



The Effect of Passing Ball Games to Gross Motor Ability of Children with Special Need

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Abstract

Gross motor skill is crucial in child's growth and development proses. Throwing ball games are considered effective in helping improve gross motor skills in children with special needs. The purpose of this study is to provide a comprehensive understanding of the influence of ball throwing games on gross motor skills in children with special needs. This study used a literature review method. The database used was from Google Scholar. The first stage of identification obtained 2500 articles. The second stage of screening, filtering 16 articles. The third stage of eligibility was 10 articles. After the eligibility stage, eight articles remained. The results of the discussion found that the activity of throwing a ball in a game of bocce can improve gross motor skills, stimulate nerves, and improve hand-foot coordination in children with mental retardation. Children with mild intellectual disabilities showed an increase in manipulative motor skills after being treated with a modified throwing ball game. From the results of the systematic review, it can be concluded that ball throwing games have a significant influence on gross motor skills in children with special needs.

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INTRODUCTION

Gross motor skills play a crucial role in a child's growth and development. Gross motor skills involve large muscle movements, such as crawling, rolling, crawling, sitting, standing, walking, running, jumping, and various kicking and throwing and catching activities (Novitasari et al., 2019). With good motor development, children can easily adapt to their environment, and suboptimal motor development can reduce a child's creativity in adapting (Ananditha, 2017).

Children with special needs experience difficulties in developing their motor skills (Gustian et al., 2024). According to Kirana et al., 2023, the characteristics of children with special needs include disabilities or abnormalities in mental, sensory, physical, behavioral, social and emotional, and communication. This impacts their growth and development compared to other children of the same age. Therefore, stimulation is needed to support gross motor development in children with special needs (Suwandari et al., 2021).

The play approach is considered effective in stimulating gross motor development in children with special needs. The reason play approach can be considered effective because first, play can be used as a means for children to express themselves. Second, overcoming challenges. And third, it can positively impacting their gross motor skills and encouraging optimal growth and development (Utami, 2024).

The ball-throwing game is a simple, easy-to-play game. It focuses on throwing as its primary motor skill and a ball as its tool. A modified ball-bouncing game, conducted by (Kafrawi & S, 2019), demonstrated significant improvements in hand-eye coordination among students with moderate intellectual disabilities at the Putra Mandiri Special Needs School in Surabaya.

Furthermore, research by (Baharudin & Sifaq, 2021) also concluded that motor development improved in children with Down syndrome at the Bina Bangsa Special Needs School in Sidoarjo when they were given baseball throwing exercises, as measured using experimental methods. The findings above indicate an improvement in gross motor skills in children with special needs when given the ball-throwing game. However, the diverse methods and samples (children's needs) raising a doubt about the effectiveness of this ball-throwing game in improving motor skills of children with special need.

A literature review is the process of reading, evaluating, comparing, and connecting

various previous research findings (Di Gregorio, 2000). The purpose of a literature review is to identify and strengthen the topic or argument being researched through various stages, such as determining the topic, searching for literature sources, selecting, organizing information, and writing systematic results (Hadi & Afandi, 2021).

Although several studies have shown the positive impact of ball throwing games on the gross motor development of children with special needs, there has not been a study that comprehensively analyzes the effectiveness of this approach based on the type of child's needs and the variety of methods used. Using the literature review method, researchers aim to fill that gap to demonstrate a comprehensive understanding of the influence of ball throwing games on the gross motor development of children with special needs.

METHOD

This study employed a qualitative research model with a systematic approach, a Systematic Literature Review (SLR) guided by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). The advantages of PRISMA include: methodically and explicitly defined research questions, established inclusion and exclusion criteria, and a time-limited search of scientific literature databases (Fadilah Azzahra & Tarigan, 2024).

The first stage was determining the research question to be developed: "Does playing ball throw affect gross motor development in children with special needs?" The database used was Google Scholar, using the Publish or Perish application as a search engine. The keywords used to identify articles in the search were "Throwing ball game," "gross motor development," and "children with special needs," resulting in 2,500 articles.

The second stage was data filtering, assessing the suitability of the title and summary to the keywords used. This stage resulted in 16 documents collected from Google Scholar.

