

**Original Article**

**Progressive Muscle Relaxation for Sleep Quality in Menopausal Women's**

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**ABSTRACT**

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**Keywords:**


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**Background:** Problems that often occur in women who experience menopause psychologically are emotional disturbances, feelings of fear, anxiety, irritability, difficulty concentrating, depression, and impaired libido. Physiologically there are problems, including pain during intercourse, menstrual cycles and increasingly varied bleeding patterns, hot flashes (repeated periods of sweating), respiratory problems, vaginal dryness, dry skin, disturbed sleep patterns, and sleep quality. During the transition process of menopausal women, sleep quality is one of the most common and disturbing problems. This research aims to analyze the influence of Progressive Muscle Relaxation (PMR) on Sleep Quality in Menopausal Women.

**Methods:** this research, using the purposive sampling technique, the researcher selected the respondents according to the inclusion criteria so that respondents have the same opportunity to be selected. In the intervention group, respondents were given progressive Muscle Relaxation (PMR). The sampling method is non-probability sampling with a purposive sampling technique. The number of samples is 17 respondents, carried out at menopause in Badang Village, Ngoro District, Jombang Regency on 04 - 19 July 2023. The analysis used the Wilcoxon Signed Ranks Test.

**Results:** Statistical test results using the Wilcoxon Signed Ranks test obtained  $p$  value = .000, which means that there is an influence of progressive Muscle Relaxation (PMR) in improving Sleep Quality in Menopausal Women Dusun Wates Elderly Posyandu Badang Village, Ngoro District, Jombang Regency.


**Conclusion:** Progressive Muscle Relaxation (PMR) is Effectively used to help improve sleep quality in postmenopausal women. Because the therapy trains the muscles of the head, neck, arms, and back in a controlled manner, it works against the sympathetic nervous system to achieve a relaxed and calm state and is easy to do.

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
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**Introduction**

Menopause in a woman's life is a critical process that every woman will experience. Naturally, a decrease in the function of female organs occurs in women

aged 45-55, whose ovaries cannot produce the hormone estrogen. The progressive loss of estrogen and progesterone during menopause increases a woman's health risks, which will affect her quality of life



([Amanda et al.](#), 2019). The psychological problems that often occur in women experiencing menopause are emotional disturbances, feelings of fear, anxiety, irritability, difficulty concentrating, depression, and impaired libido. Physiologically there are problems, including pain during intercourse, menstrual cycles and increasingly varied bleeding patterns, hot flashes (repeated periods of sweating), respiratory problems, vaginal dryness, dry skin, disturbed sleep patterns, and sleep quality. During the transition process of menopausal women, sleep quality is one of the most common and disturbing problems([Fara et al.](#), 2019). Hormonal changes can cause hormonal imbalances, causing the sleep quality of menopausal women to decrease([Princess Amanda](#), 2019). Several factors affect the decrease in sleep quality, including health problems, environmental conditions, stress, anxiety, depression, and consumption of drugs, enthusiasm for someone who does progressive muscle relaxation ([Manurung & Adriani](#), 2017).

In Indonesia, it is predicted that by 2025, there will be 60 million women who will experience menopause. In 2016, in Indonesia, menopausal women reached 14 million, or 7.4% of the total population. ([Fara et al.](#), 2019). Based on data from the East Java Provincial Health Office in 2017, it is known that the number of menopausal women aged 45-55 years reached 107,746 people (17.8%). The interview results showed that 15 menopausal women were in the Jombang area, especially in Badang Village, Ngoro District, Jombang Regency. From the ten people who were interviewed, seven menopausal women complained of decreased sleep quality, while three menopausal women complained of experiencing other menopausal symptoms.

Menopause and disruption of sleep patterns in the aging process, where many

women experience symptoms of restlessness during sleep, waking up at night, and difficulty sleeping. A decrease in the quality of sleep that occurs in the long term will cause a decrease in endurance, decreased work performance, fatigue, stress, anxiety, depression, irritability, and decreased concentration power, which can affect one's safety as well as that of others.([Kanender et al.](#), 2015). Research results ([Manurung & Adriani](#), 2017) 8 mentioned that progressive muscle relaxation can improve sleep quality. Progressive muscle relaxation techniques focus on muscle activity by identifying tense muscles and then reducing tension by doing relaxation techniques to get a feeling of calm and comfort ([Sari et al.](#), 2020).

Health education for postmenopausal women regarding the long-term impact will help reduce the symptoms experienced and improve their sleep quality. A decrease in the quality of sleep that is not managed properly will cause a decrease in physical strength in these menopausal women. In normal menopausal women, sleep quality can be managed properly; this can be seen by their ability to avoid the causes of decreased sleep quality and can mention ways to deal with it ([Widjayanti](#), 2017).

