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Improvement of Gross Motor Skills in Children Aged 5-6 Years through Joyful Healthy Exercise: A Classroom Action Research at PAUD Al-Muhibbin

Nurmayasari[1*], Dalety Jelita Hayati[1]
[1]Institut Agama Islam Hamzanwadi Pancor, Lombok Timur, Indonesia

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Corresponding Author
Nurmayasari
Institut Agama Islam Hamzanwadi Pancor, Lombok Timur, Indonesia
*E-mail:
nurmayas542@gmail.com

ABSTRACT

This study aims to improve the gross motor skills of children aged 5–6 years through Senam Sehat Gembira (Joyful Healthy Exercise) at PAUD Al-Muhibbin, Kumbang Village. The study employed Classroom Action Research (CAR) consisting of two cycles, each involving planning, action, observation, and reflection. The participants were 15 children in Group B. Data were collected through observation, interviews, and documentation, and analyzed using descriptive qualitative and quantitative techniques. The findings revealed a consistent improvement in children's gross motor skills following the implementation of Senam Sehat Gembira. The proportion of children achieving the expected level of motor skill development increased from 40% in the pre-action stage to 60% in Cycle I and 86.67% in Cycle II. The improvement was reflected in several indicators, including hand-foot coordination, body balance, flexibility, the ability to follow movement instructions, and synchronization of body movements with musical rhythms. These results indicate that Senam Sehat Gembira can serve as an effective and engaging physical activity to support gross motor development in early childhood education. The integration of rhythmic movements, music, and enjoyable activities also creates a participatory learning environment that encourages children's active involvement. This study highlights the potential of structured, enjoyable physical activities as an alternative pedagogical approach to strengthening gross motor skills in early childhood.

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INTRODUCTION

Early childhood is a critical period of human development during which fundamental physical, cognitive, social, emotional, and language abilities are progressively established. Children aged 5–6 years experience rapid developmental changes that require appropriate stimulation through meaningful and developmentally appropriate learning activities. At this stage, children generally demonstrate high levels of curiosity, energy, and enthusiasm for exploring their surroundings. They tend to learn through direct experiences, physical activities, imitation, and interactions with peers. Therefore, early childhood education should not be limited to the development of academic competencies but should also provide opportunities to strengthen children's physical abilities, particularly their motor development. Appropriate stimulation during this period is essential because the experiences children receive contribute to the development of skills needed for subsequent learning and everyday activities.

Motor development is an essential component of early childhood development because it enables children to control their bodies and perform various physical activities independently. Motor skills are generally classified into two categories: fine motor skills and gross motor skills. Fine motor skills involve the coordination of small muscles, particularly those of the hands and fingers, while gross motor skills involve the coordination of large muscle groups, including those of the arms, legs, and torso. Gross motor development is reflected in children's ability to walk, run, jump, maintain balance, coordinate body movements, and perform physical activities in an organized manner. These abilities are not acquired automatically but develop through continuous practice, environmental stimulation, and opportunities to participate in varied physical activities. Consequently, early childhood learning environments should provide activities that allow children to explore different movements while gradually improving their physical coordination and body control (Ulfah et al., 2021).

Gross motor skills are particularly important for children aged 5–6 years because they support physical independence, participation in classroom activities, and social interaction. Children with adequate gross motor abilities are generally better prepared to participate in activities that require balance, coordination, flexibility, agility, and muscular strength. Furthermore, the ability to control body movements may contribute to children's confidence when engaging in physical activities with their peers. Conversely, insufficient stimulation may limit opportunities for children to develop these abilities optimally. Therefore, teachers have an important responsibility to create learning experiences that accommodate children's physical development through activities that are structured, engaging, and appropriate to their developmental characteristics.

Based on preliminary observations conducted in Group B at PAUD Al-Muhibbin, Kumbang Village, several difficulties related to children's gross motor development were identified. Some children experienced difficulties following sequential exercise movements, particularly when movements required simultaneous coordination of the arms and legs. In addition, their body balance and movement control appeared to require further improvement, as indicated by difficulties maintaining stability during running activities. Some children also demonstrated limited enthusiasm when participating in physical activities. These observations

suggest that the development of gross motor skills among several children has not yet reached the expected level. The learning activities provided also need to be evaluated in terms of their variety, attractiveness, and ability to encourage active participation. This situation indicates the need for a more engaging instructional activity that can provide repeated opportunities for children to practice different physical movements.