The third stage is sorting the data, according to the criteria required in the research. There's three data criteria were used. First, the time span used was between 2016 and 2025. Second, the documents used were journals with empirical data (conference papers, book chapters, and review articles were not included). Third, the Indonesian language was used. Articles in languages other than Indonesian were excluded from the list. As a result, eight articles were used in this study. The following is the PRISMA flowchart (Figure 1).

Table 1. Review Journal

| Title | Writers | Year | Method | Sample | Result |
|---|---|------|---|--|--|
| Permainan Bocce terhadap Kemampuan Motorik Anak Tuna Grahita Ringan pada Siswa SMP | Rizky Hidayat, Nurhayati Simatupang, Sam-suddin Siregar, Indra Kasih, Budi Valianto, Syukur Damai Zebua | 2024 | Experiment with pra-experimental model one group pre-test-post-test design | 15 siswa/ siswi tuna grahita ringan tingkat SMP | Terdapat pengaruh yang signifikan terhadap kemampuan gerak motoric dasar pada anak tuna grahita ringan di SMP Pertama Kota Medan. Aktivitas ini juga merangsang saraf dan gerakan motoric tubuh, serta melatih koordinasi tangan dan kaki. |
| Pengaruh Permainan Lempar Tangkap Bola terhadap Koordinasi Mata, Tangan dan Kaki Siswa Tunagrahita | Indra Setiawan, Dwi Gansar Santi Wijayanti, Mohamad Annas, Agus Pujiyanto | 2024 | Experiment with pretest and post test design | 8 siswa tuna grahita kelas IX | Hasil analisis data menyimpulkan bahwa pemberian latihan lempar tangkap bola memiliki pengaruh terhadap kemampuan gerak koordinasi mata, tangan, dan kaki pada siswa tuna grahita SLB. |
| Pengaruh Permainan Lempar Tangkap Bola terhadap Keterampilan Motorik Kasar Anak Cerebral Palsy di SLB YPAC Jember | Angger Timansah, Arifah Nurhadiyanti | 2024 | Experiment with single subject research (SSR) | Semua anak cerebral palsy dalam lingkungan | Terjadi peningkatan kemampuan motoric kasar setelah diberi perlakuan melalui permainan lempar tangkap bola. |
| Pengaruh permainan bocce terhadap Keterampilan Motorik Kasar Siswa Down Syndrome SLB Eka Mandiri Kota Batu | Arya Akmal Firdaus, Slamet raharjo, Olivia Andiana, Ahmad Abdullah | 2023 | Pre-Experimental with pre-test and post-test using TGMD-2 | 6 siswa down syndrome usia 6-10 tahun | Terdapat pengaruh pemberian perlakuan permainan Bocce terhadap ketrampilan motoric kasar pada siswa down syndrome di SLB Eka Mandiri Kota Batu |
| Pengaruh penggunaan media permainan Bocce terhadap Kemampuan motoric siswa Down Syndrome | Yusuf Agung, Bambang Ferianto, Tjahyo Kuntjoro | 2021 | Qualitative descriptive Experiment with one group pre-test and post-test | 10 siswa down syndrome putra | Hasil penelitian diperoleh nilai signifikan $0.00 < 0.05$ dan menunjukkan adanya pengaruh dari permainan bocce terhadap kemampuan motoric siswa down syndrome sebesar 64%. |
| Pengaruh Latihan Lempar Bola menggunakan Sasaran terhadap Gerak Motorik Kasar dan Ketepatan Melempar pada Peserta Didik Down Syndrome | Iska Putranto Sap-tadi, Dwi Chayo Kartiko, Abdul Rachman Syam Tuasikal | 2021 | Pre-experimental with pre-test and post-test design | 8 siswa down syndrome | Terdapat peningkatan pada gerak motoric dan ketepatan Peserta didik Down Syndrome. |
| Pengaruh Modifikasi Permainan Lempar Tangkap Bola terhadap Koordinasi Gerak Manipulatif Anak Tunagrahita Ringan Siswa SmpIb-C Alpha Kumara Wardhana Ii Surabaya | Muhammad Zainal Arifin | 2016 | Pre-experimental with pre-test and post-test design | 14 siswa tunagrahita ringan | Terdapat pengaruh setelah modifikasi permainan lempar tangkap bola terhadap koordinasi gerak manipulatif anak tuna grahita ringan. |
| Penerapan Permainan Lempar Tangkap Bola Besar terhadap Motorik Kasar Siswa Autis Di Slb | Ari Ardiansya | 2016 | Pre-experiment quantitative research by using pre-test and post test group design | Siswa autis kelas I-IV SDLB Dharma Wanita Sidoarjo | Hasil analisis data menunjukkan bahwa adanya pengaruh yang signifikan terhadap kemampuan motorik kasar siswa autis di SDLB Dharma Wanita Sidoarjo setelah diberi perlakuan menggunakan permainan lempar tangkap bola besar. |

