Faradila & Sopiah Sopiah, 2023).

The implementation of this SLR consisted of several key stages: formulating research questions, conducting literature searches, screening and selecting relevant studies, presenting and processing data, and drawing conclusions.

First, the research questions formulated for this study were as follows:

1. Does the *Cheerful Rhythmic Gymnastics with Songs* activity improve gross motor skills in children with intellectual disabilities?
2. To what extent does the *Cheerful Rhythmic Gymnastics with Songs* activity influence the improvement of gross motor skills in children with intellectual disabilities?
3. Which aspects of gross motor skills can be enhanced through the *Cheerful Rhythmic Gymnastics with Songs* activity among children with intellectual disabilities?

Second, the literature search was conducted using several academic databases, including Google Scholar, Semantic Scholar, Research Rabbit, and Publish or Perish. The main keywords used in the search were *"the effectiveness of cheerful rhythmic exercise in improving gross motor skills of children with intellectual disabilities."*

Third, the articles obtained from these databases were screened and analyzed based on the research topic and formulated questions. A total of 14 articles were initially identified. After applying the inclusion criteria and evaluating the relevance of each study, five articles were selected for further analysis.

In the subsequent stage, all selected articles were organized and summarized in a review table. The researcher then conducted an intensive analysis of the results and findings presented in each study. Finally, comparisons were made across the reviewed studies to identify common findings, differences, and emerging themes, which were then synthesized to draw overall conclusions.

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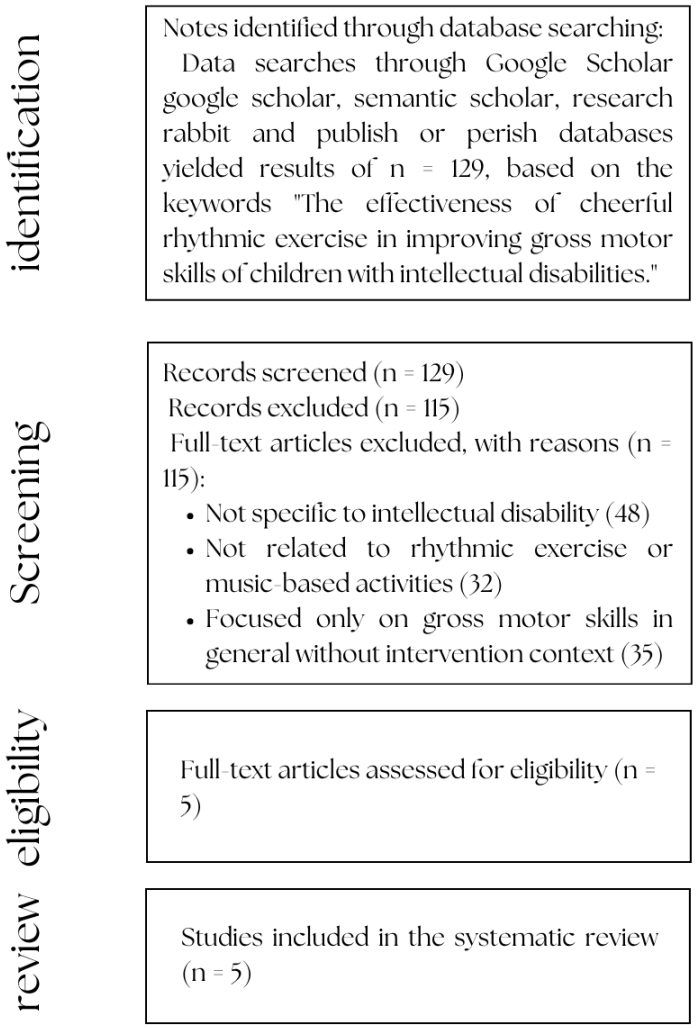

Figure 1. PRISMA Flowchart

Result

The results of this study are presented through a synthesis of relevant research articles that examine the improvement of gross motor skills in children with intellectual disabilities through *Cheerful Rhythmic Gymnastics* activities. Out of a total of 14 articles initially identified, five met the inclusion criteria and were selected for detailed analysis.

The selected studies focused on the effectiveness of rhythmic exercise–based learning in enhancing gross motor skills among children with intellectual disabilities. These articles were identified and mapped systematically through the literature review process. The research questions formulated in this study guided the identification and selection process, forming the foundation for the systematic review.

