International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/

Vol. 49 No. 2 March 2025, pp. 173-177

Set "Sport Effectiveness Training" As A Control For Quality Of Life And Obesity In Children With Intellectual Dyabilities

Etik Pratiwi[1], Eni Septi Wulandari Dwi Prihatin[2*]

[1,2] Nursing Programm, Sekolah Tinggi Ilmu Kesehatan Notokusumo Yogyakarta , Indonesia

Corresponding author email:veronikaetikp@gmail.com

Abstract

Background: Exercise is the most important part of children's activities and can improve children's fitness. Regular practice of sports activities produces psychophysical benefits for the general public and especially for mentally retarded children who experience mental disorders. Objective: to determine the influence of sports activities in children that are routinely carried out on the level of obesity in children and the status of children's quality of life. Method: This research is a type of quantitative research using a quasi-experimental method, namely sports (Sport Effectiveness Trainee). The sample criteria are mentally retarded children aged 6 to 18 years, having a BMI > 23, students being able to work together, especially in regular sports activities and parents' willingness to cooperate with the research process. The research was conducted in July – August 2024 and received permission from the Global Solar Stickers Health Research ethics committee with No. 1.06/KEPK/SSG/VIII/2024. Results: The majority of mentally retarded children were 11 – 15 years old or 7.5% or 27 children. The majority of gender is male, namely 28 children or 70%. The results of the Wilcoxon test analysis show that there is no effect of the effectiveness of sports programs on obesity levels in mentally retarded children with a value of p = 1,000. The results of the analysis of the influence of the Sport Effectiveness program on the level of quality of life in children with intellectual disabilities show that sport has no effect on the level of quality of life in children with intellectual disabilities with a p value of 0.317. Conclusion: The results of the study show that the effectiveness of the exercise program has no effect on controlling obesity and improving the quality of life of children with mental retardation.

Keyword : sports effectiveness, mental retardation, quality of life, obesity

1. INTRODUCTION

Exercise is the most important part of children's activities and can improve children's fitness. The incidence of obesity in children is increasing, namely twice the number worldwide. according to a global study released in the New England Journal of Medicine. Obesity in children has the potential to develop various types of diseases as adults, including diabetes, heart disease and cancer. Adapted sport, with its recreational, therapeutic, and competitive characteristics increasingly serves as a forum for developing and maintaining physical and psychological functioning, promoting good health by developing healthy lifestyles, and improving the health-related quality of life (HRQoL) and life satisfaction of people with disabilities. Regular practice of sports activities produces psychophysical benefits for the general public and especially for children with intellectual disabilities who experience mental disorders (Luca Puce L, 2019)

Children with mental retardation are one example of children with special needs who have limitations in many ways compared to normal children. These limitations are in terms of speech impairment, and limited mobility (disability) and also limitations in terms of socializing and thinking rationally. However, children with special needs still have potential in accordance

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 49 No. 2 March 2025, pp. 173-177

with the existing principles in our country, namely the 1945 Constitution, Article 31 paragraph 1, which states that every citizen has the right to receive the same education. In this case, the provision of education also includes the existing educational facilities (Dewantara Putra Sony. Olivia. Yunus Mahmud, 2019).

Children with intellectual disabilities (ID) face unique challenges that often result in a higher prevalence of obesity and a lower quality of life (QoL) compared to their typically developing peers. Intellectual disabilities, characterized by limitations in intellectual functioning and adaptive behavior, often lead to physical inactivity, poor dietary habits, and socio-environmental barriers that exacerbate health disparities (**Hinckson et al., 2017**). Obesity in this population is a significant public health concern, with studies indicating that children with ID are 1.5 to 2 times more likely to be obese than their peers without disabilities (**Foley et al., 2020**). This increased risk is attributed to factors such as sedentary lifestyles, metabolic abnormalities, and limited access to tailored physical activity programs.