One activity that can be implemented to address these challenges is Senam Sehat Gembira (Joyful Healthy Exercise). This activity combines simple physical movements with cheerful music to create an enjoyable exercise experience for young children. The movements can involve different parts of the body, including the head, arms, hands, legs, and torso, while encouraging children to follow instructions and coordinate their movements with musical rhythms. Its relatively simple and repetitive movement patterns make the activity accessible to children with different levels of motor development. More importantly, the enjoyable atmosphere may encourage children to participate actively without perceiving physical exercise as a demanding task. Through repeated participation, children have opportunities to practice balance, flexibility, agility, coordination, and muscular control.

The use of rhythmic exercise as a strategy for developing gross motor skills is supported by previous research. Ulfah et al. (2021), through a literature-based analysis, identified rhythmic gymnastics as one of the activities that can support gross motor development in early childhood. Their findings emphasize the importance of providing varied and innovative physical activities to optimize children's motor abilities. Similarly, Usman et al. (2023) demonstrated that rhythmic exercise can improve gross motor skills among children aged 5–6 years. The developmental indicators examined included the ability to coordinate movements of the head, body, arms, and legs, imitate different movements, and improve joint and muscle flexibility. These findings indicate that exercise activities accompanied by rhythmic movements can provide meaningful stimulation for children's physical coordination and movement control.

More specifically, Nurjani and Tini (2024) investigated the development of early childhood gross motor skills through Senam Sehat Gembira using classroom action research at PAUD Miftahul Ulum Sukaresmi, Garut. Their findings showed improvements in children's gross motor development following the implementation of the activity through the pre-action stage and two intervention cycles. The final results indicated that 70% of the children achieved the Developing as Expected (BSH) category, while 30% reached the Very Well Developed (BSB) category. No children remained in the Not Yet Developed (BB) or Beginning to Develop (MB) categories. These findings provide empirical support for the potential of joyful healthy exercise as an instructional activity for stimulating gross motor development (Nurjani & Tini, 2024).

Although previous studies have demonstrated the potential of rhythmic exercise and Senam Sehat Gembira in supporting children's gross motor development, further investigation remains relevant in different educational settings. Each early childhood institution has distinct learning conditions, children's developmental characteristics, and instructional challenges. Therefore, the effectiveness of a particular physical activity needs to be examined within the

context in which it is implemented. At PAUD Al-Muhibbin, the preliminary observations revealed specific difficulties involving movement sequencing, hand-foot coordination, body balance, and children's enthusiasm for physical activities. These conditions provide a contextual basis for implementing and evaluating Senam Sehat Gembira as a classroom-based intervention. The present study also seeks to examine improvements across successive classroom action research cycles rather than merely describe the general benefits of exercise.

In this context, Senam Sehat Gembira is considered a relevant learning intervention because it integrates physical stimulation, movement imitation, rhythmic coordination, and enjoyable learning experiences. Its implementation provides opportunities for children to practice movements repeatedly while interacting with teachers and classmates. The teacher can demonstrate movements, provide guidance, and gradually encourage children to perform the movements more independently. This process allows children to develop their motor abilities while maintaining an enjoyable and supportive learning environment. The activity is expected to address not only physical movement difficulties but also children's participation and enthusiasm during structured exercise sessions.

Based on these considerations, this study aims to improve the gross motor skills of children aged 5–6 years through Senam Sehat Gembira at PAUD Al-Muhibbin, Kumbang Village. Specifically, the study focuses on improving children's movement coordination, balance, flexibility, agility, and ability to follow exercise movements. By employing a classroom action research approach, this study examines the implementation of the intervention and the developmental changes observed throughout the research cycles. The findings are expected to contribute practical insights for early childhood teachers in designing enjoyable and developmentally appropriate physical learning activities, as well as provide additional empirical evidence regarding the application of joyful healthy exercise to support gross motor development in early childhood education.

METHOD

3.1 Research Design

This study employed Classroom Action Research (CAR) to improve the gross motor skills of children aged 5–6 years through the implementation of *Senam Sehat Gembira* (Joyful Healthy Exercise) at PAUD Al-Muhibbin, Kumbang Village. Classroom Action Research was selected because it provides a systematic approach for identifying learning-related problems, implementing instructional interventions, observing their effects, and making improvements based on the findings. Unlike research designs that primarily examine existing conditions, CAR focuses on improving educational practices through systematic and reflective actions within the classroom.

