Jurnal SPORTIF: Jurnal Penelitian Pembelajaran
Vol. 10 No. 2, August 2024, pp. 189 – 201
https://doi.org/10.29407/js_unpgri.v10i2.23108

The running and jumping game model is effective in improving physical motor disorders in children with mentally retarded

Slamet Raharjo[1abe], Mahmud Yunus[1cdf], Irmantara Subagio[2cdf], Raja Mohammed Firhad Raja Azidin[3def].

[1]Department of Sport Science, Faculty of Sport Science, Universitas Negeri Malang, Semarang No. 5 Street, Malang, East Java 65145, Indonesia.

[2]Department of Sport Coaching Education, Faculty of Sport and Health Science, Universitas Negeri Surabaya, Lidah Wetan, Surabaya, East Java 60213, Indonesia.

[3]Faculty of Sports Science and Recreation, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia.

Received: 13 June 2024; Revised: 1 July 2024; Accepted: 27 July 2024; Available online: 31 August 2024.

Abstract

This study aims to demonstrate the effect of a running and jumping game model in improving physical motor impairments in children with intellectual disabilities. A pre-experimental design method was used, involving 15 male children aged 11-12 years with intellectual disabilities, who were selected through purposive sampling. The running and jumping game model was conducted for 30 minutes per session, with moderate intensity (60-70% HRmax), three times a week for four weeks. Data collection involved measuring motor skill development, namely running speed and jump height, between pretest and posttest using a 40-meter run test and vertical jump test. Data analysis was conducted using a paired sample t-test with a 5% confidence level. The results showed a significant difference in running speed between pretest and posttest (8.98±0.07 vs. 7.66±0.09 seconds; p=0.001). Similarly, jump height analysis showed a significant difference between the pretest and posttest (21.57±0.98 vs. 31.43±1.72 cm; p=0.001). This proves that the running and jumping game model effectively improves motor skills impairments in children with intellectual disabilities.

Keywords: Motor skills, intellectual disabilities, game model, physical development.

How to Cite: Raharjo, S., Yunus, M., Subagio, I., & Azidin, R. M. F. R. (2024). The running and jumping game model is effective in improving physical motor disorders in children with mentally retarded. Jurnal SPORTIF : Jurnal Penelitian Pembelajaran, 10(2), 189-201. https://doi.org/10.29407/js_unpgri.v10i2.23108

Authors contribution: a – Preparing concepts; b – Formulating methods; c – Conducting research; d – Processing results; e – Interpretation and conclusions; f - Editing the final version

INTRODUCTION

Play is a crucial element in child development (Gordon Biddle et al., 2013). It influences all areas of development, including learning about oneself, others, and the environment (Ahmed et al., 2023). Play also promotes social, emotional, cognitive, and physical development in ways

Correspondence author: Slamet Raharjo, Universitas Negeri Malang, Indonesia.
Email: slamet.raharjo.fik@um.ac.id

that cannot be achieved through other means. Through play, children learn how to interact with peers while building essential schemas about the real world. Despite the perception of play as merely a pastime for caregivers, extensive research has highlighted its significance for every child (Gordon Biddle et al., 2013). The concept of play is complex and multifaceted, leading to various definitions. It can be defined as an activity undertaken for enjoyment or recreation, particularly in a learning context (Carrington et al., 2023).

Learning through play has emerged as a crucial strategy to encourage active student engagement in physical activities (Parker et al., 2022). Policymakers, researchers, and educators now advocate that learning through play is developmentally appropriate, as it fosters curiosity in school-aged children and facilitates the challenging transition from kindergarten to formal schooling (Parker et al., 2022). However, there needs to be more evidence and practical guidelines on effectively implementing play-based learning in formal school settings and the conditions that support its success.