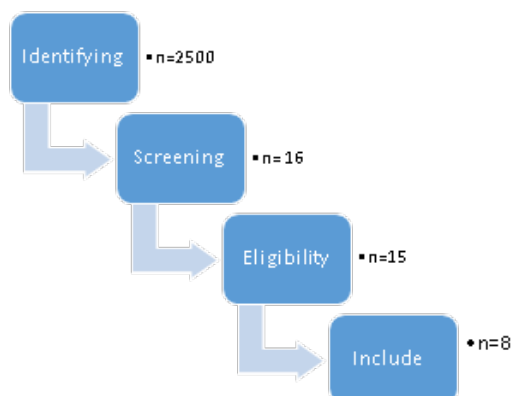


Figure 1. Flowchart PRISM

RESULTS AND DISCUSSION

The purpose of this study was to provide a comprehensive understanding of the influence of ball throwing on gross motor development in children with special needs. After a selection process based on predetermined criteria, eight articles were compiled, including title, author, year, methodology, sample, and results. The journals included in this research are: Jurnal Kesehatan Olahraga, Jurnal Pendidikan Khusus, Jurnal Ilmu Keolahragaan UNDIKSHA, Indonesian Journal for Physical Education and Sport, Jurnal Cerdas Proklamator, Jurnal Pendidikan Olahraga dan Kesehatan UNESA, Sport and Science, and Jurnal Education and Development. The following **Table 1** presents the results.

Three samples used children with mild intellectual disabilities, three articles used children with Down syndrome, one with cerebral palsy, and one with autistic children. All researchers used an experimental method in these articles.

The results show that the ball throwing game has a positive influence on the gross motor development of children with special needs, such as improving hand and foot coordination, stimulating nerves and body motor movements, training throwing accuracy and improving manipulative movement skills. Research conducted by (Agung & Ferianto Tjahyo Kuntjoro, 2021) and (Firdaus et al., 2023) using throwing activities in bocce games can stimulate gross motor development in students with mild intellectual disabilities, stimulate nerves, and improve hand-foot coordination. Furthermore, there was a 64% increase in motor skills in students with Down syndrome. Analysis (Setiawan et al., 2024) concluded that there was an improvement in eye, hand, and foot coordination in students with intellectual disabilities after being exposed to ball throwing games. There was an improvement in gross motor skills

in students with cerebral palsy after being exposed to a ball-throwing game (Timansah & Nurhadiyati, 2024). Autistic students in grades I-IV at the Dharma Wanita Special Needs Elementary School showed significant changes in their motor skills after being exposed to a large ball-throwing game in an analysis (Ardiansya & Sudarto, 2016). Activities such as play are essential for children to adapt to their environment, as a means of self-expression and enjoyment, thus developing their motor skills (Sofyan et al., 2022). Children with special needs require different attention to support their motor development (Astuti et al., 2024).

This aligns with research conducted by (Molintao et al., 2024), which demonstrated that a ball-throwing play approach effectively improves gross motor skills in children with mental retardation. This literature review was conducted to serve as a reference for future research.

CONCLUSION

The results of this review conclude that ball throwing games have been shown to be effective in improving gross motor skills in children with special needs, such as those with mild intellectual disability, cerebral palsy, Down syndrome, and autism. This literature review is expected to serve as a reference for further research, particularly on children with special needs.

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