Relaxation can also improve sleep quality in menopausal women ([Aprilyawan et al.](#), 2021). Progressive Muscle Relaxation (PMR) is relaxation by focusing attention on a muscle activity accompanied by music so that it can identify tense muscles and then reduce tension by doing relaxation techniques to get a relaxed and calm feeling ([Dewi et al.](#), 2015). Progressive Muscle Relaxation (PMR) can provide more satisfying results to reduce muscle tension, anxiety, and depression, facilitate sleep, reduce fatigue, relax the body, reduce high blood pressure and mild phobias, and increase concentration (David, 2016). This is supported by research ([Sari et al.](#), 2020),

which states that Progressive Muscle Relaxation (PMR) can improve sleep quality, including sleep time, sleep interval, sleep deficiency, and sleep duration.

### Methods

This quantitative research uses a quasi-experimental design with a pretest-posttest design approach using purposive sampling techniques. The researcher selected the respondents according to the inclusion criteria so that respondents have the same opportunity to be selected. The number of samples is 17 respondents. The

respondent is given Progressive Muscle Relaxation (PMR)—a sleep quality instrument that uses the Pittsburgh Sleep Quality Index or PSQI. The results showed the changes in Menopausal Women's Sleep Quality at Elderly Posyandu, Wates Hamlet, Badang Village, Ngoro District, Jombang Regency. Ethical Clearance at KEPK Stikes Pemkab Jombang Number 0723040004/KEPK/STIKES-PEMKAB/JBG/VI/2023. The research was conducted from July 4 to 19, 2023—analysis using the Wilcoxon Signed Ranks Test.

### Results

Table 1. Data on the frequency distribution of age, sex, education, and Menarche Menopausal Women

Characteristic Data	Frequency	%
<b>Age</b>		
45 – 50 years	8	47,1
51 – 55 years	9	52,9
<b>Education</b>		
Basic (Elementary-Junior High School)	9	52,9
Intermediate (High School)	6	35,3
Higher Education (PT)	2	11,8
<b>Menarche</b>		
9-10 years	4	23,5
11-12 years	8	47,1
13-14 years	3	17,6
15-16 years	2	11,8

Table 2. Frequency distribution data Menopausal women's sleep quality before administration of Progressive Muscle Relaxation (PMR)

Variable	Category	Before Intervention	
		N	Percentage
Sleep Quality	Quality	-	-
	Less quality	3	17,6
	Not quality	14	82,4
	Total	17	100



Table 3. Frequency distribution data Menopausal women's sleep quality after administration of Progressive Muscle Relaxation (PMR)

Variable	Category	After Intervention	
		N	Percentage
Sleep Quality	Quality	15	88.2
	Less quality	2	11,8
	Not Qualify	-	-
Total		17	100

Table 4. Analysis correlation Progressive Muscle Relaxation (PMR) on Sleep Quality in Menopausal Women

Variable	Category	Before Intervention		After Intervention	
		N	Percentage	N	Percentage
		Sleep Quality	Quality	-	-
Less quality	3		17,6	2	11,8
Not Qualify	14		82.4	-	-
Total		17	100	17	100

Statistical test results using the Wilcoxon Signed Ranks test obtained p value = .000

Table 1 shows that most respondents (52.9%) are 51-55 years old. The education of the majority of respondents (52.9%) is basic. Nearly half of the respondents (47.1%) menarche between 11-12 years old. Table 2 shows that menopausal women's sleep quality before administration is low. Nearly all Progressive Muscle Relaxation (PMR) (82.4%) is low quality. Table 3. shows that menopausal women's sleep quality after administration (88.2%) is of good quality Progressive Muscle Relaxation (PMR). Table four shows that the statistical test results use the test Wilcoxon Signed Ranks Obtained p value = .000, which means that there is an influence of Progressive Muscle Relaxation (PMR) in improving Sleep Quality in Menopausal Women Dusun Wates Elderly Posyandu Badang Village, Ngoro District, Jombang Regency.

### Discussion

#### Menopausal women's sleep quality before intervention Progressive Muscle Relaxation (PMR)

The results of research conducted by the Elderly Posyandu Dusun Wates Badang Village, Ngoro District, Jombang Regency based on Table 1. show that most respondents (52.9%) are 51-55 years old. The education of the majority of respondents (52.9%) is basic. Nearly half of the respondents (47.1%) menarche between 11-12 years old. Table 4.2 shows that menopausal women's sleep quality before administration is low. Nearly all

Progressive Muscle Relaxation (PMR) (82.4%) is low quality. This is in line with research ([Sugijantoro et al., 2022](#)), which states that the description of sleep quality in menopausal women is not quality.