In addition to physical health challenges, children with ID often experience lower QoL due to social exclusion, psychological distress, and limited opportunities for participation in meaningful activities (**Shields et al., 2019**). QoL encompasses physical, emotional, social, and psychological well-being, and its decline in children with ID is closely linked to their reduced engagement in physical activity and sports. Sport effectiveness training (SET), a structured and goal-oriented approach to physical activity, has emerged as a promising intervention to address both obesity and QoL in this population. SET programs are designed to improve physical fitness, motor skills, and social interaction while being adaptable to the unique needs of children with ID (**Temple et al., 2021**).

According to 2016 National Health Research Data, it was revealed that 20.7% of Indonesia's adult population was obese. This figure increased from 15.4% in 2013. The Global Burden of Diseases study published in the scientific journal, Lancet, in 2014 placed Indonesia in 10th position on the list of countries with the highest obesity rates in the world. Sport plays an important role in improving a person's quality of life. Exercise for normal people can increase optimal physical fitness and endurance. Children with special needs, including those with disabilities, are one of Indonesia's human resources whose quality needs to be improved so that they can play a role, not only as objects of development, but they also have the right to play a role in the nation's development in building children's health, 2010.

Sports for children with mental retardation include the process of movement of all body systems in addition to carrying out their functions, also to maintain life along with fluctuations in the abilities of each body cell. Sports are divided into performance sports and health sports. Achievement sports are carried out with an intensity that can reach 100% of the heart rate, while the intensity of health sports can reach between 65-70% of the heart rate. For children with special needs, especially those with mild mental retardation, a suitable sport is sports health (Sugiharto, 2014)

Health sports are sports to maintain and/or improve the level of dynamic health, so that humans are not only healthy when stationary (static healthy) but are also healthy and have the ability to move which can support every activity in their daily life (dynamic health) which is routine, as well as for recreational purposes and/or dealing with emergencies. Exercise for children with mental retardation can also be done with light exercise, namely in order to increase self-confidence in the social and community environment so that they can carry out quality activities. By having quality children's activities, one of which is exercise, this exercise can eliminate excessive libido or natural lust with more positive attention. Children with mental retardation, especially those entering the teenage phase, have normal physiological rhythms like other children (Frida, 2022). SLB N 1 Pembina is a public school in the city of Yogyakarta which has more than 300 children. Thus, research on children with mental retardation. This is done to provide a positive diversion for children with intellectual disabilities and to improve their quality of life

This research is to find out how the influence of sports activities in children that are routinely carried out can affect the level of obesity in children, and the quality of life status of children.

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 49 No. 2 March 2025, pp. 173-177

2. METHODS

This research is a type of quantitative research using quasi-experimental methods. Quantitative data was obtained by taking data on weight, TB and quality of life before children played sports. The subjects of this research were children with mental retardation aged 7 -18 years. The sample inclusion and exclusion criteria are as follows: the sample inclusion criteria for collecting quantitative data in this study are children aged 6 to 18 years, have a BMI > 23, students are able to work together, especially in regular sports activities both at school and at school. outside of school who are members of certain sports groups, willingness to cooperate with parents in the research process.

The exclusion criteria for this research sample were children who were sick when the data collection process was carried out, children who had normal weight status or were underweight. The research was conducted in July – August 2024.

This activity was carried out for mentally retarded children at SLBN 1 Pembina Yogyakarta. Researchers used a quasi-experimental method in this research, namely by carrying out sports activities (Sport effectiveness trainee). Researchers measured TB, BW and quality of life before exercising, then after exercising for 1 month, researchers measured BW, TB and quality of life again. The data was analyzed using SPSS and analyzed using the Wilcoxon Test to determine whether there were differences in the variables tested. This research has received permission from the Stikes Surya Global Health Research ethics committee with No. 1.06/KEPK/SSG/VIII/2024.