In the context of physical education, learning through play is equally important for children with special needs, including those with intellectual disabilities (Özkan & Kale, 2021). Physical education provides opportunities for all students, including those with special needs, to improve their physical fitness, motor skills, and overall health (Moghaddaszadeh & Belcastro, 2021). While the general approach in physical education for children with special needs does not differ significantly from that for typically developing children, there are critical differences in the delivery and adaptation of instruction to meet the unique needs of these children (Siller et al., 2021). For children with intellectual disabilities, physical education activities must be carefully designed to accommodate their limitations while promoting motor skill development (Yu et al., 2022). Effective physical education programs for special education students require specialized training for educators, who must be equipped with strategies to adapt physical activities

and instructions to suit the diverse abilities of their students (Bertills et al., 2019).

Special education is a specialized form of education that addresses the needs of children with disabilities, including those with intellectual disabilities (Benitez et al., 2022). Intellectual disabilities are characterized by below-average intellectual functioning that begins during the developmental period. Children with intellectual disabilities have limitations in mental functioning, communication skills, self-care abilities, and social skills (Endriyani & Yunike, 2017). Furthermore, intellectual disabilities are known to affect interpersonal relationships and practical skills, leading to motor skill limitations (Tomaz et al., 2017; Memisevic & Djordjevic, 2018; Top, 2021; Kang, 2021). Children with intellectual disabilities often experience delays in motor development due to their motor responses not evolving into typical motor patterns, resulting in lower motor skill levels (Indardi, 2015). According to Jeoung (2018), children with intellectual disabilities generally exhibit weaknesses in movement skills, poor physical health, lack of coordination, diminished awareness of their surroundings, and deficiencies in both gross and fine motor skills. While previous research conducted by Monteiro et al. (2022) has explored the role of physical activity and play in the development of motor skills in children with intellectual disabilities, but still found gaps in the research results regarding the specific impact of structured and game-based interventions such as running and jumping game models. Most existing studies focus on unstructured physical activity or do not isolate specific types of games designed to target motor skill improvements.

Observational studies, such as those by Choi and Cheung (2016) and Jacinto et al. (2021), have provided valuable insights into how structured physical activities can benefit children with intellectual disabilities, particularly in real-world settings. These studies highlight the importance of targeted interventions that are adaptable to the needs of these children and demonstrate significant improvements in both motor and cognitive development. This study was conducted at State Exceptional Schools in

https://doi.org/10.29407/js_unpgri.v10i2.23108
10 (2) 2024 | 189-201

Kedungkandang, Malang City, due to its accessibility and the availability of a suitable population that aligns with the study's objectives. Building on these findings, this study aims to demonstrate the effect of a running and jumping game model in improving motor skills impairments in children with intellectual disabilities, offering a more targeted approach to enhancing their physical development through structured play.

METHOD

This study employed a pre-experimental method with a one-group pretest-posttest design. Seven male children with intellectual disabilities, aged 11-12, were selected as subjects. The subject sampling technique used non-probability sampling. Informed consent was obtained from their classroom teachers before the intervention. All procedures in this study were approved by the Research Ethics Committee of Universitas Negeri Malang (UM) (No: 04.07.4/UN32.14.2.8/LT/2024).

The research team implemented and supervised the running and jumping game model. The procedures for providing treatment, namely in a way transferring a flag over a 10-meter distance, frog jumps, stacking cans over a 10-meter distance, jumping through hoops, zig-zag running over a 10-meter distance, jumping while heading a ball, figure-eight running, jumping over obstacles, jumping through hoops and obstacles, followed by a forward run. On the school's open field, these activities were conducted for 30 minutes per session, three times a week for four weeks (twelve meetings).

The data collection procedure assessed physical motor development by measuring running speed and jump height across different meeting times. Data were collected at two key points: the pretest conducted during the first meeting and the posttest conducted during the twelfth meeting. Quantitative measurements were obtained using a 40-meter run and vertical jump tests. These tests were administered individually to each child at both the beginning (pretest) and the end (posttest) of the intervention period, ensuring consistency in the testing environment. The 40-meter run test was conducted on a flat, open field, where children were instructed to run as fast

as they could. The vertical jump test was performed using a standardized measuring device, with children asked to jump as high as possible from a standing position. Each test was repeated three times, and the best result was recorded. The tests used for children with intellectual disabilities had a reliability of 0.911 and a validity of 0.894. These high reliability and validity scores indicate that the tests are both consistent and accurate when measuring motor skills in this population. The tests were specifically chosen because they have been validated for children with intellectual disabilities, ensuring that the assessments accurately reflect their motor capabilities. Moreover, the tests were administered under standardized conditions to minimize variability and ensure reliable results across different sessions. This makes the findings of this study robust and applicable to similar populations.

