

The Effect Of Static Stretching Exercises On The Flexibility Of Children With Mental Reterdation

Galang Baqiyudin^{1*}, Nurhasan², Suroto³

¹Doctoral Program of Sport Science, Faculty of Sport Science and Health,
Universitas Negeri Surabaya, Surabaya 60231, Indonesia

^{2,3} Department of Sport Science, Faculty of Sport Science and Health,
Doctoral Program of Sport Science, Faculty of Sport Science and Health
Jl. Lidah Wetan, Lidah Wetan, Kec. Lakarsantri, Kota SBY, Jawa Timur 60213, Indonesia

*Corresponding Author:

Email: galangbaqiyudin16070946002@mhs.unesa.ac.id

Abstract.

This research was conducted on moderate category mentally retarded children. This research aims to improve flexibility and balance in children with special needs, namely mentally retarded children. The mentally retarded children who were the research subjects were children aged 5-6 years. This research used a quasi-experimental method, where children were given static stretching treatment and then carried out flexibility and balance tests. The results of this research show that static stretching can have a significant impact on flexibility and balance in mentally retarded children. It can be concluded that static stretching can increase flexibility and balance.

Keywords: *Mental Reterdation, flexibility, balance and static stretching.*

I. INTRODUCTION

Education is a natural process that occurs naturally in human life in the family environment. In its development, human life has become increasingly complex and advanced, so that family education which prioritizes natural personal formation is no longer adequate to face the development and progress of science and technology (science and technology). Therefore a formal educational structure was created which is called school education (Nursalim et al, 2007). Education is a natural process that occurs naturally in human life in the family environment. In its development, human life is becoming more complex and advanced, so that family education which prioritizes natural personal formation is no longer adequate to face the development and progress of science and technology (science and technology). Physical education for children with special needs is very important because it improves the quality of movement and students' physical fitness through physical activity. However, the problems faced by children with special needs are different from normal children. Children with disabilities generally have low motor skills. A mentally retarded person is someone who has mental disorders, or behavior due to impaired intelligence. Mental retardation is a term used to refer to children who have intellectual abilities below average (Somantri, 2006: 103). Mental retardation is a condition where a person experiences impaired intelligence function from birth. 47% of people with mental retardation are experienced by babies born to mothers aged 21-25 years, 4% to mothers aged 41-45 years, apart from genetic factors and other factors (Yadav, 2011). Mental retardation or mental retardation is a genetic disorder, a condition where the development of intelligence experiences obstacles so that it does not reach the optimal stage of development and is followed by obstacles to adaptive behavior and obstacles to movement development (Armatas, 2009).

For this reason, physical activity is needed which can improve the movement abilities of mentally retarded children, in this case flexibility and balance. The physical or human body is a complex and amazing organ system. All of these organs are formed in the prenatal period (in the womb). Kuhlen and Thomshon (1956), stated that individual physical development includes four aspects, namely (1) the nervous system which greatly influences the development of intelligence and emotions; (2) muscles that influence the development of strength and motor skills; (3) endocrine glands, which cause the emergence of new behavioral patterns, such as in adolescents developing a feeling of pleasure to be active in an activity where some members consist of members of the opposite sex; and (4) physical/body structure which includes

height, weight and proportions. The center or core of sports activities is human movement itself. Humans move to carry out activities. But human movement in sports is not movement done haphazardly, but movement done in a planned and organized manner. In fact, to get optimal results, exercises are often done repeatedly with the same movements. One of the goals of exercises that are carried out repeatedly is so that the movement can be carried out efficiently and effectively both in relation to the use of time, space, energy and all uses of something that influence the achievement of optimal results. Carrying out movements effectively and efficiently is only possible if the movements carried out can be coordinated well. It can be said more firmly that without mastery of good coordination, the results achieved will not be optimal.

This assertion provides the understanding that the ability to coordinate movements is one of the absolute requirements that must be mastered to produce optimal movements. Stretching when doing sports activities is very necessary. Because stretching is stretching the muscles with the aim of reducing the impact of injury during sports activities. According to Harsono (2001: 15), stretching is a form of action carried out to expand joint movement which is usually carried out through various movements, namely static stretching, dynamic stretching, passive stretching, and PNF. Therefore, this stretching exercise method is generally used to increase a person's flexibility to improve their physical condition. Static stretching is the process of stretching muscles that are done in place and not moved for several seconds. Static stretching is used to stretch the muscles, lengthening the muscles slowly to an elongated position, to the point of discomfort not pain (Anderson & Burke) in (Trumbley, 2010: 8). O' Sullivan (2009) also said that static stretching is placing muscles in an elongated position and holding that position for a certain period of time. According to the National Academy of Sports Medicine second edition, static stretching is the passive process of bringing a muscle to a point of tension and holding the stretch for at least 20 seconds. This stretch is a traditional form of stretching that is often used in sports activities at school and in gyms. This activity combines low strength with long duration. By holding a muscle in a stretched position for a prolonged period of time, the nerves of the Golgi organ are stimulated and produce an inhibitory effect on the muscle axis (autogenic inhibition). This allows the muscles to rest and provides muscle extension. Static stretching should be used to reduce muscle spindle activity from tight muscles before and after activity.

