

The Relationship of Various Physical Activities to Menopausal Symptoms

Naurah Al'Ariqoh, Adek Amansyah, Meldawati

Universitas Prima Indonesia, Indonesia

E-mail: naurahalariqoh@gmail.com, adek_amansyah@yahoo.com,
drmeldash0@gmail.com

*Correspondence: naurahalariqoh@gmail.com

KEYWORDS

menopause; physical activity; questionnaires GPAQ; MRS

ABSTRACT

The purpose of this study was to identify the relationship of various physical activities to menopausal symptoms in women aged 50-60 years in the work area of the Ujunggading Health Center. Research Method: This study uses a correlation research design with a cross sectional approach model with a sample of 75 respondents with a non-probability sampling method, namely using purposive sampling, data collection using GPAQ and MRS questionnaires, data analysis using correlation tests. Results: The results of the study of 75 respondents found the frequency distribution of respondents' characteristics with the most jobs as housewives, namely 23 people (30.7%), the most junior high school education was 20 people (26.7%), and the most menopause duration of 5-7 years, which was 36 people (48.0%). Showing that most respondents had moderate category physical activity 54 (72%) and most respondents experienced moderate category menopausal symptoms 37 (49.3%) There was a relationship between physical activity and menopausal symptoms with p value = 0.000 ($p < 0.05$). Conclusion: There is a relationship between physical activity and menopausal symptoms where the higher the physical activity carried out, the less menopausal symptoms are felt, menopausal symptoms can be reduced by routinely doing activities and exercising for 15 to 60 minutes every day

Attribution- ShareAlike 4.0 International (CC BY-SA 4.0)



Introduction

The number of elderly population in Indonesia over the past 30 years has increased significantly. So it is estimated that the number of menopausal women continues to increase (Adriana & Wiyasa, 2017). Increasing life expectancy (UHH) in women according to WHO 2019, in Indonesia found the average age of menopause was 47 years before 2015 and in 2019 the average age of menopause was 51 years. WHO predicts the number of women over the age of 50 years will increase from 500 million people to approximately 1 billion people in 2030 (LUBIS, 2020).

Menopause is a natural phase experienced by every woman as she ages. The time of menopause in each woman is different, most occur at the age of 40 to 50 years. According to fitra, menopause is defined as a permanent cessation of the menstrual cycle due to decreased ovarian function resulting in a decrease in follicles. Women who experience menopause will experience changes in the production of the hormones estrogen and progesterone. A person is said to experience menopause if they do not menstruate for 12 months (Cory'ah & Wahyuni, 2019).

The cause of menopause is its low estrogen levels and high FSH levels. The decrease in estrogen levels affects various symptoms both physically and psychologically (Siahaan et al., 2021). Physical symptoms that are generally felt by women who experience menopause are hot flashes, which is a condition where the body feels heat and spreads to all parts of the body and is accompanied by night sweats, sleep disorders, anxiety and various disorders of the urogenital. Various risk factors that can be associated with menopause are age at first menstruation (menarche), use of hormonal contraceptives, parity, smoking habits, marriage history (Anas, 2020).

Exercise has many benefits for the health of the body. Exercise such as regular physical activity can reduce the risk of diseases such as cardiovascular disease and also the risk of cancer (Grasiah et al., 2022). According to some studies, exercise in value can reduce complaints at the time of menopause. Exercise can reduce bone tissue loss, aerobic exercise such as breathing exercises can also reduce complaints of hot flashes, besides that exercise can also affect physical and psychological adaptation in menopausal women (Widjayanti, 2016).

According to the World Health Organization (Organization, 2019), physical activity is any limb movement produced by skeletal muscles and requires energy expenditure. These activities range from physical activity with light, moderate to strong intensity. According to the Basic Health Research of the Republic of Indonesia (Risksedas, 2013) reported that there are around 33.5% of physical activity carried out by the Indonesian people is still very low.