Based on the description above, it shows that women in the age range of 51-55 years experience changes in the levels of estrogen and progesterone, which can trigger lifestyle changes, especially in sleeping habits. This is because the role of the hormone progesterone decreases, making it difficult to sleep. A decrease in poor sleep quality can be managed properly if postmenopausal women can do physical

exercise, one of which is progressive muscle relaxation therapy ([Sugijantoro et al., 2022](#)). In the range of education, it will be easier for someone to receive information. Some menopausal women overcome the decrease in sleep quality experienced only by using drugs so that the fulfillment of physical activity is not given enough attention. Doing physical activity can load tense muscle attention and then reduce the tension to get a relaxed feeling ([Mazida & Wijaya, 2022](#)).

### Menopausal women's sleep quality after intervention Progressive Muscle Relaxation (PMR)

The results of research conducted by the Elderly Posyandu Dusun WatesBadang Village, Ngoro District, Jombang RegencyBased on Table 3. show that menopausal women's sleep quality after administration almost all (88.2%) are of good quality Progressive Muscle Relaxation (PMR). In this study, the results of testing the hypothesis stated that Progressive Muscle Relaxation (PMR) improves the sleep quality of menopausal women at the Elderly Posyandu Dusun Wates, Badang Village, Ngoro District, Jombang Regency.

Progressive Muscle Relaxation(PMR) is useful as a center of attention on muscle activity to identify tense muscles to be relaxed by relaxation techniques([Sari et al., 2020](#)). Progressive Muscle Relaxation (PMR) therapy also provides better results in reducing muscle tension, anxiety, and depression, facilitating sleep, reducing fatigue and muscle cramps, and increasing concentration ([Putri, A., 2019](#)). The above is also supported by research([Ariana et al., 2020](#)), who stated that progressive muscle relaxation accompanied by music could improve the sleep quality of post-menopausal women, including sleep time, sleep intervals, sleep deficiency, and sleep duration.

### Analysis correlation Progressive Muscle Relaxation (PMR) on Sleep Quality in Menopausal Women

The results of research conducted by the Elderly Posyandu Dusun WatesBadang Village, Ngoro District, Jombang Regencybased on Table 4. Shows that the statistical test results use the test Wilcoxon Signed Ranks Obtained p value = .000, which means that there is an influence Progressive Muscle Relaxation (PMR) in improving Sleep Quality in Menopausal WomenDusun Wates Elderly Posyandu Badang Village, Ngoro District, Jombang Regency. This is in line with research([Ariana et al., 2020](#)). Progressive muscle relaxation can improve sleep quality. It is also supported by research([Aprilyawan et al., 2021](#)), who also say progressive muscle relaxation can improve sleep quality.

Deterioration of sleep quality in the long term can cause decreased endurance, fatigue, depression, irritability, and decreased concentration power. Progressive muscle relaxation is a non-pharmacological treatment that can help improve sleep quality([Manurung & Adriani, 2017](#)). This is because progressive muscle relaxation works by focusing on muscle activity, identifying tense muscles, and then reducing tension by using relaxation techniques to get a relaxed feeling ([Munira et al., 2020](#)). This therapy can also improve the quality of sleep because it works opposite the sympathetic nerves to achieve a relaxed and calm state so that this sensation is passed on to the hypothalamus to produce corticotropin-releasing factor, which can then stimulate the pituitary gland, where this gland aims to increase the hormone endorphins enkephalin and serotonin and can improve sleep quality in postmenopausal women.

Progressive muscle relaxation therapy

is effectively used to help improve sleep quality in menopausal women. Progressive muscle relaxation therapy trains the muscles of the head, neck, arms, and back in a controlled manner, working against the sympathetic nervous system to achieve a relaxed and calm state (Permatasari et al., 2022). This feeling of relaxation is passed on to the hypothalamus to produce corticotropin-releasing factor (CRF), which stimulates the pituitary gland to increase endorphins, enkephalins, and serotonin. Physiologically, the need for sleep to be fulfilled results from a decrease in the activity of the RAS (Reticular Activation System) and norepinephrine as a decrease in the activity of the brainstem system. The relaxation response occurs because the activity of the parasympathetic autonomic nervous system is stimulated, causing changes that can control the activity of the autonomic nervous system in the form of decreased oxygen function, respiratory rate, pulse, muscle tension, blood pressure, and alpha waves in the brain resulting in a relaxation response. one can fall asleep easily (Putri, A, 2019). Researchers argue that based on theory and research, progressive muscle relaxation is highly recommended to improve the sleep quality of menopausal women.