II. METHODS

This research is included in the Action Research type of research. Action research is used to find solutions to problems faced by someone in their daily tasks wherever they are, whether outside the classroom or inside the classroom. In action research, it is not only limited to the classroom, but wherever the educator works. This research uses a quantitative approach with a pre-experimental design, namely an experiment that is not actually Arikunto (2010: 123). It is said that because this type of experiment does not meet the requirements, such as an experimental method that can be said to be scientific, following certain rules. Meanwhile, pre-experimental design as explained by Sukmadinata (2011: 59) is an experimental research method whose design and treatment are like an experiment but there is no variable control at all. This research design uses the static group pretest-posttest design. This design does not have a control group, there is a treatment, the subjects are not randomly assigned. This design is distinguished by the presence of a pretest before treatment is given. The aim is for statistical control and can be used to see the effect of treatment on score achievement.

Kelompok	Pretest	Treatment	Posttest
R1	T1	X1	T2

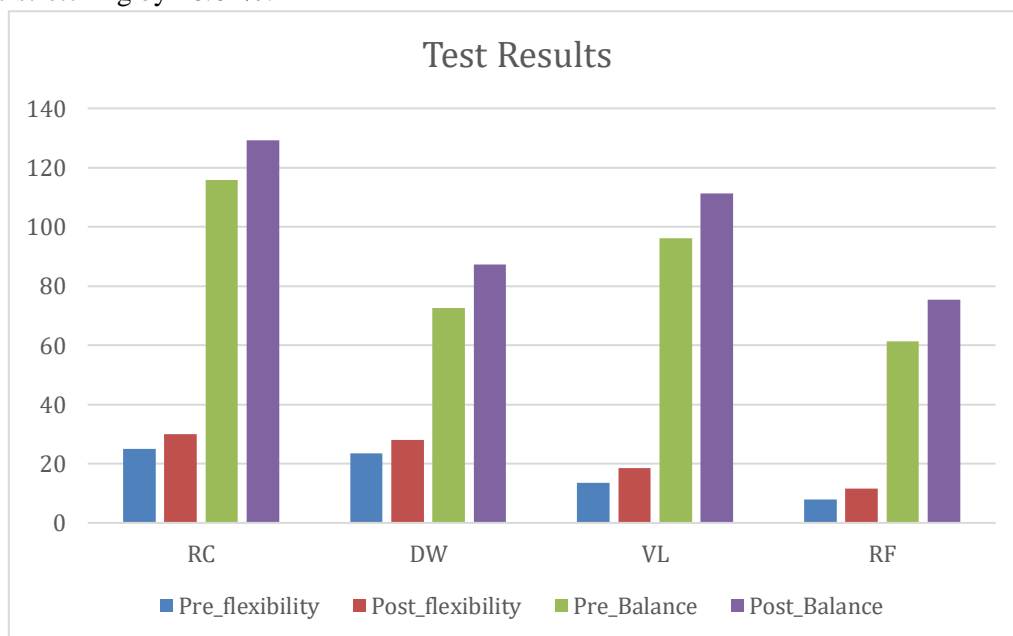
The sampling technique in this research is to use purposive sampling. The definition of purposive sampling or purposive sampling is a sampling technique whose characteristics are known in advance based on the characteristics or nature of the population (Maksum, 2012: 60). The sample intended for this research was students in grades III and IV from SDLB A YPAB Surabaya. In this study, samples were taken from 8 students who met the criteria in the research, namely mentally retarded students.

