



THE EFFECT OF TERA EXERCISE ON REDUCING ANXIETY LEVELS IN THE ELDERLY IN WONOHARJO VILLAGE, BUMI AGUNG DISTRICT, WAY KANAN LAMPUNG

Putri Pamungkas¹ , Dwi Setiani Sumardiko^{*2} , Ariska Putri Hidayatullah¹ ,
Heri Nur Cahyanto¹

¹Institute of Health and Bussines Surabaya, Indonesia

²Faculty of Vocational Studies, Universitas Airlangga, Surabaya, Indonesia

Research Report

ABSTRACT

Introduction: Anxiety is a feeling of fear that is not clear and is not supported by the situation. Usually, anxiety or anxiety disorders will be accompanied by behavioral, emotional, and physiological changes (Kaliman, 2011) Anxiety in the elderly if not handled properly then the anxiety will have an impact on increasing mental disorders. Therefore, Tera exercise therapy is needed which is expected to reduce anxiety in the elderly **Methods:** The method in this study is a quantitative research type with a quasi-experimental research design with a pretest post-test control group approach. The sample in this study was the elderly who suffered from anxiety as many as 36 respondents who met the inclusion criteria. Collecting data in the study using a questionnaire sheet and data analysis using the Wilcoxon rank test statistical test. **Results:** The results of the Wilcoxon sign rank test with SPSS for Windows with a significance level of $\alpha = 0.05$ obtained a P value = 0.001 ($0.001 < 0.05$) then H_0 is rejected which means there is an effect of Tera exercise on decreasing anxiety levels in the elderly in Wonoharjo Village, Bumi Agung District, Way Kanan Lampung. **Conclusions:** For elderly who experience anxiety ranging from severe, moderate, and mild levels using tera exercise therapy can reduce anxiety levels in the elderly because it can cause them elderly to relax, feel comfortable, and happy, and interact with other elderly people.

INTRODUCTION

The elderly is the final stage in the life process which causes many physical, psychological, and social changes, which are interconnected with each other, so that they have the potential to cause physical health problems. (Wijaya & Nurhidayati, 2020) Based on United Nations (UN) data on World Population Aging, it is estimated that in 2017 there were 901 million elderly people in the world. According to WHO in 2020, this number is projected to continue to increase to reach 2 billion people in 2050. As is happening in other countries in the world, Indonesia is also experiencing population aging. There was an increase in the number of elderly people from 2017 of 22 million (8.5%) to 27.5 million (10.3%) in 2021. Meanwhile in Wonoharjo Village, sub-district. Bumi Agung District. Way Kanan, there will be 95 elderly people in 2021.

If anxiety in the elderly is not handled properly, this anxiety will have an impact on increasing mental disorders. Therefore, therapy is needed which is expected to reduce anxiety in the elderly. There are two ways of treatment, namely pharmacological and non-pharmacological therapy. In pharmacological therapy, using chemical drugs for a long time can cause side effects that can harm the user, such as kidney problems. The drugs that are often used are anti-anxiety drugs (anti-depressants), while non-pharmacological therapy uses

tera exercise therapy (Ng et al., 2020) The prevalence of anxiety is quite high, according to WHO in 2017 around 3.6% of the world's population was affected by anxiety. The prevalence of anxiety in Indonesia at ages 55-64 years is 11%, at ages 65-74 years is 12.8%, and at ages over 75 years is 15.8% (Siregar & Nasution, 2020). Meanwhile, the results of a preliminary study conducted by researchers on October 28, 2021, by distributing questionnaires to the elderly in Wonoharjo Village, sub-district. Bumi Agung district. Way Kanan, 36 people experiencing anxiety out of the total number of elderly people with a total of 95 people.

Based on the results of measuring the lung-heart fitness of the elderly using the Rockport method, before the Indonesian Tera Gymnastics training, it was found that the lowest heart-lung fitness was 18 ml/kg/minute, the greatest heart-lung fitness was 23 ml/kg/minute and the average was 21 ml/kg/minute. After the Indonesian Tera Gymnastics training, the smallest cardiopulmonary fitness was found to be 19 ml/kg/minute, the greatest cardiopulmonary fitness was 24 ml/kg/minute and the average was 21.87 ml/kg/minute. Increasing cardiopulmonary fitness is mainly achieved through increasing maximum aerobic power with good, correct, measurable, and regular physical exercise, according to (Amiman et al., 2019).