All relevant documents were retrieved primarily from Google Scholar, with supporting searches conducted through Research Rabbit and Publish or Perish to ensure comprehensive coverage. The inclusion criteria required that each selected article be directly related to rhythmic gymnastics interventions for children with intellectual disabilities and report outcomes associated with gross motor development.

The key information extracted from each study—including the title, author(s), year of publication, methodology, and research findings—is summarized in the following table.

Tabel 1. Literature Review Result

No	Judul	Penulis	Tahun	Hasil
1.	The Effectiveness of Cheerful Gymnastics in Improving Gross Motor Skills of Children with Mild Intellectual Disabilities	Cicha Yumaika and Ardasal (Universitas Negeri Padang)	2020	This study demonstrates that Cheerful Gymnastics is effective in enhancing gross motor skills among children with mild intellectual disabilities. Using a pre-experimental design with pre-test and post-test assessments on five fifth-grade students at SLB XI Pauh Padang, data were analyzed using the Wilcoxon test in SPSS 22. The results revealed a significant improvement in manipulative gross motor skills after participating in the Cheerful Gymnastics program, supporting the use of rhythmic movements as a strategy to promote gross motor development in children with intellectual disabilities.
2.	Analysis of the Implementation of Rhythmic Gymnastics Learning to Improve Gross Motor Skills in Children with Mild Intellectual Disabilities: A Systematic Literature Review	Fany Fadilah Azzahra, Beltasar Tarigan, and Carsiwan	2024	This study indicates that rhythmic gymnastics learning is effective in improving gross motor skills among children with mild intellectual disabilities. Through a systematic literature review of accredited articles published within the past eight years, it was found that rhythmic gymnastics contributes positively to the development of gross motor skills, physical fitness, and self-confidence in children with intellectual disabilities.
3.	Improving Gross Motor Skills through Rhythmic Gymnastics for	Annisa Krismon and Irdamurni	2023	This study demonstrates that rhythmic gymnastics is effective in enhancing gross

	Children with Mild Intellectual Disabilities at SLBN 1 Panti			motor skills among children with mild intellectual disabilities at SLBN 1 Panti. Using the Single Subject Research (SSR) method with an A-B-A design, the child's performance increased from a baseline (A1) of 28–32% to 70–88% during the intervention phase, and stabilized at 88–90% in the final baseline phase (A2). These findings confirm that rhythmic gymnastics can serve as a beneficial intervention to support the gross motor development of children with intellectual disabilities.
4.	Rhythmic Gymnastics Learning Model to Improve Motor Skills for Children with Intellectual Disabilities at SLB Negeri Kedungkandang	Laila Nur Rohmah, Luthfie Lutfhansa, and Nurcholis Istiawan	2023	The results of this community service activity show that the implementation of *Special Cheerful Gymnastics (SCK)* at SLB Tamima Mumtaz was effective in improving physical health and motor abilities among students with mild intellectual disabilities. The gymnastics, accompanied by lively music, successfully attracted students' interest, as reflected in their enthusiasm during the exercise sessions. The program consisted of warm-up, core movements, and cool-down stages, conducted through a personalized approach that included outdoor activities. However, several challenges were identified, such as difficulties in maintaining students' focus during the sessions, the need for individual assistance, and limited time allocation that

				reduced opportunities for students to repeat the movements.
5.	Innovation of Cheerful Gymnastics Specifically Designed for Children with Mild Intellectual Disabilities at SLB Tamima Mumtaz	Siti Zahra, Atma Risnti, Fajar Raya Ferdinal kusuma Bakti, Indah Ramadhani Safitiri, and Wahyu Rosa Ningtias	2020	The results of this community service activity show that the implementation of *Special Cheerful Gymnastics (SCK)* at SLB Tamima Mumtaz was effective in improving physical health and motor abilities among students with mild intellectual disabilities. The gymnastics, accompanied by lively music, successfully attracted students' interest, as reflected in their enthusiasm during the exercise sessions. The program consisted of warm-up, core movements, and cool-down stages, conducted through a personalized approach that included outdoor activities. However, several challenges were identified, such as difficulties in maintaining students' focus during the sessions, the need for individual assistance, and limited time allocation that reduced opportunities for students to repeat the movements.