Data analysis included descriptive statistics to present the mean ± standard deviation (SD), normality testing using the Shapiro–Wilk test, and difference testing using a paired sample t-test with a 5% confidence level. Effect size evaluation using Cohen's d. Cohen classified effect sizes as small (d = 0.2), medium (d = 0.5), and large (d ≥ 0.8) (Sullivan & Feinn, 2012). All statistical analyses were performed using SPSS software version 26.

RESULT

The normality test results show that all data (running speed and jump height) was normally distributed (p ≥ 0.05).

Table 1. Results of analysis of running speed (seconds) and jump height (cm) between pretest and posttest

Parameters	n	Pretest	Posttest	Normality	p-value
Running speed (s)	7	8.98±0.07	7.66±0.09*	0.189† 0.114≠	0.001
Jump height (cm)	7	21.57±0.98	31.43±1.72*	0.609† 0.958≠	0.001

Description: (*) Significantly different from pretest (p ≤ 0.001). Data are presented as mean±SD. P-value was obtained by paired sample t-test. (†) Normality test results on the pretest (p ≥ 0.05). (≠) Normality test results on the posttest (p ≥ 0.05).

https://doi.org/10.29407/js_unpgri.v10i2.23108
10 (2) 2024 | 189-201

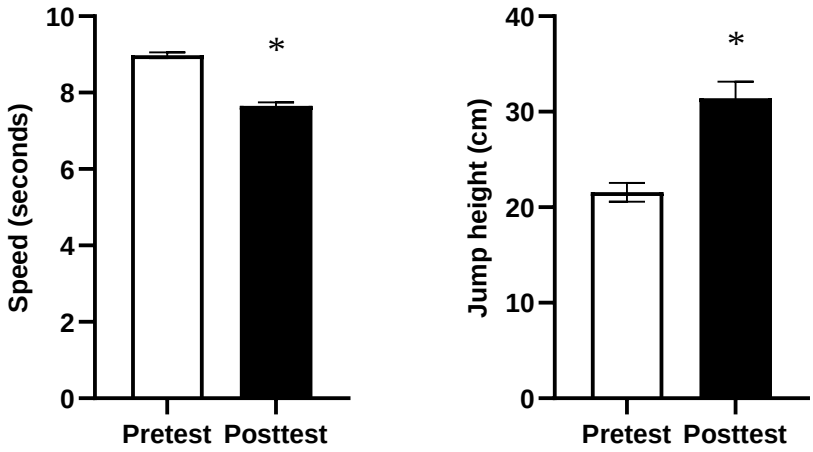

Figure 1. Average running speed (seconds) and jump height (cm) between pretest and posttest. (*) Significantly different from pretest ($p \leq 0.001$).

Based on Figure 1, the results of the Paired Sample T-test show that there was a significant difference in running speed between pretest and posttest (8.98±0.07 vs. 7.66±0.09 seconds; p=0.001), and the effect size was large with a Cohen's d value of 16.373. Similarly, jump height analysis showed a significant difference between the pretest and posttest (21.57±0.98 vs. 31.43±1.72 cm; p=0.001), and the effect size was large with a Cohen's d value of 7.044.

DISCUSSION

The results of this study show an increase in both running speed and jump height after implementing the running and jumping game model for four weeks. This indicates that the application of play-based models is a key element in child development (Nery et al., 2023). Implementing game models provides opportunities for children to adapt to others and their environment, thereby positively impacting motor development, cognitive abilities, and problem-solving skills (Sutapa et al., 2021; Tapia-Fuselier & Ray, 2019). The game model used in this study aimed to encourage children to engage in physical activities and stimulate muscle movement (Sutapa et al., 2021), which is crucial in enhancing fundamental motor skills as a strategy to promote more complex movement skills (sports skills), increase physical activity participation, and gain physical health benefits during childhood (Moghaddaszadeh & Belcastro, 2021; Fizi et al., 2023).