According to the Global Physical Activity Questionnaire (GPAQ), physical activity is divided into three levels, such as light activity, where 75% of the time spent is sitting or standing and 25% for standing and moving activities. Moderate activity is 40% of the time used is for sitting or standing and 60% is for work activities. Strenuous activity, which is 25% of the time used is for sitting or standing and 75% is for work activities (de Azevedo Guimarães & Baptista, 2011)

After menopause, adipose tissue is the main source of estrogen in women. Estrogen can be produced outside the ovary, one of which is from adipose tissue in the form of estradiol esters derived from the conversion process of androgens into estrogen by the work of the enzyme CYP19 aromatase called extragonal aromatization (Heinemann et al., 2004). The aromatase enzyme encoded by the CYP19 gene will convert androgens on 19 carbon atoms (androstenedione and testosterone) into estrogen on 18 carbon atoms (in the form of estrone and estradiol). Endogenous estrogen is available in 3 forms with different potency ranging from the strongest potency, namely estradiol, then estrone and estriol. Estradiol is the type of estrogen found most in the female body (Jayanti et al., 2022).

The estrogen synthesized here is biologically active and works in the form of paracrine or intracrine. Regular exercise will be able to increase the work of these enzymes in the formation of estrogen in the form of estradiol esters in adipose tissue. At the time of menopause, estrogen in the body is low where low estrogen can trigger various kinds of complaints at menopause, when estrogen is low, adipose tissue will release

estradiol esters which act as estrogen reservoirs in the body so as to reduce menopausal symptoms (Indriyastuti et al., 2015).

Research Methods

Research This research was carried out in the working area of the Ujunggading Health Center in West Pasaman Regency and the research time was carried out from July to August 2023. This type of research is quantitative research that is analytical with a cross sectional approach. This study will determine the "Relationship of Various Physical Activities to Menopausal Symptoms in the Working Area of the Ujunggading Health Center" conducted in the West Pasaman Regency area.

Research instruments are ways or tools to collect data in conducting the research. The type of data used is primary data, namely data collected through interviews or questionnaires. The research instruments used in this study were GPAQ questionnaires and MRS questionnaires. Research instruments are ways or tools to collect data in conducting the research. The type of data used is primary data, namely data collected through interviews or questionnaires. The research instruments used in this study were GPAQ questionnaire and MRS questionnaire. The physical activity questionnaire used in this study was the Global Physical Activity Questionnaire (GPAQ) which contained 16 questions expressed in units of MET (Metabolic Equivalent if Task) minutes / week with a total score of sums for light activity <600 MET minutes / week for moderate activity 600-300 MET minutes / week and for strenuous activity >1500 MET minutes/week. The questionnaire used for menopausal symptoms is the Menopause Rating Scale (MRS) which contains 11 questions with severity levels rated from 0 (none), 1 (mild), 2 (intermediate), 3 (severe) and 4 (very heavy) with a range of score values up to 17.

Data analysis used normality tests to determine whether the variables of physical activity and menopausal symptoms were normally distributed or not. Univariate analysis to identify the relationship between one variable and another. Bivariate analysis is an analysis carried out on two variables that are suspected to have a relationship or correlation

Results and Discussions

The following table shows some data analysis from the results of the study
Table 1 Frequency distribution of respondne characteristics i.e. menopausal women consisting of work, education and duration of menopause.

Characteristics Responden	f	%
Work:		
IRT	23	30,7
Merchant	11	14,7
Farmer	19	25,3
Civil servants	22	29,3
Education:		
Elementary School	14	18,7
Junior High School	20	26,7
High School	16	21,3
D III	18	24
Bachelor 1	7	9,7
Duration of Menopause:		
2-5 Years	35	46,7
5-7 Years	36	48,0

The Relationship of Various Physical Activities to Menopausal Symptoms

Characteristics Responden	f	%
7-10 Years	4	5,3
Total	75	100,0

Based on table 1 It can be concluded that of the 75 respondents, the most are as IRT, namely 23 people (30.7%), the most education is junior high school, which is 20 people (26.7%) and the most, which is 36 people (48.0%) with menopause after 5-7 years. (Prasetio et al., 2021)

Table 2 Symptoms of menopause

Menopause Symptoms	f	%
None	6	8
Light	14	18,7
Keep	37	49,3
Heavy	18	24
Total	75	100,0

Based on table 2 It can be concluded that of the 75 respondents, the most symptoms of moderate menopause are 37 people (49.3%).(Yuliastuti & Widiarta, 2022)

Table 3 Physical activity

Physical Activity	f	%
Low	9	12
Keep	54	72
Heavy	12	16
Total	75	100,0

Based on table 3 It can be concluded that of the 75 respondents, the most with moderate physical activity is 54 people (72%).