The research adopted the cyclical model developed by Kemmis et al. (2014), which consists of four interconnected stages: (1) planning, (2) acting, (3) observing, and (4) reflecting. These stages were implemented progressively, with the findings from the first cycle serving as the basis for revising and improving the instructional activities in the second cycle. This cyclical process enabled the researcher to evaluate the implementation of the intervention and identify improvements in children's gross motor performance.

3.2 Research Setting and Participants

The research was conducted at PAUD Al-Muhibbin, located in Kumbang Village. The participants consisted of 15 children enrolled in Group B, aged 5–6 years. All children in the class were included as research participants because the intervention was intended to address the gross motor development needs identified within the classroom.

The research focused on improving children's gross motor skills through *Senam Sehat Gembira*. The intervention was designed to provide children with structured and enjoyable physical activities involving coordinated body movements, balance, agility, rhythm, and responsiveness to movement instructions.

3.3 Research Procedures

The research was conducted in two cycles, with each cycle comprising two meetings. Each cycle followed four stages: planning, acting, observing, and reflecting. The reflection conducted at the end of Cycle I was used to identify aspects requiring improvement and to develop a revised action plan for Cycle II.

3.4 Research Instruments and Observation Indicators

The primary research instrument was an observation sheet developed to assess children's gross motor skills during the implementation of *Senam Sehat Gembira*. The instrument was designed to evaluate children's performance based on six observable indicators:

1. Hand and Foot Movement Coordination: The child's ability to coordinate arm and leg movements simultaneously and appropriately.
2. Body Balance: The child's ability to maintain body stability while performing standing, stepping, and other physical movements.
3. Movement Agility: The child's ability to change body positions and perform movements smoothly and responsively.
4. Rhythm Synchronization: The child's ability to perform movements in accordance with the rhythm and tempo of the accompanying music.
5. Ability to Follow Instructions: The child's ability to understand and perform movements according to the teacher's verbal instructions and demonstrations.
6. Confidence in Performing Movements: The child's willingness and confidence to participate in exercise activities and perform movements without excessive hesitation.

Each indicator was assessed using a four-point developmental rating scale consisting of *Belum Berkembang* (BB), *Mulai Berkembang* (MB), *Berkembang Sesuai Harapan* (BSH), and *Berkembang Sangat Baik* (BSB). These categories represent different levels of developmental achievement and were used to monitor children's progress throughout the research cycles.

The assessment was conducted through direct observation during the exercise activities. The use of observation rubrics was consistent with the principles of early childhood assessment, which emphasize authentic, objective, continuous, and developmentally

appropriate assessment practices (Ministry of Education and Culture of the Republic of Indonesia, 2014).

Table 1. Gross Motor Skills Assessment Rubric

Score	Category	Assessment description
4	BSB	The child performs the movement independently, accurately, and consistently without assistance.
3	BSH	The child performs the movement appropriately and independently, although occasional reminders may be needed.
2	MB	The child begins to demonstrate the movement but still requires guidance, modeling, or assistance.
1	BB	The child has not yet demonstrated the expected movement and requires intensive guidance and assistance.

The researcher also used interview and documentation techniques to support the observation findings. Interviews with the classroom teacher were conducted to obtain additional information about children's participation, movement difficulties, and responses to the exercise activities. Documentation included photographs, activity records, and other relevant research materials that provided supporting evidence of the intervention process.

3.5 Data Collection Techniques

Data were collected using three complementary techniques:

1. Observation

Direct observation was conducted throughout the implementation of *Senam Sehat Gembira* to assess children's gross motor development. The researcher recorded each child's performance according to the six predetermined indicators using the four-level developmental assessment rubric. Observation was also used to evaluate teacher performance and children's participation during the learning activities.

2. Interviews

Semi-structured interviews were conducted with the classroom teacher to obtain supporting information regarding children's initial gross motor abilities, participation during exercise activities, challenges encountered during the intervention, and observed developmental changes. The interview findings were used to complement and clarify the observation data.

3. Documentation

Documentation was used to record the research implementation and provide supporting evidence of the children's participation and developmental progress. The documentation consisted of photographs, observation records, and relevant teaching and learning documents collected during the two research cycles.

3.6 Data Analysis Techniques

The collected data were analyzed using qualitative descriptive analysis and quantitative descriptive statistics. The qualitative analysis was intended to describe the implementation of the intervention, children's participation, and changes in their gross motor performance. Meanwhile, quantitative analysis was used to calculate the percentage of children achieving the expected developmental level in each research stage.

Qualitative data were analyzed through a process of data reduction, data display, and conclusion drawing or verification. These interconnected analytical activities enabled the researcher to organize observation records, interview findings, and documentation systematically and interpret the changes occurring during the intervention (Miles et al., 2014).