## Conclusion

Menopausal women's sleep quality before administration is almost all of them and they are Progressive Muscle Relaxation (PMR). Menopausal women's sleep quality after administration, almost all of them are of good quality Progressive Muscle Relaxation (PMR). Progressive Muscle Relaxation (PMR) effectively improves sleep quality for menopausal women at the Elderly Posyandu, Dusun Wates, Badang Village, Ngoro District, Jombang Regency.

## Authors Contributions

ADA is in charge of conceptual ideas in research, CPB carries out statistical application of data, EAM carries out preparation review and editing

## Conflicts of Interest

In completing this research, there is no conflict of interest.

## Acknowledgment

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## References

- Amanda, S. P., Rejeki, S., & Susilawati, D. (2019). Pengaruh Relaksasi Otot Progresif Terhadap Kualitas Tidur Pada Perempuan Menopause. *Cendekia Utama*, 8(2).
- Aprilyawan, G., Suryo Wibowo, T., & Keperawatan Sekolah Tinggi Ilmu Kesehatan Rana Wijaya Singaraja, P. (2021). Pengaruh Relaksasi Otot Progresif terhadap Kualitas Tidur Lansia. In *Indonesian Journal of Health Research* (Vol. 4, Issue 1).
- Ariana, P. A., Putra, G. N. W., & Wiliantari, N. K. (2020). Relaksasi Otot Progresif Meningkatkan Kualitas Tidur pada Lansia Wanita. *Jurnal Keperawatan Silampari*, 3(2), 416-425. <https://doi.org/10.31539/jks.v3i2.1051>
- Daud, I. (2016). Pengaruh Terapi Relaksasi Otot Progresif Terhadap Kualitas Tidur Pada Lansia Di Panti Tresna Werdha Budi Sejahtera Martapura. *Stikes Muhammadiyah Banjarmasin*.

- Dewi, S., Bayhakki, & Misrawati. (2015). Pengaruh Relaksasi Otot Progresif Terhadap Insomnia Pada Penderita Congestive Heart Failure. *JOM*, 2(1).
- Fara, Y. D., Pujiastuti, R. S. E., & Hadisaputro, S. (2019). Yoga Increases the Quality of Sleep in Menopause Women. *Indonesian Journal of Medicine*, 4(3), 278–284. <https://doi.org/10.26911/theijmed.2019.04.03.11>
- Kanender, Y. R., Palandeng, H., Kallo, V. D., & Kedokteran, F. (2015). Pengaruh Terapi Relaksasi Otot Progresif Terhadap Perubahan Tingkat Insomnia Pada Lansia Di Panti Werdha Manado. *EJournal Keperawatan*, 3.
- Manurung, R., & Adriani, T. U. (2017). Pengaruh Terapi Relaksasi Otot Progresif Terhadap Kualitas Tidur Pada Lansia. *Jurnal Ilmiah Keperawatan Imelda*, 3(2). <http://jurnal.uimedan.ac.id/index.php/JURNALKEPERAWATAN>
- Mazida, E., & Wijaya, C. (2022). Tingkat Pengetahuan Tentang Menopause Dan Kesiapan Menghadapi Masa Menopause Di Desa Bumi Pratama Mandira. *Medical Journal : Jurnal Berkala Ilmiah Kedokteran*, 5(2), 121–127.
- Munira, S., Hasneli, Y., & Annis Nauli, F. (2020). Effect Of Progressive Muscle Relaxation And Zikir Therapy On Blood Sugar Among Patients With Diabetes Mellitus: A Literature Review. *Jurnal Ilmu Keperawatan*, 8, 1.
- Permatasari, W., Aprelia, V., Putri, R. N., Novianti, T. R., Hidayat, N., & Hamdani, D. (2022). Relaksasi Otot Progresif Dan Dzikir Al-Matsurat Dapat Menurunkan Gula Darah Pada Penderita Diabetes Melitus: Literature Review. *Indogenius*.
- Putri Amanda, S. (2019). *The Effect Of Progressive Muscle Relaxation On Sleep Quality In Menopause Women* [Thesis]. Diponegoro University.
- Sari, K., Wulansari, H., Syukur Laowa, E., Paulina, R., & Anggeria, E. (2020). The Effect Of Progressive Muscle Relaxation Techniques On Sleep Quality And Physical Fatigue In The Elderly At The Foundation Guna Budi Bakti Medan. *Malahyati Nursing Journal*, 2(3).
- Sugijantoro, A. C., Anggraini, R., & Afiah, R. K. (2022). The Effect of Combination Of Progressive Muscle Relaxation And Nature Sound Music Therapy On Sleep Quality Of Menopausal Women. *Journal of Applied Nursing and Health*, 4(2), 340–348. <https://doi.org/10.55018/janh.v4i2.107>
- Widjayanti, Y. (2017). Gambaran Kualitas Tidur Wanita Menopause. *Jurnal Keperawatan*, 1.