Table 4 The Relationship Between Work, Education, And Length Of Menopause With Symptoms Menopause

Variable	Menopause Symptoms										P value
	None		Light		Keep		Heavy		Sum		
	f	%	f	%	f	%	f	%	f	%	
Work:											
1. Civil servants	5	6,7	4	5,3	8	10,7	5	6,7	22	29,3	0,004
2. Farmer	0	0	8	10,7	10	13,3	1	1,3	19	25,3	
3. Merchant	0	0	0	0	8	10,7	3	4	11	14,7	
4. IRT	1	1,3	2	2,7	11	14,7	9	12	23	30,7	
Education:											
Elementary School					8	10,7	3	4	14		0,022
Junior High School	2	2,7	1	1,3	9	12	0	0	20	18,7	
High School	2	2,7	9	12	11	14,7	3	4	16	26,7	
D III	0	0	2	2,7	7	9,3	9	12	18	21,3	
Bachelor 1	1	1,3	1	1,3	2	2,7	3	4	7	24	0,000
Lama Menopause :	1	1,3	1	1,3					9,3		
	6	8	12	16	15	20	2	2,7	35	46,7	

Variable	Menopause Symptoms										P value
	None		Light		Keep		Heavy		Sum		
	f	%	f	%	f	%	f	%	f	%	
2-5 Tahun	0	0	2	2,7	20	26,3	14	18,7	36	48	
5-7 Tahun	0	0	0	0	2	2,7	2	2,7	4	5,3	
7-10 Tahun											
Total	6	8	14	18,7	37	49,3	18	18	75	100,0	

Based on table 4 It can be concluded that of the 23 respondents (30.7%) with the most jobs are IRT with the most menopausal symptoms are moderate, namely 11 people (14.7%). The results of statistical tests using correlation tests obtained a value of $p = 0.004$ ($p < 0.05$) which means there is a relationship between work and menopausal symptoms.

The most education is junior high school, which is 20 people (26.7) with the most menopausal symptoms are mild and moderate 9 people each (12%). The results of statistical tests using correlation tests obtained a value of $p = 0.022$ ($p < 0.05$) which means there is a relationship between education and menopausal symptoms.

The most menopausal duration is 5-7 years, which is 36 people (48%), the most with menopausal symptoms, which is 20 people (26.3%). The results of statistical tests using correlation tests obtained a value of $p = 0.00$ ($p < 0.05$) which means there is a relationship between the length of menopause and menopausal symptoms.

Table 5 The relationship of various physical activities to menopausal symptoms

Physical Activity	Menopause Symptoms										P value
	None		Light		Keep		Heavy		Sum		
	f	%	f	%	f	%	f	%	f	%	
Low	0	0	0	0	0	0	9	12	9	12	0,000
Keep	6	8	5	6,7	34	45,3	9	12	54	72	
Heavy	0	0	9	12	3	4	0	0	12	16	
Total	6	8	14	18,7	37	49,3	18	18	75	100,0	

Based on table 5 It can be concluded that from 75 respondents, the most physical activity is moderate at 54 people (72%) with the most menopausal symptoms is moderate at 34 people (45.3%). The results of statistical tests using correlation tests obtained a value of $p = 0.000$ ($p < 0.05$) which means there is a relationship between physical activity and menopausal symptoms.

Discussion

Menopause Symptoms

In this study, respondents were grouped into characteristics of respondents which included education, occupation and duration of menopause. Most of the respondents with the most education, namely the most education, are junior high school (20 people (26.7%)), the most jobs are as housewives at 23 people (30.7%) and the most menopausal duration is 36 people (48.0%) with menopause 5-7 years.

In the results of the study of 75 respondents, most of them, namely 37 people (49.3%) experienced symptoms of moderate category menopause. As many as 6 people (8%) did not experience menopausal symptoms, 14 people (18.7%) mild menopausal symptoms and there were 18 people (24%) who experienced severe menopausal symptoms. In the results of this study, the most common menopausal symptoms felt by respondents were somato-vegetative symptoms, the symptoms felt were also related to a history of diseases experienced such as diabetes mellitus, hypertension and gout, besides

that many respondents only worked as housewives who only did light to moderate activities. According to (Dąbrowska-Galas et al., 2019) women with high and moderate activity levels have milder menopausal symptoms compared to inactive women, women with low levels of physical activity suffer from more severe somato-vegetative symptoms. Another opinion from (Sitti Fauziah Mayandari & Asi, 2020) states that menopause greatly impacts a person's quality of life, factors such as age, education level and work greatly affect the quality of life of women who have gone through menopause, working menopausal women will tend to have a better quality of life compared to women who do not work.