Quantitative data were obtained from the observation scores assigned to each child based on the six gross motor indicators. The percentage of children achieving the expected developmental level was calculated using the following formula:

$$P = \frac{F}{N} \times 100\% \text{ …….. (1)}$$

Where:
P = Percentage of children's achievement.
F = Number of children achieving the BSH or BSB categories.
N = Total number of research participants (15 children).

Children classified as *Berkembang Sesuai Harapan* (BSH) or *Berkembang Sangat Baik* (BSB) were considered to have achieved the expected developmental level.

Table 2. Criteria for Interpreting Achievement Percentages

Percentage	Category
86–100	Very Good
76–85%	Good
60–75%	Fair
Below 60%	Poor

3.7 Criteria for Research Success

The research was considered successful when the predetermined performance indicators were achieved. The success criteria were established based on children's gross motor development and the effectiveness of the instructional activities. Specifically, the intervention was considered successful when:

1. At least 85% of the participating children achieved the BSH or BSB developmental categories in gross motor skills assessment.
2. Teacher activity during the implementation of *Senam Sehat Gembira* achieved a minimum percentage of 90%.
3. Children's activity and participation during the exercise activities reached a minimum percentage of 85%.

The achievement of these criteria was evaluated at the end of Cycle II by examining the observation results and comparing the developmental progress recorded during the initial observation, Cycle I, and Cycle II. The research was considered to have achieved its objectives when the established indicators of success were fulfilled.

RESULTS AND DISCUSSION

1. Initial Condition (Pre-Action Stage)

The preliminary observation was conducted to identify the gross motor development of 15 children aged 5–6 years at PAUD Al-Muhibbin, Kumbang Village, before the implementation of the *Senam Sehat Gembira* activity. The results indicated that the children's gross motor skills had not yet developed optimally. Several children demonstrated limited body coordination, difficulty maintaining balance, and hesitation when performing physical movements. These difficulties were particularly noticeable when children were required to coordinate their arms and legs, maintain body stability while walking, and perform jumping movements.

The preliminary assessment showed that only 6 out of 15 children (40%) had achieved the *Developing as Expected* (BSH) and *Developing Very Well* (BSB) categories. Meanwhile, the remaining 9 children (60%) were classified within the *Not Yet Developed* (BB) and *Beginning to Develop* (MB) categories. These findings indicated the need for structured and enjoyable physical activities that could provide children with sufficient opportunities to practise fundamental movement skills.

Table 1. Children's Gross Motor Skill Achievement at the Pre-Action Stage

Development category	Number of children	Percentage
Not Yet Developed (BB)	Not separately recorded	-
Beginning to Develop (MB)	Not separately recorded	-
Developing as Expected (BSH) and Developing Very Well (BSB)	6	40.00%
Total achievement	6	40.00%
Not yet achieving the expected level	9	60.00%
Total participants	15	100%

Note. The individual distribution between BB and MB was not available in the initial research records. Therefore, the two categories are not presented as separate numerical findings.

The initial findings suggest that some children still required guidance and repeated practice to perform basic movements confidently and accurately. This condition highlights the importance of providing developmentally appropriate physical stimulation during early childhood. Gross motor development requires opportunities for children to explore different movements, practise body coordination, and gradually improve their ability to control physical actions.

Recent evidence supports the importance of structured physical activity in developing fundamental movement skills. Chen et al. (2024), through a meta-analysis involving 4,068 preschool children, found that structured and unstructured interventions could improve fundamental motor skills, with structured activities demonstrating stronger effects on locomotor skills. This evidence supports the implementation of planned movement activities as an educational strategy to address the initial motor development difficulties identified at PAUD Al-Muhibbin.

2. Implementation of Cycle I

The first cycle consisted of two learning sessions using *Senam Sehat Gembira* as the primary intervention. The activities incorporated basic movements, including swinging the arms, bending the knees, jumping, and turning the body in response to cheerful musical accompaniment. These movements were designed to provide opportunities for children to practise body coordination, balance, flexibility, and movement control in an enjoyable learning environment.

The observation results indicated an improvement in children's gross motor skills compared with the pre-action stage. The number of children achieving the BSH and BSB categories increased from 6 children (40%) to 9 children (60%). Thus, three additional children reached the expected developmental level during Cycle I, representing an improvement of 20 percentage points.