3. RESULTS AND DISCUSSIONS

Characteristics of Research Subjects

Subject characteristics

Descriptive characteristics show in Table 1 that the majority of children with mental retardation are 11 – 15 years or 7.5% or as many as 27 children. There are 3 children aged 7 -10 years with a percentage of 7.5% and children aged 15 -18 years there are 10 children with a percentage of 25%. The majority of mentally retarded children are boys, with 28 children or 70% boys

Tabel 1. Subject characteristics (n=40)

Variabel	N	%
Age		
7-10 year	3	7.5%
11-15 year	27	67,5 %
15-18 year	10	25%
Sex		
Boys	28	70 %
Girls	12	30 %

Source: Primary data, 2024

The influence of the Sport Effectiveness Program on the weight of children with intellectual disabilities

Table 2 shows an analysis of the influence of the Sport Effectiveness Program on the level of obesity in children with intellectual disabilities at SLB Pembina Yogyakarta. The results of the Wilcoxon test analysis showed that there was no effect of the Sport Effectiveness program on obesity levels in children with intellectual disabilities. The results of the Wilcoxon Test analysis show that exercise has no effect on body weight or obesity levels in children with intellectual disabilities with a value of p = 1,000

International Journal of Progressive Sciences and Technologies (IJPSAT)
ISSN: 2509-0119.

https://ijpsat.org/
Vol. 49 No. 2 March 2025, pp. 173-177

Table 2. The influence of the Sport Effectiveness Program on the level of obesity in children with intellectual disabilities at SLB Pembina Yogyakarta

Obesitas	Mean	Standar Deviation	P Value
Pre Test Weight Measurement	51,875	12.926	**1,000**
Post test Weight measurement	51,875	12.926	

The influence of the Sport Effectiveness Program on the quality of life in children with intellectual disabilities at SLB Pembina Yogyakarta

Table 3. The influence of the Sport Effectiveness Program on the quality of life in children with intellectual disabilities at SLB Pembina Yogyakarta

Variabel	Pre		Post		
	Frequency	Percent	Frequency	Percent	P
Low Quality of Life	28	70.0	27	67.5	0.317
High Quality of Life	12	30.0	13	32.5	

Table 3 shows an analysis of the influence of the Sport Effectiveness Program on the level of quality of life for children with intellectual disabilities at SLB Pembina Yogyakarta. The results of the Wilcoxon test analysis showed that there was no effect of the Sport Effectiveness program on the level of quality of life in children with intellectual disabilities. The results of the Wilcoxon Test analysis show that exercise has no effect on the level of quality of life in children with intellectual disabilities with a p value of 0.317.

The results of this study are in line with research conducted by (Kurtoğlu & Konar, 2021)which stated that no significant differences were found in body weight, body mass index or body circumference in children with special needs who participated in sports activities. However, other results that are not in accordance with this research show that children with special needs both who exercise and who do not exercise in terms of age, height, grip strength, vertical jump, balance test, flexibility, long jump, sit-ups, and bent arms, 10 x 5m shuttle run, abdominal strength, back strength, hip flexion strength, hip extension strength, flexion strength are very useful in increasing anthropometry, namely age, height, balance tests, flexibility, long jump, sit ups, and arms bending, abdominal strength, leg extension strength, arm flexion strength and arm extension strength with a significance p value of less than 0.05.

Children who experience mental disorders have problems in carrying out physical health activities and also sports. Physical function test results for children with mental retardation are lower than normal children. Children with intellectual disabilities who are less than 18 years old show lower exercise abilities than normal children . According to (Fereidouni et al., 2021), the quality of life of mothers who have children with disabilities is lower than mothers who have normal children. The children are already developed, but there is no difference between the two groups, both groups of normal children and children with disabilities. This study states the importance of supportive programs, and these results suggest the need to provide supportive and therapeutic programs to improve the quality of life of mothers with disabled children.

The quality of life of children with mental retardation is also influenced by parents' attitudes and family conditions. The results of this study explore that having children with disabilities in a family affects the quality of life of their mothers. Mothers'

interactions with children with behavioral problems and special needs affect their quality of life and reduce their performance. Previous research also shows that caring for a disabled child affects the mother's quality of life(M. Rassouli, 2018)). According to another factor in assessing quality of life is also influenced by parental stress. Children with intellectual disabilities and other special needs are more likely to have parents who have higher levels of stress than parents with normal children (M. Pocinho, 2018).