Physical Activity

The results of the study of 75 respondents, mostly 54 people (72%) had moderate physical activity. A total of 9 people (12%) did low category physical activity and 12 people (16%) did physical activity classified as heavy. In this study, the most activity was obtained, namely moderate category activity, this is because some respondents work as housewives, besides that there are some respondents who have a history of diseases such as diabetes mellitus, gout and hypertension. Physical activity assessed in this study is daily activities carried out by menopausal women such as gardening, washing, mopping, cooking and sports activities such as gymnastics, jogging, swimming, cycling and playing volleyball.

The results of this study are also in accordance with a statement from (Sitti Fauziah Mayandari & Asi, 2020) which states that physical activity carried out regularly for 60 minutes every day will be able to relieve menopausal symptoms and can improve the quality of life of menopausal women, physical activity such as exercise can also nourish the heart and bones and affect mood. Activities that are too strenuous such as exercise that too expend a lot of energy will cause muscle tension and can reduce the quality of life in women who have menopause. Another statement from Andrian S (2015) most women who have menopause do moderate category physical activity, besides that the opinion of (Sternfeld & Dugan, 2011) also states that by doing more frequent physical activity it will be able to make the mood better in menopausal women.

The relationship of various physical activities to menopausal symptoms

Based on the results of research conducted on 75 respondents, it was found that there was a relationship between physical activity and menopausal symptoms in women aged 50-60 years in the work area of the Ujunggading Health Center. This is also shown by the results of statistical tests using correlation tests obtained a value of $p = 0.000$ ($p < 0.05$) which means there is a relationship between physical activity and menopausal symptoms.

The results of this study explain that the more a person does daily physical activity, it will be able to further reduce the symptoms of menopause that are felt. This is in accordance with a statement from (Dąbrowska-Galas et al., 2019) which states that women with high and moderate levels of physical activity have milder menopausal symptoms compared to inactive women, women with low levels of physical activity suffer from more severe somatic-vegetative symptoms. Another statement (Sternfeld & Dugan, 2011) states that more physical activity generally experiences fewer somatic symptoms and symptoms of mood changes.

From the results of the analysis, it was found that there were as many as 9 people (12%) who did low physical activity experienced severe menopausal symptoms and 12 people (16%) did strenuous activity experienced mild menopausal symptoms as many as 9 people (12%) and moderate symptoms as many as 3 people (4%). This is shown by

more respondents who experience moderate menopausal symptoms who do moderate activity compared to low activity, low activity experience severe symptoms. This is reinforced by the opinion of (Bebasari, 2017) which states that exercise is one alternative to overcome menopausal complaints, regular exercise can increase serum estrogen levels in postmenopausal women, this increase occurs through increased aromatization of androgens in extragonadal tissue, especially adipose tissue, regular exercise will be able to increase the work of these enzymes in the formation of estrogen in the form of estradiol esters in adipose tissue.

Based on the discussion of the results of the study, it is expected that all women who go through menopause apply a healthy lifestyle, do regular physical activity and exercise at least 60 minutes/day. By doing routine activities at the age of 50-60 years is expected to reduce the symptoms of menopause that are felt. And balanced also by eating nutritious foods such as low-fat foods and nuts that contain isoflavones such as soybeans which will be able to increase the activity of estrogen so that it can reduce menopausal symptoms and can improve health and improve the quality of life of menopausal women.

Conclusion

Based on the results of research and discussion of the relationship of various physical activities to menopausal symptoms in women aged 50-60 years in the work area of the Ujunggading Health Center, it can be concluded as follows: Most women experienced moderate menopause symptoms (49.3%). Most menopausal women had as much moderate physical activity as (72%). There is a relationship between physical activity and menopausal symptoms where the higher the physical activity carried out, the fewer menopausal symptoms will be felt.