For children with special needs, particularly those with intellectual disabilities, physical education plays a vital role in supporting their overall development (Molina Roldán et al., 2021). Play-based activities like the running and jumping game model can be especially beneficial in helping these children improve their motor skills, physical fitness, and even social interactions (Sutapa et al., 2021). Children with intellectual disabilities often experience delays in motor development, and targeted interventions like the one in this study can help address these deficits by providing structured opportunities for physical activity (Kavanagh et al., 2023). Play can enhance various aspects of child development, such as increasing bone density (Heidemann et al., 2013), improving gross and fine motor skills, and stimulating muscle growth (Burhaein, 2017). Additionally, play can physiologically enhance neurogenesis and increase endorphins, serotonin, melatonin, and growth hormones (Suri et al., 2017; Gligoroska & Manchevska, 2012). Ruffin (2019) reported that cognitive play tends to elevate children's comprehension and boost their immune systems during growth and development.

They implemented a running and jumping game model, including activities like transferring a flag over a 10-meter distance, frog jumps, stacking cans over a 10-meter distance, jumping through hoops, zig-zag running over a 10-meter distance, jumping while heading a ball, figure-eight running, jumping over obstacles, jumping through hoops and obstacles, followed by a forward run. These games must be adapted to the conditions of children with intellectual disabilities (Bauer et al., 2023), such as using simple or effective language for instructions during the intervention. This is important when dealing with children with intellectual disabilities (Ninnoni, 2019). Several studies have revealed that individuals with Profound Intellectual and Multiple Disabilities (PIMD) of all ages face significant communication challenges, with limited understanding of speech and communication at a pre-symbolic or proto-symbolic level (Chadwick et al., 2019; Herbuela et al., 2021). Emotional understanding of children is crucial for their engagement in the given interventions (Ninnoni, 2019). Adapting

https://doi.org/10.29407/js_unpgri.v10i2.23108
10 (2) 2024 | 189-201

interventions is a form of specialized service that bridges the concept of play for children with special needs, ensuring that they receive the same benefits from physical education as their typically developing peers.

In recent decades, substantial evidence has been reported that play-based physical activities positively impact physical and mental health in children and adolescents (Mahindru et al., 2023). A study by Dimitri et al. (2020) reported that regular and sustained play-based physical activity can improve cardiovascular fitness levels and long-term health into adulthood. Moreover, physical activity in the form of play is considered one of the most critical determinants of health status in children (Fonseca Del Pozo et al., 2017).

The findings of this study demonstrate that the running and jumping game model is effective in improving motor skills in children with intellectual disabilities. This success aligns with the study's primary objective of enhancing physical development through structured play-based interventions. The results reinforce the importance of integrating structured physical activities into special education programs. Such integration offers a practical approach to addressing motor skill impairments and promoting overall well-being in children with intellectual disabilities.

Based on these findings, it is recommended that educators and therapists incorporate running and jumping game models into the regular physical education curriculum for children with intellectual disabilities. Teachers and caregivers should receive further training on adapting these activities to meet each child's specific needs. This will ensure that the interventions are both accessible and beneficial.

Future research could explore the long-term impacts of such interventions, including their influence on physical, social, and cognitive development over time. Despite the positive outcomes observed, several limitations should be acknowledged. First, the sample size was relatively small, which may limit the generalizability of the findings to a broader population. Second, the study was conducted over a short period (four weeks), leaving the long-term effects of the intervention unknown. Future

studies could benefit from extended follow-up periods to assess the sustainability of motor skill improvements. Lastly, the study focused primarily on quantitative measures of physical performance. Future research should include qualitative assessments to understand better the subjective experiences and challenges associated with the running and jumping game model.