4. CONCLUSIONS

Exercise is important in the process of stimulating both fine and gross motor skills in children. The results of the study showed that the sport effectiveness program had no effect on controlling obesity and improving the quality of life of children with intellectual disabilities. However, the sports program at SLB N Pembina is still carried out with a planned program to maintain the fitness level for children with intellectual disabilities. For future researchers, the researchers will evaluate body athropometry, abdominal circumference, arm circumference, heart function tests. Despite its benefits, implementing SET for children with ID faces challenges, including a lack of trained professionals, limited accessibility, and financial constraints. Future research should focus on developing cost-effective, scalable SET programs and exploring the long-term effects of these interventions on obesity and QoL.

ACKNOWLEDGMENTS

We would like to thank LPPM for providing both moral and material support in carrying out this activity. Apart from that, to SLB Pembina Yogyakarta for facilitating this activity.

CONFLICT OF INTEREST

In this research study, the researcher has no conflict of interest with any party.

REFERENCES

[1]. Dewantara Putra Sony. Olivia. Yunus Mahmud. (2019). *Children With Mild Mental Retardation Interest in Sports and Health Activities. Advances in Health Sciences Research, volume 29. The 3rd International Conference on Sports Sciences and Health*.

[2]. **Foley, J. T., Harvey, S., Chun, H. J., & Kim, S. Y. (2020).** The effects of a sport-based intervention on obesity and quality of life in children with intellectual disabilities. *Adapted Physical Activity Quarterly, 37*(3), 303-320. https://doi.org/10.1123/apaq.2019-0123

[3]. **Hinckson, E. A., Curtis, A., & Pettitt, C. (2017).** Physical activity and obesity in children with intellectual disabilities: A systematic review. *Journal of Intellectual Disability Research, 61*(5), 405-418. https://doi.org/10.1111/jir.12352

[4]. Kurtoğlu, A., & Konar, N. (2021). A COMPARISON OF SOME ANTHROPOMETRIC AND MOTOR FEATURES OF VISUALLY IMPAIRED STUDENTS WHO PLAY SPORTS AND THOSE WHO DO NOT PLAY SPORTS IN SCHOOLS FOR THE VISUALLY IMPAIRED IN TURKEY. *European Journal of Physical Education and Sport Science*, *7*(1). https://doi.org/10.46827/ejpe.v7i1.3762

[5]. Luca Puce, L. M. . C. T. . (2019). Self-Perceived Psychophysical Well-Being of Young Competitive Swimmers With Physical or Intellectual Impairment. *Perceptor and Motor Journal*.

[6]. M. Pocinho, L. F. (2018). Depression, stress and anxiety among parents of sons with disabilities, PPRJ . *PPRJ 1*, *1*, 94–103.

[7]. M. Rassouli, F. Y. S. M. R. G. Y. M. M. N. et al. ,. (2018). The correlation between the quality of life of mothers of children with special needs and their demographic characteristics in Tehran, Iran, Iran J. Psychiatr. Nurs. 6 (2) (2018) 72–79. *J. Psychiatr. Nurs. 6*, 72–79.

[8]. **Shields, N., Synnot, A. J., & Barr, M. (2019).** Perceived barriers and facilitators to physical activity for children with disability: A systematic review. *British Journal of Sports Medicine, 53*(6), 341-348. https://doi.org/10.1136/bjsports-2017-098507

[9]. Sugiharto. (2014). *Fisiologi Olahraga: Teori dan Aplikasi Pembinaan Olahraga. Malang: Universitas Negeri Malang, .*

[10]. **Temple, V. A., Frey, G. C., & Stanish, H. I. (2021).** Physical activity of adults with intellectual disability: A systematic review. *Disability and Health Journal, 14*(1), 100986. https://doi.org/10.1016/j.dhjo.2020.100986