ARTICLE INFO

Received September 14, 2023

Accepted December 18, 2023

Online May 30, 2024

*Correspondence:

Dwi Setiani Sumardiko

E-mail:

dwi.setiani.s@vokasi.unair.ac.id

Keywords:

Anxiety in the Elderly, Elderly, Exercise TERA



Management that can be given to elderly people who experience anxiety is exercise. The type of exercise recommended for the elderly is dynamic aerobic exercise to maintain stamina and flexibility (Parwati et al., 2013). The recommended exercise intensity for the elderly is low intensity at 60-75% of the maximum heart rate, one of the low-intensity aerobic sports is tera gymnastics (Siregar & Nasution, 2020). Tera gymnastics is a breathing exercise combined with movement and adopted from Tai Chi exercises. The word Tera itself comes from the word therapy which means exercise 2 which functions as therapy (Zimmer et al., 2018).

The tera gymnastics movement elements consist of 17 stretching movements, 25 joint movements, and 19 basic breathing movements (Transyah & Rahma, 2020). The advantage of tera exercise is that all movements in tera exercise can reduce anxiety, stress, and reduce levels of depression (Parwati et al., 2013).

The underlying reason for carrying out this research is that because there are so many anxiety problems in the elderly, there is a need for more advanced but simpler treatment methods so that they can reduce the burden of care. One way to deal with anxiety is by providing a form of gymnastics training.

RESULTS

Table 1. Frequency distribution of patient families based on gender, age, education, and family relation ship with patients in the emergency room of PKU Muhammadiyah Sukoharjo Hospital in June 2023 (n=57).

Anxiety Level	Pre				Post			
	Case		Control		Case		Control	
	N	%	N	%	N	%	N	%
Not Anxious	0	0	0	0	0	0	0	0
Light	6	33,3	0	0	6	33,3	1	5,6
Currently	11	61,1	15	83	11	61,1	7	38,9
Heavy	1	5,6	3	17	1	5,6	10	55,5
Panic	0	0	0	0	0	0	0	0
Total	18	100	18	100	18	100	18	100
Uji statistik Mann Whitney Test Exact Sig (2-tailed) = 0,002								
Uji statistik Wilcoxon Sign Rank Test								
Asymp Sig (2-tailed) = 0,001								
Negative rank = 11								
Positive rank = 0								
Ties = 7								

Based on table 1, shows that of the respondents in the treatment group after being given Tera exercises, the majority (61.1%) of respondents experienced moderate anxiety and a small portion (5.6%) of respondents experienced severe anxiety. Meanwhile, the control group (without Tera exercises) showed that the majority (55.5%) of respondents experienced severe anxiety and a small portion (5.6%) of respondents experienced mild anxiety.

The results of the Mann-Whitney test with SPSS for Windows with a significance level of $\alpha = 0.05$ showed a value of $P=0.002$ ($0.002 < 0.05$), so H_0 was rejected, which means there is a difference in the level of anxiety in the elderly between the treatment group (Tera gymnastics) and the control group without Tera exercise) in Wono-

MATERIALS AND METHODS

Type of Research This research uses a quantitative type of research with a quasi-experimental approach. This research is a type of quantitative research with a research design using a quasi-experiment with a pre-test and post-test control group approach. A parallel design was used to compare two independent groups (group comparison), namely the control group and the intervention group. The population in this study were elderly people who experienced anxiety disorders in Wonoharjo Village, District. Bumi Agung District. Way Kanan as many as 95 respondents. with a sample of 36 respondents. The anxiety questionnaire uses the GAI (Geriatric Anxiety Inventory) which is specifically designed to assess anxiety in the elderly, with a score of 0-20. Each of the data above will be measured using the Wilcoxon rank test, namely a statistical test comparing two paired samples with ordinal scale variables using a significance level of $p < 0.05$.

harjo Village, Bumi Agung District, Way Kanan Lampung.

Based on the table, it shows that before being given tera exercises, almost half (61.1%) of the group of respondents experienced moderate anxiety, 38% of respondents experienced severe anxiety and a small portion (5.6%) of respondents experienced panic anxiety. After being given Tera exercises, the majority (61.1%) of respondents experienced moderate anxiety and a small percentage experienced severe anxiety (5.6%).

The results of this study illustrate that 11 respondents experienced a decrease in anxiety levels after being given Tera exercises, it was found that 7 respondents had no increase or decrease in anxiety levels after being given Tera exercises, and none of the respondents experienced an increase in anxiety levels

after being given Tera exercises. The results of the Wilcoxon sign rank test with SPSS for Windows with a significance level of $\alpha = 0.05$ showed a value of $P=0.001$ ($0.001 < 0.05$), so H_0 was rejected, which means that there is an effect of Tera exercise on reducing the level of anxiety in the elderly in the village. Wonoharjo, Bumi Agung District, Way Kanan Lampung.

DISCUSSION

This is in accordance with the opinion (Pratiwi, 2021) that one of the causes of anxiety is a person's work or activities. Too much or too little can cause anxiety. Lack of social activity also results in reduced integrity with the environment, resulting in anxiety.