Table 2. Children's Gross Motor Skill Achievement in Cycle I

Development category	Number of children	Percentage
Developing as Expected (BSH) and Developing Very Well (BSB)	9	60.00%
Not yet achieving the expected level (BB and MB)	6	40.00%
Total participants	15	100%

The improvement observed during Cycle I was also reflected in children's participation in the exercise activities. Most children began responding positively to the music and movement instructions. The musical accompaniment appeared to create a more relaxed atmosphere, encouraging children to participate in movements that they had previously performed hesitantly. Nevertheless, several children remained reluctant to follow the movements independently. Some still required repeated demonstrations and individual encouragement from the teacher.

These findings indicate that *Senam Sehat Gembira* provided an initial positive contribution to children's motor development. The combination of repetitive movements and musical rhythm created opportunities for children to practise fundamental movement patterns while maintaining their interest in the learning process. In particular, arm-swinging movements encouraged upper-body coordination, knee-bending movements stimulated lower-body control, and jumping activities provided opportunities to practise balance and body stability.

This interpretation is consistent with the perspective of Gallahue et al. (2012), who explain that fundamental movement development involves the progressive acquisition of locomotor, stability, and object-control skills. At the preschool stage, children need repeated opportunities to perform basic movements so that they can gradually develop greater control and coordination.

Recent research also provides empirical support for the use of movement-based interventions. Zhang et al. (2024), in a systematic review and meta-analysis of intervention programmes for children's fundamental motor skills, reported positive effects on overall motor proficiency, particularly locomotor and object-control skills. Their findings indicate that structured and sufficiently intensive movement programmes can provide meaningful opportunities for children to develop motor competence.

Furthermore, the improvement in this study is consistent with the findings of Yang et al. (2025), whose meta-analysis demonstrated that physical activity programmes could improve several fundamental movement skills in children aged 3–7 years, including running, horizontal jumping, kicking, catching, and dynamic balance. This supports the relevance of incorporating jumping and balance-related activities into the exercise programme at PAUD Al-Muhibbin.

However, the achievement of 60% in Cycle I indicated that the intervention had not yet produced the expected level of development in all children. The remaining six children still required additional support, particularly in following movement sequences, coordinating their limbs, and demonstrating confidence during physical activities.

Based on these observations, reflection was conducted to identify aspects requiring improvement in the subsequent cycle. The teacher needed to provide clearer and more consistent movement demonstrations, repeat movements at an appropriate pace, and create a more encouraging atmosphere. These improvements were intended to increase children's participation and provide better opportunities for practising each movement.

3. Implementation of Cycle II

Cycle II was implemented based on the reflection results from Cycle I. Several improvements were introduced to strengthen the effectiveness of the intervention. The teacher provided clearer and more consistent demonstrations, repeated movements according to the musical rhythm, and offered verbal encouragement throughout the activities. Rhythmic clapping and motivational expressions were also introduced to maintain children's enthusiasm. In addition, positive reinforcement, such as group applause and encouraging responses, was provided to children who actively participated in the exercises.

The results demonstrated a further improvement in children's gross motor skills. A total of 13 out of 15 children (86.67%) achieved the BSH and BSB categories, while only two children (13.33%) remained below the expected developmental level.

The observation results showed improvements in several aspects of children's movement performance. Children demonstrated better coordination between their arms, legs, and head when following the exercise sequences. Their ability to maintain balance during jumping and running activities also improved. Furthermore, children appeared more flexible

when changing body positions and more confident when performing movements in front of their classmates.

Table 3. Children's Gross Motor Skill Achievement in Cycle II

Development category	Number of children	Percentage
Developing as Expected (BSH) and Developing Very Well (BSB)	13	86.67%
Not yet achieving the expected level (BB and MB)	2	13.33%
Total participants	15	100%

The improvement was not limited to physical movement performance. Children's participation also became more active throughout the sessions. They appeared more willing to follow the teacher's demonstrations, respond to instructions, and maintain their involvement until the end of the exercise activities. The use of music, rhythmic clapping, and positive reinforcement helped create a supportive atmosphere in which children could participate without excessive hesitation.

The improvement observed in Cycle II is consistent with the findings of Palupi et al. (2026), who examined structured song-and-movement activities among 16 children aged 5–6 years in Indonesia. Their intervention, conducted over eight weeks and 16 sessions, produced significant improvements in gross motor scores, particularly in coordination and balance. Although their intervention design and duration differed from the present study, the findings provide relevant evidence that combining music and structured movement can support children's motor development.