CONCLUSION

Based on the results of this study, it can be concluded that the running and jumping game model, conducted three times per week for four weeks, is effective in improving motor skills impairments in children with intellectual disabilities. This intervention has proven to be a valuable tool in enhancing the motor skills of these children, supporting their overall development and participation in physical activities. To maximize the benefits of this intervention, it is recommended that educators and therapists integrate the running and jumping game model into the regular physical education curriculum for children with intellectual disabilities. Additionally, teachers and caregivers should receive training to adapt these activities to meet the specific needs of individual children, ensuring that the intervention is both accessible and effective. Further research could explore the long-term effects of this model to determine its sustained impact on motor skills and overall well-being.

REFERENCES

Ahmed, S., Khan, D.S., & Mehmood, A.S. (2023). Let Them Play: A Systematic Review Investigating the Benefits of Free Play in Emotional Development of Children. *Academy of Education and Social Sciences Review,* *3*(4), 509–520. https://doi.org/10.48112/aessr.v3i4.660.

Bauer, V., Tifanie Bouchara, Duris, O., Labossière, C., Marie-Noëlle Clément, & Bourdot, P. (2023). Head-mounted augmented reality to support reassurance and social interaction for autistic children with severe learning disabilities. Frontiers in Virtual Reality, 4. https://doi.org/10.3389/frvir.2023.1106061.

Benitez Ojeda, A. B., & Carugno, P. (2022). Special Education. In StatPearls. StatPearls Publishing. Available from: https://www.ncbi.nlm.nih.gov/books/NBK499857/.

Bertills, K., Granlund, M., & Augustine, L. (2019). Inclusive Teaching Skills and Student Engagement in Physical Education. *Frontiers in Education*, *4*(74). https://doi.org/10.3389/feduc.2019.00074.

Burhaein, E. (2017). Aktivitas fisik olahraga untuk pertumbuhan dan perkembangan siswa SD. *Indonesian Journal of Primary Education*, *1*(1), 51–58. https://doi.org/10.17509/ijpe.v1i1.7497.

Carrington, L., Hale, L., Freeman, C., Smith, D., & Perry, M. (2023). The effectiveness of play as an intervention using International Classification of Functioning outcome measures for children with disabilities - a systematic review and meta-synthesis. Disability and rehabilitation, 1–22. Advance online publication. https://doi.org/10.1080/09638288.2023.2259305.

Chadwick, D., Buell, S., & Goldbart, J. (2019). Approaches to communication assessment with children and adults with profound intellectual and multiple disabilities. Journal of applied research in intellectual disabilities : JARID, 32(2), 336–358. https://doi.org/10.1111/jar.12530.

Choi, P. H., & Cheung, S. Y. (2016). Effects of an 8-Week Structured Physical Activity Program on Psychosocial Behaviors of Children With Intellectual Disabilities. *Adapted physical activity quarterly : APAQ*, *33*(1), 1–14. https://doi.org/10.1123/APAQ.2014-0213.

Dimitri, P., Joshi, K., Jones, N., & Moving Medicine for Children Working Group (2020). Moving more: physical activity and its positive effects on long term conditions in children and young people. *Archives of disease in childhood*, 105(11), 1035–1040. https://doi.org/10.1136/archdischild-2019-318017.

Endriyani, S., & Yunike. (2017). Having Children with Mental Retardation. *International Journal of Public Health Science (IJPHS), 6*(4), 331-336. https://doi.org/10.11591/ijphs.v6iv.10779.

Fizi, R. M., Winarni, S., Guntur, & Hartanto, A. (2023). A game model in physical education to improve motor skills, cooperation, and discipline of primary school learners. *Pedagogy of Physical Culture and Sports, 27*(6), 448–455. https://doi.org/10.15561/26649837.2023.0602.

Fonseca Del Pozo, F. J., Alonso, J. V., Álvarez, M. V., Orr, S., & Cantarero, F. J. L. (2017). Physical fitness as an indicator of health status and its relationship to academic performance during the prepubertal period. *Health promotion perspectives*, 7(4), 197–204. https://doi.org/10.15171/hpp.2017.35.