Discussion

Based on the reviewed literature, rhythmic cheerful gymnastics learning has been proven to have a positive impact on the development of gross motor skills in children with intellectual disabilities. The following are the key findings identified across several studies.

The Effectiveness of Cheerful Gymnastics in Improving Gross Motor Skills of Children with Mild Intellectual Disabilities by *Cicha Yumaika* and *Ardasal* (Universitas Negeri Padang). This study demonstrated that Cheerful Gymnastics is effective in enhancing gross motor skills among children with mild intellectual disabilities. The results indicated a significant improvement in manipulative gross motor abilities after the implementation of the Cheerful Gymnastics program, supporting the use of rhythmic movements as a means to promote gross motor development in children with intellectual disabilities.

Analysis of the Implementation of Rhythmic Gymnastics Learning to Improve Gross Motor Skills of Children with Mild Intellectual Disabilities: A Systematic Literature Review by *Fany Fadilah Azzahra, Beltasar Tarigan,* and *Carsiwan.* This study revealed that rhythmic gymnastics learning effectively enhances gross motor skills in children with mild intellectual disabilities. Through a systematic review of accredited articles published within the last eight years, the findings indicate that rhythmic gymnastics positively contributes to the development of gross motor skills, physical fitness, and self-confidence in children with intellectual disabilities.

Improving Gross Motor Skills through Rhythmic Exercise for Children with Mild Intellectual Disabilities at SLBN 1 Panti by *Annisa Krismon* and *Irdamurni.* This study demonstrated that rhythmic exercise is effective in improving gross motor skills among children with mild intellectual disabilities at SLBN 1 Panti. The findings confirm that rhythmic exercise can serve as a beneficial intervention to support the development of gross motor abilities in children with intellectual disabilities.

Rhythmic Gymnastics Learning Model to Improve Motor Skills for Children with Intellectual Disabilities at SLB Negeri Kedungkandang by *Laila Nur Rohmah, Luthfie Lutfhansa,* and *Nurcholis Istiawan.* The study revealed that cheerful rhythmic gymnastics is effective in enhancing gross motor skills among children with mild intellectual disabilities at SLB Negeri ABD Kedungkandang, Malang City. This rhythmic exercise was proven to improve balance and gross motor coordination, thereby supporting both physical development and motor proficiency in children with intellectual disabilities.

Innovation of Cheerful Gymnastics Specifically Designed for Children with Mild Intellectual Disabilities at SLB Tamima Mumtaz by *Siti Zahra, Atma Risnti, Fajar Raya Ferdinal Kusuma Bakti, Indah Ramadhani Safitiri,* and *Wahyu Rosa Ningtias.* The results of this community service program indicated that the implementation of Cheerful Special Gymnastics (SCK) at SLB Tamima Mumtaz was effective in improving the physical health and motor abilities of students with mild intellectual disabilities. The gymnastics, accompanied by cheerful music, successfully captured the students' interest and enthusiasm, as reflected in their active participation during the sessions.

Conclusion

Based on the literature review, it can be concluded that rhythmic gymnastics, or cheerful rhythmic gymnastics, has been proven effective in improving gross motor skills in children with mild intellectual disabilities. This activity not only contributes to enhanced coordination, balance, and muscle strength but also supports the development of manipulative skills, movement accuracy, and overall body control. Beyond physical benefits, rhythmic gymnastics positively impacts psychological aspects, including increased self-confidence, motivation, and enthusiasm in children during learning activities.

The success of implementing cheerful rhythmic gymnastics is strongly influenced by an individualized and adaptive approach that accommodates the abilities, characteristics, and developmental levels of each child, considering limitations in intellectual, communication, and attentional capacities. A joyful learning environment—enhanced by lively music, engaging movements, and supportive interaction from teachers or facilitators—is a crucial factor in promoting active participation and emotional engagement during the exercises.

Several studies also emphasize the importance of structured and consistent application of cheerful rhythmic gymnastics, whether through regular programs in special schools or community-based activities, to achieve significant improvements in gross motor skills and physical fitness. Therefore, cheerful rhythmic gymnastics functions not only as a means of physical development but also as a holistic

intervention that supports the physical, psychological, and social well-being of children with mild intellectual disabilities within the context of adaptive physical education.

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