The results also correspond with Alonso-Martínez et al. (2025), whose meta-analysis of 12 randomized controlled trials involving 4,754 preschool children found that interventions targeting fundamental motor skills improved overall motor competence. Their findings emphasize the importance of deliberately designing activities that develop specific motor skills rather than relying exclusively on general physical activity.

In the context of the present study, the improvements introduced during Cycle II suggest that teacher guidance, repeated movement demonstrations, and positive reinforcement were important elements in supporting children's participation. The teacher's role was not merely to instruct children to exercise but also to provide appropriate examples, maintain motivation, and ensure that children had sufficient opportunities to practise each movement.

Nevertheless, the improvement should be interpreted as a descriptive finding from classroom action research rather than evidence of statistical significance or proof that the exercise programme alone caused the observed changes. Other factors, including repeated exposure to the activities, children's growing familiarity with the movements, and increased confidence, may also have contributed to the results.

4. Comparison of Gross Motor Skill Achievement Across Research Stages

The results obtained during the pre-action stage, Cycle I, and Cycle II indicate a progressive improvement in children's gross motor skill achievement following the implementation of *Senam Sehat Gembira*.

Table 4. Comparison of Children's Gross Motor Skill Achievement Across Research Stages

Research stage	Children achieving BSH and BSB	Achievement percentage	Improvement
Pre-action	6	40.00%	-
Cycle I	9	60.00%	20.00 percentage points
Cycle II	13	86.67%	26.67 percentage points
Overall improvement	+7	+46.67 percentage points	-

Note. Percentages are calculated from 15 participants. Overall improvement is the difference between the pre-action and Cycle II percentages.

Gross Motor Skill Achievement

Percentage of children reaching the BSH and BSB categories across three research stages.

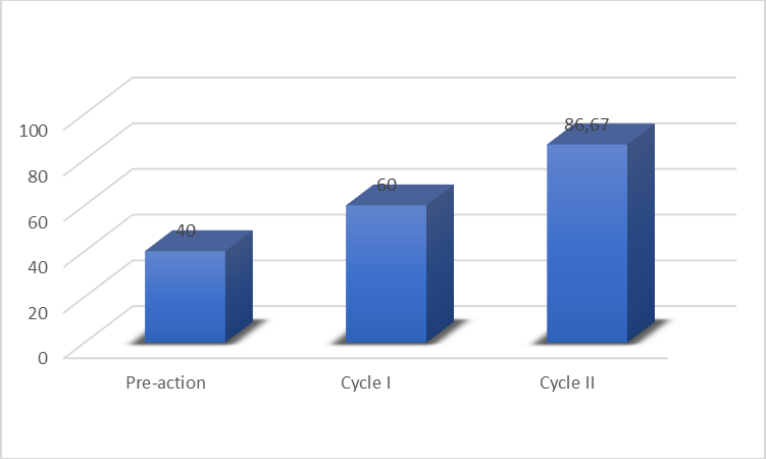

Figure 1. achievement percentage increased

The data indicate that the achievement percentage increased by 20 percentage points from the pre-action stage to Cycle I. A further improvement of 26.67 percentage points was recorded between Cycle I and Cycle II. Overall, the achievement increased by 46.67 percentage points, equivalent to seven additional children reaching the expected developmental categories.

This progression demonstrates that the intervention was accompanied by continuous improvement throughout the classroom action research process. The increase observed in

Cycle II also suggests that the modifications introduced after the first cycle helped address some of the difficulties encountered during the initial implementation.

From an educational perspective, the results highlight the value of combining structured physical activities with enjoyable learning experiences. Children were not simply instructed to repeat movements; they were encouraged to engage in activities that involved rhythm, imitation, body awareness, and interaction with the teacher and their peers.

The findings are supported by Chen et al. (2024), who emphasized the importance of structured movement interventions and repeated practice in developing fundamental motor skills. Similarly, Yang et al. (2025) demonstrated that physical activity programmes can support the development of locomotor and stability-related abilities in young children. Together, these studies provide a theoretical and empirical basis for understanding the positive progression observed in this research.

It is also important to recognize that two children (13.33%) had not yet reached the expected developmental categories by the end of Cycle II. This finding suggests that children may respond differently to movement-based learning activities and that some may require more individualized guidance, additional practice, or alternative movement activities suited to their developmental needs.

5. Factors Contributing to the Improvement of Children's Gross Motor Skills

The improvement observed during the implementation of *Senam Sehat Gembira* can be discussed in relation to several interconnected factors.