References

- Adriana, K., & Wiyasa, I. W. A. (2017). Menopause Dan AlzheimerS Disease. *Saintika Medika*, 13(2), 109–117.
- Anas, M. et al. (2020). *Gambaran Klinis Menopause dan Cara Mengatasinya*’.
- Bebasari, E. (2017). Pengaruh olahraga teratur terhadap kadar estrogen adiposa dan estrogen serum pada tikus sprague dawley yang dilakukan ovariektomi. *Jurnal Ilmu Kedokteran (Journal of Medical Science)*, 9(1), 17–21.
- Cory’ah, F. A. N., & Wahyuni, I. G. A. P. S. (2019). Hubungan Sindrom Menopause Dengan Tingkat Kecemasan Ibu Menopause Diwilayah Kerja Puskesmas Ubung Kabupaten Lombok Tengah Tahun 2018. *Jurnal Kebidanan Akademi Kebidanan Jember*, 3(1), 8–16.
- Dąbrowska-Galas, M., Dąbrowska, J., & Michalski, B. (2019). Sexual dysfunction in menopausal women. *Sexual Medicine*, 7(4), 472–479.
- de Azevedo Guimarães, A. C., & Baptista, F. (2011). Influence of habitual physical activity on the symptoms of climacterium/menopause and the quality of life of middle-aged women. *International journal of women’s health*, 319–328.
- Grasiah, J., Amansyah, A., Pratama, I. H., & Djohan, D. (2022). Hubungan jumlah paritas terhadap usia menopause. *Jurnal Prima Medika Sains*, 4(1), 5–10.
- Heinemann, K., Ruebig, A., Potthoff, P., Schneider, H. P. G., Strelow, F., Heinemann, L. A. J., & Thai, D. M. (2004). The Menopause Rating Scale (MRS) scale: a methodological review. *Health and Quality of life Outcomes*, 2, 1–8.
- Indriyastuti, H. I., Dewi, A. P. S., & Shifa, M. (2015). Hubungan Antara Tingkat Pekerjaan Dengan Usia Kejadian Menopause Di Desa Bumirejo Kecamatan Kebumen. *Jurnal Ilmiah Kesehatan Keperawatan*, 11(3).
- Jayanti, T. N., Rustikayanti, R. N., & Dirgahayu, I. (2022). Faktor-faktor yang Berhubungan dengan Kualitas Hidup pada Wanita Menopause di Indonesia: Systematic Review. *Indonesian Journal of Nursing and Health Sciences*, 3(2), 65–76.
- LUBIS, F. A. (2020). *Hubungan Antara Pendidikan Orang Tua Dengan Status Gizi Anak Pada Keluarga Binaan Fk Umsu Skripsi Oleh: Filia Amanda Lubis 1508260016 Fakultas Kedokteran Universitas Muhammadiyah Sumatera Utara Medan 2019*.
- Organization, W. H. (2019). *Nutrition Landscape Information System (NLIS) country profile indicators: interpretation guide*.
- Prasetyo, R., Daud, Y., Hutabarat, J., & Hendarmawan, H. (2021). Fluid geochemistry and isotope compositions to delineate physical processes in Wayang Windu geothermal reservoir, Indonesia. *Geosciences Journal*, 25, 507–523.
- Riskesdas, R. I. (2013). Riset Kesehatan Dasar. *Jakarta: Kemenkes RI*.
- Siahaan, D. S., Amansyah, A., & Pratama, I. H. (2021). Hormonal Contraceptive Use Related to Menopausal Age. *Archives of The Medicine and Case Reports*, 2(4), 214–218.
- Sitti Fauziah Mayandari, P., & Asi, M. (2020). *Hubungan Aktivitas Fisik Dengan Kualitas Hidup Pada Waniita Menopause*. Poltekkes Kemenkes Kendari.
- Sternfeld, B., & Dugan, S. (2011). Physical activity and health during the menopausal transition. *Obstetrics and Gynecology Clinics*, 38(3), 537–566.
- Widjayanti, Y. (2016). Gambaran Keluhan Akibat Penurunan Kadar Hormon Estrogen Pada Masa Menopause (Studi Deskriptif di Wanita Hindu Dharma Indonesia Pura Jagad Dumadi Desa Laban Kecamatan Menganti Kabupaten Gresik). *Adi Husada Nursing Journal*, 2(1), 96–101.

Naurah Al'Ariqoh, Adek Amansyah, Meldawati

Yuliasuti, L. P. S., & Widiarta, I. M. (2022). Hubungan Pendidikan, Pekerjaan Dan Dukungan Suami Dengan Kesiapan Wanita Menghadapi Menopause Di Dusun Pungka Kecamatan Unter Iwes Kabupaten Sumbawa. *JISIP (Jurnal Ilmu Sosial dan Pendidikan)*, 6(2).