

Optimization of Feldenkrais Training as a Prevention of Falling Risk in Elderly

Nungki Marlian Yuliadarwati*

*Departemen Physiotherapy, Faculty of Health Science, University of Muhammadiyah Malang
Jalan Bandung No. 1 Malang 65113, East Java, Malang, Indonesia*

Keywords: Elderly, Falling Risk, Feldenkrais

Abstract: At the time of continued mass, there will be a decrease in physiological functions or systems that will cause interference to appear. Increasing the age of life expectancy will also increase the risk of falling. This study aims to know the effect of optimizing Feldenkrais exercises as prevention of falling risk in the elderly. The method in this study uses pre-experimental research with one group pretest-posttest design approach. The Berg Balance Scale measures the fall risk. The data analysis test in this study used the Wilcoxon test using the SPSS application program. The results of the data analysis showed $P = 0,000 < \alpha = 0.05$, indicating that H1 was received from this study and H0 was rejected. In conclusion, the optimization of Feldenkrais exercises affects the risk of falls in the elderly.

1 INTRODUCTION

The elderly are an advanced stage that is passed in the life process of every human being characterized by a decrease in the ability and function of the body physically and psychologically (Fristantia, 2018). In the elderly experienced a decrease in the physiological body, especially those that are very instrumental in controlling balance such as a decrease in muscle strength, posture, fat levels that accumulate in certain areas, and some balance components namely the visual sensory system, system, vestibular, somatosensory consists of tactile or proprioceptive as well as cognitive perception (Ullmann & Williams, 2015).

Factors that influence the risk of falling is the scope of joint motion (Joint Range Of Motion), namely the ability of the joints to help body movement and direct a movement, especially when the movement requires a high balance. On decreasing the scope of joint motion in the elderly, there will be an unfavorable balance control in the elderly, thus increasing the risk of falls in the elderly (Vrantsidis et al., 2009). Data from Basic Health Research in 2013 The prevalence of injury or fall in the elderly aged 55-64 by 49.4%, elderly aged 66-74 by 67.1%, and

elderly aged over 75 by 78.2%. The increasing age of life expectancy of the elderly will also increase the risk of falling due to impaired balance (fristantia, 2018)

Data on the increased risk of falling very high above the age of 60 years and above, it is necessary to prevent the Feldenkrais method with the learning approach of a person's movements verbally guided through a series of movements which aim to increase body awareness and movement organization (Connors et al., 2011). Through increased understanding and awareness of how the body regulates movement patterns because, in this method, it discusses the patterns of movement of one's habits (Vrantsidis et al., 2009).

Elderly is a process in which the advanced stages that are passed in the process of life in every human being are characterized by a decrease in physiological and bodily functions both physically and psychologically elderly themselves (Bearman & Shafarman, 2004).

The risk of falling on the elderly is the body's ability to maintain posture stability from motor activities, which cannot be separated from existing environmental factors and regulatory systems that play a role in posture formation. The purpose of the body to maintain a posture from the risk of falling is

to support the body to defy gravity and maintain the center of mass of the body so that it is aligned and balanced with the fulcrum plane and stabilizes the body when moving into position such as walking or moving (Ahrensdoerf, Certified, Teacher, Verin, & Feldenkrais, n.d.).

A berg balance scale can measure the risk of falling in the elderly. The BBS scale was developed in 1989 using a process of interviews with patients and health professionals. There are 14 items of tests conducted for the risk of falling. Each item contains a weight of 0 to 4, with a maximum value of 56, which is the highest score indicating the risk of falling in the least elderly (Fristantia, 2018).

2 METHODS

The research subjects were 86 elderly in Rejoso sub-village, East Java, Indonesia. This type of research uses quantitative methods with pre-experimental designs with pretest and post-test design. Fall risk is measured before and after with the berg balance test. The normality test uses Kolmogorov Smirnov, and the analysis of influence data tests use Wilcoxon.

3 RESULTS AND DISCUSSION

The Feldenkrais method is a very useful exercise to train the balance, especially in the elderly. This method use re-learning, which will be guided by a sequence of proposed body movements to improve body balance. All parts of the body that support to be involved in movements such as sense organs, touching, sensation, vestibular, proprioceptive. The principle of this method is how to think, feel, and understand all the functions of each component of the body (Fonow et al., 2017).

Feldenkrais on the level of balance in the elderly in Rejoso Village, Batu City. This research was conducted for four weeks and began in April, and May 2018, and 68 samples were conducted. Then 68 samples will be given intervention in the form of the Feldenkrais method which is done 2x meetings in a week and carried out for four weeks. There are six exercises found in this Feldenkrais method, the dose of each exercise given eight times the count with three reps (Ahrensdoerf et al., n.d.).

Degeneration experienced by the elderly or increasing age will cause setbacks and changes in all systems in the body one of which is a decrease in body balance in the elderly and with increasing age

causes a decrease in the central nervous system such as vestibular, proprioceptive, and visual so that the balance is disturbed (Lindner, 2014).

In humans who have the elderly cause a decrease in the ability of both physical, financial, social, and mental. In general, humans who have entered old age often experience unfavorable health conditions such as decreased muscle strength decreased sensory system which results in disruption of balance in the body (Patel & Bipinbhai, 1956)

The results of the statistical analysis with the Wilcoxon test obtained $P = 0,000 < \alpha = 0.05$, it can be concluded that there is an effect of the optimization of the Feldenkrais method exercise on the risk of falling in the elderly in the Rejoso Village, Batu City.