5.1. The Use of Cheerful Music and Rhythmic Accompaniment

Music played an important role in creating an enjoyable atmosphere during the exercise activities. Cheerful musical accompaniment encouraged children to participate and helped them associate physical movements with rhythmic patterns. By following the music, children were given opportunities to practise timing, movement coordination, and body control.

The use of music was particularly relevant for children who initially appeared hesitant to perform physical movements. The rhythmic structure provided an accessible reference for following the teacher's demonstrations and maintaining the sequence of movements.

The relevance of this approach is supported by Palupi et al. (2026), whose research demonstrated improvements in coordination and balance through structured song-and-movement activities. Their findings suggest that integrating music and movement can provide an engaging context for developing gross motor skills in preschool children.

5.2. Simple and Repetitive Movement Patterns

The exercise programme incorporated simple movements, including arm swinging, knee bending, jumping, and turning. These movements were selected because they could be performed by children aged 5–6 years and provided opportunities to practise different components of gross motor development.

The repetition of movements allowed children to become increasingly familiar with the required actions. Through repeated demonstrations and practice, children had opportunities to improve their movement accuracy, coordination, and confidence.

This finding is consistent with Chen et al. (2024), who emphasized that structured interventions and consistent practice contribute to the development of fundamental motor skills. Consequently, the selection of simple and repetitive movements was an important consideration in implementing the intervention at PAUD Al-Muhibbin.

5.3. Attractive Supporting Media

Supporting media, including colourful pompoms and other visually attractive exercise accessories, helped maintain children's attention during the activities. These materials provided additional visual stimulation and made the exercise sessions more varied.

The use of attractive accessories also encouraged children to participate actively, particularly when performing movements involving the arms and hands. Such materials can support children's engagement while providing opportunities to combine visual attention with physical movement.

However, the contribution of these accessories should be understood as a supporting element rather than an independently measured cause of motor improvement. The research did not separately compare exercise activities with and without supporting media.

5.4. Teacher Demonstration and Positive Reinforcement

The teacher's role became particularly important during Cycle II. Clear movement demonstrations helped children understand how each movement should be performed. Repetition, verbal encouragement, rhythmic clapping, and group applause also helped create a supportive environment.

Children who initially appeared hesitant became more willing to participate as the teacher provided consistent guidance and positive responses. This suggests that teacher involvement was important not only in explaining movement sequences but also in encouraging children's confidence and sustained participation.

Recent evidence also highlights the importance of the educational environment in supporting motor development. Alonso-Martínez et al. (2025) identified teacher and parent involvement as relevant socioecological factors in interventions designed to improve preschool children's fundamental motor skills.

Overall, these factors indicate that the effectiveness of *Senam Sehat Gembira* should be understood as the result of an integrated learning experience involving structured movements, musical accompaniment, attractive supporting media, and active teacher involvement.

6. Research Instruments: Children's Gross Motor Skills Observation Sheet

Children's gross motor development was assessed through direct observation during the *Senam Sehat Gembira* activities. The observation instrument consisted of eight indicators designed to identify children's movement performance, participation, and ability to respond to instructions.

Table 5. Indicators of Children's Gross Motor Skill Observation

No.	Observation indicator	Description
1	Walking balance	The child's ability to walk while maintaining body stability.

2	Jumping ability	The child's ability to jump using both feet and land with appropriate body control.
3	Rhythm synchronization	The child's ability to coordinate body movements with musical rhythms.
4	Hand-foot coordination	The child's ability to coordinate arm and leg movements during exercise.
5	Agility	The child's ability to change movements appropriately and in a controlled manner.
6	Following instructions	The child's ability to understand and perform the teacher's movement instructions.
7	Movement confidence	The child's willingness to perform movements independently without excessive hesitation.
8	Concentration	The child's ability to maintain attention on the teacher, music, and movement activities.

Each indicator was assessed using four developmental categories: Not Yet Developed (BB), Beginning to Develop (MB), Developing as Expected (BSH), and Developing Very Well (BSB).

The observation process focused on children's actual performance during the activities rather than their ability to explain or describe the movements verbally. This approach allowed the teacher-researcher to identify changes in children's movement control, coordination, and participation throughout the research stages.

It should be noted that the eight indicators represent a combination of motor performance and supporting behavioural competencies. Walking balance, jumping, coordination, agility, and rhythm synchronization directly represent movement-related abilities. Meanwhile, following instructions, movement confidence, and concentration provide contextual information about children's engagement and ability to participate in the exercise activities. Distinguishing these domains is important to ensure that the interpretation of gross motor development remains conceptually appropriate.