III. RESULT AND DISCUSSION

This data description discusses the average, standard deviation, highest and lowest values obtained from the results of the basketball dribbling test before (pretest) and after (posttest) in the Static stretching group obtained through static stretching exercises. Based on the results of calculations with the Statistical Program Social Science (SPSS) program for Windows 20.0. The results of the static stretching flexibility test score before being given treatment (pre-test) were an average score of 17.50; standard deviation of ± 8.134 ; with a variant of 66,167; The lowest and highest scores were 8 and 25 respectively. The results of the static stretching flexibility test scores after being given treatment (post-test) were an average score of 22.00; standard deviation of ± 8.612 ; with a variant of 74,167; The lowest and highest scores were 11.50 and 30 respectively. The pre-test and post-test static stretching change scores were an average change of 4.50; standard deviation of ± 0.707 ; with a variance of 0.500; the lowest and highest score changes were 3.50 and 5 respectively; and an average increase percentage of 25.71%. The results of the static stretching balance test score before being given treatment (pre-test) were an average score of 86.46; standard deviation of ± 24.397 ; with variants of 595,227; the lowest and highest scores were 61.26 and 115.81 respectively. The results of the static stretching balance test score after being given treatment (post-test) were an average score of 100.83; standard deviation of ± 24.073 ; with variants of 579,503; the lowest and highest scores were 75.47 and 129.21 respectively. The change score in static stretching pre-test and post-test was an average change of 14.37; standard deviation of ± 0.733 ; with a variance of 0.538; the lowest and highest score changes were 13.40 and 15.03 respectively; and an average increase percentage of 16.62%.

Description	Flexibility Test			Balance test		
	Pre-Static	Post-Static	Diff.Static	Pre-Static	Post-Static	Diff.Static
Mean	17,50	22,00	4,50	86,46	100,83	14,37
Standart Deviasion (SD)	8,134	8,612	0,707	24,397	24,073	0,733
Variant	66,167	74,167	0,500	595,227	579,503	0,538
lowest score	8	11,50	3,50	61,26	75,47	13,40
Highest score	25	30	5	115,81	129,21	15,03
Increase		25,71%			16,62%	

These results can be said to mean that the flexibility test can actually increase training results using static stretching by 25.71%. Meanwhile, the balance test turned out to be able to increase training results using static stretching by 16.62%.



IV. CONCLUSION

This research shows that static stretching activities can increase flexibility and balance in mental retardation. Flexibility and balance are very important for mental retardation, because mental retardation do not have the ability to visualize space, which makes mental retardation have limited movement. These limited movements will result in the flexibility and balance of mental retardation not being optimal. For this reason, this activity needs to be carried out continuously and sustainably, in order to maximize the potential of mental retardation. It is hoped that starting with simple movements will have a good impact, followed by more complex movements. Of course, further research is needed to get better results.

V. ACKNOWLEDGMENTS

The author would like to thank all parties who have helped complete this research. Researchers hope that this research can become a new reference for many people in dealing with mentally retarded children. It is hoped that this research can be an option in optimizing the potential of students, especially children with special needs, in this case mentally retarded children