The ability to carry out an activity not only involves the factors that cause the risk of falling, but there are other factors such as muscle strength, proprioception, pain, and in terms of anticipating falls (Plastaras et al., 2013). The Feldenkrais Method exercise aims to increase body mobility and is designed for the elderly especially to increase flexibility, balance, and mobility of the elderly (Palmer, 2017)

The Feldenkrais Method can be considered as a method of learning through the body that can enhance all actions or activities carried out by someone not only aspects of the mind and emotions but is designed to provide increased awareness of one's body (Igweonu, 2010). The Feldenkrais method will be directly applied by sensory systems such as the visual, vestibular, and somatosensory systems. In this method, the visual system plays a role because it is an important component of balance to provide information about the surrounding environment to anticipate future disturbances. The vestibular system is also very important in balance, head control, eyeball movement. The somatosensory system also has a role in providing information about the perceived position of movements in the body that are felt. The influence of the elderly on proprioceptive is the decrease in muscle mass and strength. Loss of strength can limit a person to do daily activities, increase the likelihood of falling in the elderly, even the loss of mechanoreceptors which can reduce proprioceptors and disturbed balance (Kampe, 2010).

In the practice of the Feldenkrais method, it is believed that when doing this method the muscles will relax due to the movement in this method is very minimal so that they can feel the movements made. Therefore, the aim of the practice of the Feldenkrais Method is to increase awareness of the body. These strategies such as changes in speed, repetition of

movements, regulating breathing patterns, and sequence of movements (Lindner, 2014).

The Feldenkrais method emphasizes motion control and movement coordination through the re-learning of the sensory system. This system is guided by proprioceptive, coordinated motion, sensation, visual, hearing power, and movement control. This technique will also increase awareness of motor movements or moving the body with maximum efficiency but with minimal effort (Joseph, Paungmali, & Mohan, 2015)

4 CONCLUSIONS

Based on the results obtained and the explanation above, it can be concluded that there is an effect of optimizing Feldenkrais exercise as a risk of falling in the elderly. It is hoped that other studies can research the Feldenkrais Method to improve balance by using reliable measuring devices so that they get more accurate results and do not spend much time. It is expected that researchers expand the population, especially the elderly so that they can increase the number of samples in this study. This research can also be used as literature or a source for future research.

REFERENCES

- Ahrendorf, V., Certified, G., Teacher, F., Verin, B. L., & Feldenkrais, M. (n.d.). The Teaching of Moshe Feldenkrais.
- Bearman, B. D., & Shafarman, S. (2004). The Feldenkrais Method In The Treatment Of Chronic Pain: A Study Of Efficacy And Cost Effectiveness, *1*, 1–7.
- Connors, K. A., Pt, M., Pile, C., Ot, B. A. S., Nichols, M. E., & Sw, B. (2011). Does the Feldenkrais Method make a difference ? An investigation into the use of outcome measurement tools for evaluating changes in clients. *Journal of Bodywork & Movement Therapies*, *15*(4), 446–452. <http://doi.org/10.1016/j.jbmt.2010.09.001>
- Fonow, M. M., Hall, W., Mall, O., Cook, J. A., Goldsand, R., & Burke-miller, J. K. (2017). Implications of the Feldenkrais Method of Somatic Education for Training College Students to be Transformational Leaders, *4*(3), 149–158.
- Fristantia, D. A. (2018). Analisa Faktor-Faktor Yang Berhubungan Dengan Resiko Jatuh Pada Lansia yang Tinggal Di Rumah. *Universitas Riau*, 161–170. Retrieved from file:///E:/JURNAL SPORT SCIENCE/resiko jatuh/faktor resiko jatuh.pdf
- Igweonu, K. (2010). *Feldenkrais Method in Performer Training*.
- Joseph, L., Paungmali, A., & Mohan, V. (2015). ScienceDirect Feldenkrais method and movement education – An alternate therapy in musculoskeletal rehabilitation. *Polish Annals of Medicine*, 1–7. <http://doi.org/10.1016/j.poamed.2015.05.007>
- Kampe, T. (2010). “ Weave ”: The Feldenkrais Method as Choreographic Process, *1*(2).
- Lindner, G. (2014). Reducing fall risk in the elderly : risk factors and fall prevention, a systematic review (October).
- Palmer, C. F. (2017). Feldenkrais Movement Lessons Improve Older Adults ’ Awareness, Comfort, and Function. <http://doi.org/10.1177/2333721417724014>
- Patel, M., & Bipinbhai, D. (1956). “ Effectiveness Of The Alexander Technique And The Feldenkrais Technique For Improving The Body Balance In Older Adults : A Comparative Study” (March 2012).
- Plastaras, C., Schran, S., Plastaras, C., Schran, S., Kim, N., Darr, D., & Chen, M. S. (2013). Manipulative Therapy (Feldenkrais, Massage, Chiropractic Manipulation) for Neck Pain Manipulative Therapy (Feldenkrais, Massage, Chiropractic Manipulation) for Neck Pain, (July). <http://doi.org/10.1007/s11926-013-0339-x>
- Ullmann, G., & Williams, H. G. (2015). ScienceDirect The Feldenkrais Method â can enhance cognitive function in independent-living older adults : A case series. *Journal of Bodywork & Movement Therapies*, 1–6. <http://doi.org/10.1016/j.jbmt.2015.11.017>
- Vrantsidis, F., Hill, K. D., Moore, K., Webb, R., Hunt, S., & Dowson, L. (2009). Getting Grounded Gracefully © : Effectiveness and Acceptability of Feldenkrais in Improving Balance, 57–76.