7. Children's Activity Observation Sheet

In addition to assessing gross motor development, children's participation during the exercise sessions was observed to identify how actively they engaged in the learning activities.

Each indicator was assessed using scores corresponding to the child's level of participation and involvement. The observation results were used to evaluate the implementation of the activities and identify aspects that required improvement in the following research cycle.

Table 6. Indicators of Children's Participation During *Senam Sehat Gembira*

No.	Activity indicator	Description
1	Following the exercise	The child's ability to participate in the exercise sequence from beginning to end.

2	Active participation	The child's involvement in performing physical movements throughout the activity.
3	Willingness to try	The child's willingness to attempt movements without excessive fear or hesitation.
4	Following instructions	The child's ability to understand and respond to the teacher's directions.
5	Enthusiasm	The child's interest, enjoyment, and motivation during the exercise sessions.

The activity observation sheet complemented the gross motor observation instrument by providing information about children's learning engagement. While the gross motor instrument focused on the development of movement abilities, the activity instrument examined the extent to which children participated in the intervention.

The distinction between these two instruments is important because active participation does not automatically indicate mastery of gross motor skills. However, children's willingness to participate provides opportunities for repeated practice, which may contribute to the development of motor competence over time.

8. Research Limitations

This study has several limitations that should be considered when interpreting its findings. First, the research involved only 15 children from one early childhood education institution, namely PAUD Al-Muhibbin, Kumbang Village. Consequently, the findings cannot be generalized to all preschool children or educational institutions with different characteristics.

Second, the intervention was implemented within two classroom action research cycles. Although the results demonstrated a progressive improvement in children's gross motor skill achievement, the relatively short intervention period limits the ability to determine whether the improvement would be maintained over a longer period.

Third, the study focused primarily on gross motor development and did not systematically assess other developmental domains, such as fine motor skills, cognitive development, or social-emotional development. Furthermore, the study did not employ a control group or a standardized motor assessment instrument. Therefore, the observed improvement should be interpreted within the context of classroom action research rather than as definitive evidence of a causal intervention effect.

Fourth, the research combined several intervention components, including music, repetitive movements, supporting accessories, teacher demonstrations, and positive reinforcement. The individual contribution of each component was not examined separately.

Future research should involve a larger number of participants, longer intervention periods, and more comprehensive motor assessment instruments. Further studies could also examine the relationship between music-based movement activities, fine motor development, and children's social-emotional engagement. A comparative design involving different types

of physical activity programmes would also provide stronger evidence regarding the specific contributions of each intervention component.

CONCLUSION

The findings of this study demonstrate that the implementation of Senam Sehat Gembira effectively improved the gross motor skills of children aged 5–6 years at PAUD Al-Muhibbin, Kumbang Village. This improvement was evident in the progressive increase in the proportion of children achieving the expected level of gross motor development, from 40% in the pre-action stage to 60% in Cycle I and 86.67% in Cycle II. The improvements encompassed several essential motor skill indicators, particularly hand-foot coordination, body balance, flexibility, the ability to follow movement instructions, and the synchronization of body movements with musical rhythms. These findings suggest that structured physical activities incorporating rhythmic movements and music can provide meaningful opportunities for children to develop fundamental gross motor competencies through active and enjoyable participation.

Furthermore, the successful implementation of Senam Sehat Gembira highlights the importance of integrating enjoyable, movement-based activities into early childhood learning. The combination of music, varied physical movements, and structured exercise sequences created an engaging learning environment that encouraged children's participation, confidence, and active involvement. The achievement of 86.67% in Cycle II indicates that the intervention met the intended improvement target of this classroom action research. Accordingly, Senam Sehat Gembira can be considered a practical pedagogical alternative for supporting gross motor development in early childhood education, particularly when activities are systematically planned and adapted to children's developmental characteristics. Nevertheless, given the classroom action research design and the involvement of only 15 children in a single educational setting, the findings should be interpreted within the context of the study rather than generalized to all early childhood education institutions.

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AUTHOR CONTRIBUTIONS

Both authors contributed to the completion of this study. Nurmayasari was responsible for conceptualization, research design, data collection, implementation of the joyful healthy exercise intervention, and initial manuscript preparation. Dalety Jelita Hayati contributed to research supervision, methodological guidance, data analysis and interpretation, critical manuscript revision, and final approval of the manuscript. Both authors read and approved the final version of the manuscript.

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CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest regarding the research, authorship, and publication of this article.

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