This is in accordance with the theory of (Ratnah et al., 2022) that there is anxiety due to the loss of social support. Elderly people without social support tend to withdraw from environments that do not provide support or comfort to them. Another opinion (Manalu, 2021) is that the belief in having extensive social contact will protect the body's immune system against stress. Individuals with high social support will experience low stress and can deal with stress with better coping.

Describe the significance of your findings. Consider the most important part of your paper. Do not be verbose or repetitive, be concise and make your points clearly. Follow a logical stream of thought; in general, interpret and discuss the significance of your findings in the same sequence you described them in your results section. Use the present verb tense, especially for established facts; however, refer to specific works or prior studies in the past tense. If needed, use subheadings to help organize your discussion or to categorize your interpretations into themes. The content of the discussion section includes the explanation of results, references to previous research, deduction, and hypothesis.

The research results show that tera exercise intervention can reduce anxiety levels. In accordance with the functional consequences theory by (Zimmer et al., 2018). (Hernawan & Rosyid, 2017), providing an intervention can change a negative functional consequence into a positive functional consequence. In this study, providing intervention in the form of tera exercises can change negative functional consequences, namely anxiety, into positive functional consequences, namely reducing anxiety levels. This research is in line with previous research (Saputra & Fatrida, 2019). In this study, the results showed that there was a significant effect of tera-exercise intervention on stress levels, however, the provision of tera exercise on anxiety still needs to be studied further. Another opinion is by (Yusli & Rachma, 2019), that tera exercise can improve heart and lung fitness, and is achieved through increasing aerobic power with good, correct, measurable, and regular physical exercise.

Most respondents admitted that they were comfortable when doing exercise. The complaints of anxiety and worry that were felt slowly disappeared. This agrees with research conducted by (Nasuha et al., 2016) elderly exercise provides benefits in creating a better

mood so that elderly people who regularly participate in sports activities will always feel comfortable. A comfortable feeling condition allows individuals to optimize functioning mental processes and also influences the individual's ability to face any problems that can cause stress. Apart from that, all respondents said they enjoyed taking part in gymnastics because they could interact with other respondents and provide new activities.

This agrees with research conducted by (Gray et al., 2006), that exercise carried out in groups and accompanied by music can provide a feeling of comfort and security, as well as create joy and togetherness among the elderly, therefore sport, in this case, elderly exercise, still plays a role in changing the level of anxiety in the elderly. Another opinion by Bender et al. (Nugroho & Sari, 2019) explained that intense exercise can increase β endorphins. (Nurhaedah & Herman, 2020) added that the production of β endorphins during exercise will make individuals happy, joyful, able to sleep more soundly, and the mind remains fresh, apart from that, during physical activity and exercise, psychological and neurobiological mechanisms will emerge so that antidepressant effects can arise and anxiolytics which can reduce anxiety levels.

CONCLUSIONS

Most of the emergency room nurses at PKU MuhElderly people experience anxiety ranging from severe, moderate, and mild levels. Causes of anxiety for the elderly in Wonoharjo Village, Bumi Agung District, Way Kanan Lampung is caused by several factors such as worry about family, lack of family support, level of education, age, physical illness, fear of death, and not being able to adapt to new friends. Tera exercise can reduce anxiety levels in the elderly in Wonoharjo village, Bumi Agung District. Way Kanan Lampung because it can make elderly people relaxed, comfortable, happy, and able to interact with other elderly people.

REFERENCES

- Amiman, S. P., Katuuk, M., & Malara, R. (2019). Gambaran tingkat kecemasan pasien di instalasi gawat darurat. *Jurnal Keperawatan*, 7(2). 1-6. <https://doi.org/10.35790/jkp.v7i2.24472>
- Gray, N. M., Sharp, L., Cotton, S. C., Masson, L. F., Little, J., Walker, L. G., Avis, M., Philips, Z., Russell, I., & Whynes, D. (2006). Psychological effects of a low-grade abnormal cervical smear test result: anxiety and associated factors. *British Journal of Cancer*, 94(9), 1253–1262. [10.1038/sj.bjc.6603086](https://doi.org/10.1038/sj.bjc.6603086)
- Hernawan, T., & Rosyid, F. N. (2017). Pengaruh senam hipertensi lansia terhadap penurunan tekanan darah lansia dengan hipertensi di panti wreda Darma Bhakti Kelurahan Pajang Surakarta. *Jurnal Kesehatan*, 10(1), 26–31. DOI: [10.23917/jk.v10i1.5489](https://doi.org/10.23917/jk.v10i1.5489)
- Kaliman, P., Parrizas, M., Lalanza, J. F., Camins, A., Escorihuela, R. M., & Pallas, M. (2011). Neurophysiological and epigenetic effects of physical exercise on the aging process. *Ageing*