Gligoroska, J. P., & Manchevska, S. (2012). The effect of physical activity on cognition - physiological mechanisms. *Materia socio-medica, 24*(3), 198–202. https://doi.org/10.5455/msm.2012.24.198-202.

Gordon Biddle, K.A., Garcia-Nevarez, A., Roundtree Henderson, W.J., & Valero-Kerrick, A. (2013). *Early Childhood Education Becoming a Professional*. New York: SAGE Publications, Inc. ISBN-13. 978–1412973458.

Heidemann, M., Mølgaard, C., Husby, S., Schou, A. J., Klakk, H., Møller, N. C., Holst, R., & Wedderkopp, N. (2013). The intensity of physical activity influences bone mineral accrual in childhood: the childhood health, activity and motor performance school (the CHAMPS) study, Denmark. *BMC pediatrics, 13*, 32. https://doi.org/10.1186/1471-2431-13-32.

Herbuela, V. R. D. M., Karita, T., Furukawa, Y., Wada, Y., Yagi, Y., Senba, S., Onishi, E., & Saeki, T. (2021). Integrating Behavior of Children with Profound Intellectual, Multiple, or Severe Motor Disabilities With Location and Environment Data Sensors for Independent Communication and Mobility: App Development and Pilot Testing. *JMIR rehabilitation and assistive technologies, 8*(2), e28020. https://doi.org/10.2196/28020.

Indardi, N. (2015). Pengulangan Teknik Permainan Kasti Terhadap Peningkatan Kemampuan Motorik Kasar Anak Tunagrahita Ringan. *Journal of Physical Education, Health and Sport, 2*(1), 44–49. https://doi.org/10.15294/jpehs.v2i1.3942.

Jacinto, M., Vitorino, A. S., Palmeira, D., Antunes, R., Matos, R., Ferreira, J. P., & Bento, T. (2021). Perceived Barriers of Physical Activity Participation in Individuals with Intellectual Disability-A Systematic Review. *Healthcare (Basel, Switzerland)*, *9*(11), 1521. https://doi.org/10.3390/healthcare9111521.

Janssen, I., & Leblanc, A. G. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *The international journal of behavioral nutrition and physical activity, 7*, 40. https://doi.org/10.1186/1479-5868-7-40.

Jeoung B. (2018). Motor proficiency differences among students with intellectual disabilities, autism, and developmental disability. *Journal of exercise rehabilitation, 14*(2), 275–281. https://doi.org/10.12965/jer.1836046.023.

Kang O. D. (2021). Effects of therapeutic horse-riding program on the walking ability of students with intellectual disabilities. *Journal of animal science and technology, 63*(2), 440–452. https://doi.org/10.5187/jast.2021.e22.

Kavanagh, H., Issartel, J., Meegan, S., & Manninen, M. (2023). Exploring the motor skill proficiency barrier among children with intellectual disabilities: Analysis at a behavioural component level. *PloS*

one, *18*(11), e0288413. https://doi.org/10.1371/journal.pone.0288413.

Mahindru, A., Patil, P., & Agrawal, V. (2023). Role of Physical Activity on Mental Health and Well-Being: A Review. *Cureus, 15*(1), e33475. https://doi.org/10.7759/cureus.33475.

Memisevic, H., & Djordjevic, M. (2018). Visual-Motor Integration in Children With Mild Intellectual Disability: A Meta-Analysis. *Perceptual and motor skills, 125*(4), 696–717. https://doi.org/10.1177/0031512518774137.

Moghaddaszadeh, A., & Belcastro, A. N. (2021). Guided Active Play Promotes Physical Activity and Improves Fundamental Motor Skills for School-Aged Children. *Journal of sports science & medicine, 20*(1), 86–93. https://doi.org/10.52082/jssm.2021.86.

Molina Roldán, S., Marauri, J., Aubert, A., & Flecha, R. (2021). How Inclusive Interactive Learning Environments Benefit Students Without Special Needs. *Frontiers in Psychology*, *12*, 661427. https://doi.org/10.3389/fpsyg.2021.661427.