REFERENCES

- [1] Armatas, V. (2009). “*Mental Retardation: Definition, Etiology, Epidemiology and Diagnosis*”. *Journal of Sport and Health Reserch*. Vol.1 No.2
- [2] A. Harahap, P. Hrp, N.K.A.R. Dewi, Macrozoobenthos diversity as anbioindicator of the water quality in the River Kualuh Labuhanbatu Utara, *International Journal of Scientific & Technology Research*, 9(4), 2020, pp. 179-183.
- [3] Bharati.(2012). “*Adjustment problems of Educable Mentally Retarded*”. *International Journal of Scientific and Research Publications*. Vol.02 N0.6
- [4] Eliasa, I. (2007). “*Mari Bermain Otak dengan Senam Otak*”. *Volunteer’s Week* . Jogjakarta: Tidak Diterbitkan.
- [5] Gunahardi. (2005). “*Penanganan Anak Sindroma Down dalam Lingkungan Sekolah*. Jakarta: Departemen Pendidikan Nasional.
- [6] Tarigan, N. M. R., & Wasesa, S. (2020). The Influence of Organizational Culture on Increasing Employee Motivation in Sumut Bank of Sharia Unit, North Sumatera. *Britain International of Humanities and Social Sciences (BloHS) Journal*, 2(2), 440-449.
- [7] Hannaford. (2005). “*Smart Moves*”. *Educational Kinesiology Trust*. Vol.07 No.6
- [8] Harmon, Sandra. (2014). “*Effects of Educational Kinesiology, Previous Performance, Gender, and Socioeconomic Status on Phonological Awareness Literacy Screening Scores of Kindergarten Student*”. *Educational Kinesiology Trust*. Vol.07 No.5 .
- [9] Tarigan, N. M. R., Sasongko, W. D., & Abdullah, Y. (2021). Co-Creation Through Entrepreneurial Marketing: A Study At The Creative Industries. *Academy of Entrepreneurship Journal*, 27(5), 1-8.
- [10] Harahap, Arman ,2018, *Macrozoobenthos diversity as bioindicator of water quality in the Bilah river, Rantauprapat, Medan*. *J. Phys.*: Conf. Ser. 1116 052026.
- [11] Harahap, et, all, *Macrozoobenthos diversity as anbioindicator of the water quality in the Sungai Kualuh Labuhanbatu Utara, AACL Bioflux*, 2022, Vol 15, Issue 6.
- [12] Harahap, Arman. 2020. *Species Composition & Ecology Index Of The Family Gobiidae At The Mangrove Belawan Of Sicanang Island International Journal of Scientific & Technology Research Volume 9, Issue 04, April 2020*.
- [13] Harahap, A., et all (2021), *Monitoring Of Macroinvertebrates Along Streams Of Bilah River International Journal of Conservation Sciencethis link is disabled*, 12(1), pp. 247–258.
- [14] Sarkum, S., Syamsuri, A. R., & Supriadi, S. (2020). The role of multi-actor engagement. *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 176.
- [15] Hurlock, E.B. (1978). *Perkembangan Anak Jilid I (Edisi Keenam)*. Jakarta: Erlangga.
- [16] Lutan, Rusli. (1988). *Belajar Keterampilan Motorik, Pengantar Teori dan Metode*. Jakarta:Depdikbud PPLPTK.
- [17] Mamangkey, J., Suryanto, D., et all (2021). Isolation and enzyme bioprospection of bacteria associated to *Bruguiera cylindrica*, a mangrove plant of North Sumatra, Indonesia, *Biotechnology Reports*, 2021, 30, e00617.
- [18] Muhammad, As’adi. (2011). *Dahsyatnya Senam Otak*. Yogyakarta: Diva Press
- [19] Magil, Ricard. 2001. “*Motor Learning Concep and Applications*. Singapore: Lousiana State University.

- [20] Nugroho, H.S.W. 2009. *Petunjuk Praktis Denver Developmental Screening Test*. Jakarta: Penerbit Buku Kedokteran EGC.
- [21] Supriadi, ., Dalimunthe, R. F., Lumbanraja, P., & Tarmizi, H. B. (2021). The Antecedent Of Educational Staff Contextual Performance In Medan City Private Universities. *Archives of Business Research*, 9(2), 316–338. <https://doi.org/10.14738/abr.92.9817>
- [22] Nursalim, Dkk. 2007. *Psikologi Pendidikan*. Surabaya : Unesa University Press
- [23] Spielman. 2005. “*The effects of movement based learning on student achievement in the elementary school classroom*”. *Educational Kinesiology Trust*. Vol.07 No.3.
- [24] Sugiyono. 2010. *Metode Penelitian Pendidikan*. Bandung: CV. Alfabeta.
- [25] Sugiyono. 2014. *Memahami Penelitian Kualitatif*. Bandung: CV. Alfabeta.
- [26] Kurnianingsih, H. T., & Rahayu, S. (2020). Financial Performance Assessed From Economic Value Edded (EVA) and Market Value Added (MVA) Cases in the Cosmetics Sub-Sektor and Household Needs Listed On the BEI. *Budapest International Research and Critics Institute*, 3(4), 3179-3184.
- [27] Tauchid, M.N, dan Noor, Zulkhah. 2009. “Pengaruh Senam Otak (*Brain Gym*) Terhadap Kualitas Tingkah Laku Anak Autis Di Yogyakarta”. *Jurnal Penelitian*, Universitas Muhammadiyah Yogyakarta.
- [28] Tim Penyusun, 2014. *Pedoman Penulisan Tesis dan Disertasi Program Pascasarjana Unesa*. Surabaya: Unesa
- [29] Watson, A and Ginger L.K. (2014). “*The Effect of Brain Gym® on Academic Engagement For Children With Developmental Disabilities*”. *International Journal Of Spesial Education*. Vol.29 No.02
- [30] Rahayu, S., Zufriзал, Z., Astuty, W., & Triastuti, H. (2020). Keputusan Hedging dan Faktor-Faktor yang Mempengaruhinya pada Perusahaan Pertambangan yang Terdaftar di Indeks Saham Syariah Indonesia (ISSI). *Institut Penelitian dan Kritisus Internasional Budapest-Jurnal (BIRCI-Journal)* , 3 (4), 2662-2676.
- [31] Warron, Steve. (2006). “*Psychology in Mental Retardation and Developmental Dissabilies*”. *Amerian Psychological Assosiation*. Vol.32 No.3.