- Research Reviews, 10(4), 475–486. doi: 10.1016/j.arr.2011.05.002
- Manalu, S. R. I. K. (2021). Karya Tulis Ilmiah Literature Review: Pengaruh Senam Rematik Terhadap Pengurangan Skala Nyeri Pada Lansia Dengan Osteoarthritis.
- Nasuha, N., Widodo, D., & Widiani, E. (2016). Pengaruh Teknik Relaksasi Nafas Dalam Terhadap Tingkat Kecemasan Pada Lansia di Posyandu Lansia RW IV Dusun Dempok Desa Gading Kembar Kecamatan Jabung Kabupaten Malang. *Nursing News: Jurnal Ilmiah Keperawatan*, 1(2). <https://doi.org/10.33366/nn.v1i2.423>
- Ng, T. K. S., Fam, J., Feng, L., Cheah, I. K.-M., Tan, C. T.-Y., Nur, F., Wee, S. T., Goh, L. G., Chow, W. L., & Ho, R. C.-M. (2020). Mindfulness improves inflammatory biomarker levels in older adults with mild cognitive impairment: a randomized controlled trial. *Translational Psychiatry*, 10(1), 21. doi: 10.1038/s41398-020-0696-y.
- Nugroho, S. H. P., & Sari, R. Y. (2019). Senam Yoga Untuk Menurunkan Intensitas Nyeri Pada Penderita Osteoarthritis Di Wilayah Kerja Puskesmas Babat Lamongan. *ABDIMAS: Jurnal Pengabdian Masyarakat*, 2(2), 148–153.
- Nurhaedah, N., & Herman, H. (2020). Pengetahuan Pasien Tentang Penyakit TB Paru Di Balai Besar Kesehatan Paru Masyarakat Makassar. *Jurnal Ilmiah Kesehatan Sandi Husada*, 9(2), 609–614.
- Parwati, N. M., Karmaya, I. N. M., & Sutjana, D. P. (2013). Senam tera Indonesia meningkatkan kebugaran jantung paru lansia di Panti Werdha Wana Seraya Denpasar. *Public Health and Preventive Medicine Archive*, 1(1), 24–28. <https://doi.org/10.15562/phpma.v1i1.154>
- Pratiwi, P. (2021). Pengaruh Senam Tera Terhadap Tekanan Darah Dan Kadar Glukosa Darah Sewaktu Pada Lansia Di PSTW Nirwana Puri Samarinda.
- Ratnah, I., Ners, S. K., Kep, M., Lina Indrawati, S., Imani, M. A. L., & Cahyani, P. R. (2022). Pengaruh Senam Rematik Terhadap Skala Nyeri Pada Lanjut Usia Dengan Rematik Lutut Di Satuan Pelayanan Rehabilitas Sosial Lanjut Usia Karawang 2022.
- Saputra, A., & Fatrida, D. (2019). Health edukasi pentingnya cuci tangan pakai sabun (CTPS) di Sekolah Dasar Negeri 2 Mangunjaya. *Khidmah*, 2(1), 31–38. <https://doi.org/10.52523/khidmah.v2i1.299>
- Siregar, H. R., & Nasution, N. H. (2020). Senam Rematik pada Lansia di Panti Jompo Basilam di Kota Padangsidempuan Tahun 2020. *Jurnal Pengabdian Masyarakat Aufa (JPMA)*, 2(1), 46–48.
- Transyah, C. H., & Rahma, D. (2020). Systematic Review: Pengaruh Senam Rematik Terhadap Skala Nyeri Lansia Dengan Rheumatoid Arthritis. *Jurnal Amanah Kesehatan*, 2(2), 64–74.
- Wijaya, E., & Nurhidayati, T. (2020). Penerapan Terapi Relaksasi Otot Progresif Dalam Menurunkan Skala Nyeri Sendi Lansia. *Ners Muda*, 1(2), 88. <https://doi.org/10.26714/nm.v1i2.5643>
- Yusli, U. D., & Rachma, N. (2019). Pengaruh pemberian terapi musik gamelan jawa terhadap tingkat kecemasan lansia. *Jurnal Perawat Indonesia*, 3(1), 72–78. <https://doi.org/10.32584/jpi.v3i1.290>
- Zimmer, P., Bloch, W., Schenk, A., Oberste, M., Riedel, S., Kool, J., Langdon, D., Dalgas, U., Kesselring, J., & Bansi, J. (2018). High-intensity interval exercise improves cognitive performance and reduces matrix metalloproteinases-2 serum levels in persons with multiple sclerosis: A randomized controlled trial. *Multiple Sclerosis Journal*, 24(12), 1635–1644. doi: 10.1177/1352458517728342.