Monteiro, C. E., Da Silva, E., Sodré, R., Costa, F., Trindade, A. S., Bunn, P., Costa E Silva, G., Di Masi, F., & Dantas, E. (2022). The Effect of Physical Activity on Motor Skills of Children with Autism Spectrum Disorder: A Meta-Analysis. *International journal of environmental research and public health*, *19*(21), 14081. https://doi.org/10.3390/ijerph192114081.

Nery, M., Sequeira, I., Neto, C., & Rosado, A. (2023). Movement, Play, and Games-An Essay about Youth Sports and Its Benefits for Human Development. *Healthcare (Basel, Switzerland), 11*(4), 493. https://doi.org/10.3390/healthcare11040493.

Ninnoni J. P. K. (2019). A qualitative study of the communication and information needs of people with learning disabilities and epilepsy with physicians, nurses and carers. *BMC neurology, 19*(1), 12. https://doi.org/10.1186/s12883-018-1235-9.

Özkan, Z., & Kale, R. (2021). Investigation of the effects of physical education activities on motor skills and quality of life in children with intellectual disability. *International journal of developmental disabilities*, *69*(4), 578–592. https://doi.org/10.1080/20473869.2021.1978267.

Parker, R., Thomsen, B.S., & Berry, A. (2022). Learning Through Play at School – A Framework for Policy and Practice. *Frontiers in Education, 7*, 751801. https://doi.org/10.3389/feduc.2022.751801.

Ruffin, N. J. (2019). *Human growth and development-A matter of principles. Journal Virginia Polytechnic Institute and State University*. Page 350-353. Available at: https://www.pubs.ext.vt.edu/350/350-053/350-053.html.

Suri, M., Sharma, R., & Saini, N. (2017). Neuro-physiological correlation between yoga, pain and endorphins. *International Journal of Adapted Physical Education and Yoga, 2*(9), 18–32. ISSN: 2455–8958.

Siller, M., Morgan, L., Wedderburn, Q., Fuhrmeister, S., & Rudrabhatla, A. (2021). Inclusive Early Childhood Education for Children With and Without Autism: Progress, Barriers, and Future Directions. *Frontiers in psychiatry*, *12*, 754648. https://doi.org/10.3389/fpsyt.2021.754648.

Sullivan, G. M., & Feinn, R. (2012). Using Effect Size-or Why the P Value Is Not Enough. Journal of graduate medical education, 4(3), 279–282. https://doi.org/10.4300/JGME-D-12-00156.1.

Sutapa, P., Pratama, K. W., Rosly, M. M., Ali, S. K. S., & Karakauki, M. (2021). Improving Motor Skills in Early Childhood through Goal-Oriented Play Activity. *Children (Basel, Switzerland), 8*(11), 994. https://doi.org/10.3390/children8110994.

Tapia-Fuselier, J., & Ray, D.C. (2019). Culturally and Linguistically Responsive Play Therapy: Adapting Child-Centered Play Therapy for Deaf Children. *International Journal of Play Therapy, 28*(2): 79 – 87. https://doi.org/10.1037/pla0000091.

Tomaz, R. V. V., Santos, V. A., Silva de Avó, L. R. D., Germano, C. M. R., & Melo, D. G. (2017). Impacto da deficiência intelectual moderada na dinâmica e na qualidade de vida familiar: um estudo clínico-qualitativo [Impact of moderate intellectual disability on the dynamics and quality of family life: a qualitative clinical study]. *Cadernos de saude publica, 33*(11), e00096016. https://doi.org/10.1590/0102-311X00096016.

Top E. (2021). Fine motor skills and attention level of individuals with mild intellectual disability getting education in inclusive classrooms and special education schools. *International journal of developmental disabilities, 69*(2), 248–255. https://doi.org/10.1080/20473869.2021.1953940.

Yu, S., Wang, T., Zhong, T., Qian, Y., & Qi, J. (2022). Barriers and Facilitators of Physical Activity Participation among Children and Adolescents with Intellectual Disabilities: A Scoping Review. *Healthcare*, *10*(2). https://doi.org/10.3390/healthcare10020233.