

Effect of Menopause on Quality of Life: Path Analysis from Ponorogo East Jawa

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ABSTRACT

Background: Menopause is a biological process in women which is characterized by the cessation of menstruation and a decrease in hormone levels that cause symptoms that can affect quality of life. This study aims to determine the impact of menopause and other factors that influence the quality of life in women.

Subjects and Method: This study was observational analytic with a case control approach. The study was conducted in six health centers in Ponorogo Regency, East Java in March to April 2019. The total sample of 225 women aged 40 to 64 years was divided between 2 groups included menopausal as case group and non-menopausal as control groups based on purposive sampling. The dependent variable was quality of life. The independent variables were menopause, hot flush, anxiety, insomnia, vaginal dryness, and family intimacy. Quality of life is measured by the SF-36 (Short Form Health Survey). Anxiety was measured by Depression Anxiety Stress Scales. Insomnia was measured by the Pittsburgh Sleep Quality Index. The collection of other variables was conducted using questionnaires and analyzed using path analysis.

Results: The decrease in quality of life was directly and negatively affected by menopause ($b = -0.72$; 95% CI = -1.39 to -0.05; $p = 0.034$), hot flush ($b = -0.72$; 95% CI = -1.34 to -0.07; $p = 0.028$), insomnia ($b = -0.79$; 95% CI = -1.43 to -0.16; $p = 0.014$), anxiety ($b = -1.75$; 95% CI = -3.09 to -0.47; $p = 0.011$), and drought vagina ($b = -1.01$; 95% CI = -1.65 to -0.37; $p = 0.002$). Women with high family intimacy can improve quality of life and are positive ($b = 1.32$; 95% CI = 0.69 to 1.95; $p < 0.001$).

Conclusions: The decreased quality of life in women is directly affected by menopause, hot flush, insomnia, anxiety, and vaginal dryness. High family intimacy improves quality of life. Family flush, anxiety, and family intimacy have indirect effects on quality of life.

Keywords: quality of life, menopause, path analysis

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BACKGROUND

Health problems in middle-aged women are a major concern in public health throughout the world. More than 80% of women experience physical or psychological symptoms when approaching menopause with complaints and disturbances in their lives, causing a decrease in quality of life (Poomalar and Arounassalame, 2013).

Menopause is a normal process of change in a woman's life which is characte-

rized by cessation of menstruation for at least one year, physical, psychological and social changes (Erbil, 2018), a decrease in estradiol and progesterone, and an increase in follicle stimulating hormone and changes in life (Hess et al., 2012). Most women enter menopause at the age of 40, but each person is different (Ceylan and Ozerdogan, 2015).

Menopause affects a woman's life which becomes a problem increasing with age

(Sharma and Mahajan, 2015). The menopause causes unwanted symptoms that can interfere with comfort, for example sleep disorders, thinner hair, the body is prone to illness, and an increased risk of sexually transmitted diseases (STDs) (Maringga et al., 2015).

The study of Panichkul et al. (2017) states that the discovery of symptoms associated with menopause is an unstable mood of almost 80% and 42% experience symptoms of depression. His study found 66.6% of participants had hot flush or climacteric symptoms, 62.7% had vaginal dryness, 55.2% had dyspareunia, and 69.2% decreased libido.

Based on data from the Indonesian Ministry of Health (2018), the number of women aged 40-64 years in Indonesia reached 35,591,146 people from a total population of 261,890,872 people. The number of women aged 40-64 years in East Java reached 6,389,319 people from the total population of 39,292,972 people (East Java Provincial Health Office, 2018). Based on data from the Ponorogo District Health Office (2018), the number of women aged 40-64 years in Ponorogo Regency reaches 159,176 people from a total population of 869,894 people.

Menopause has a negative impact on quality of life (Jenabi et al., 2015). Quality of life during menopause is related to the extent to which a woman is able to cope with changes and symptoms that arise. Changes that occur affect the quality of life of women who experience menopause (Ceylan and Ozerdogan, 2015). There is a decrease in quality of life related to health due to some menopausal symptoms (Marlatt et al., 2018).

Insomnia shows risk factors for the biological effects of menopause (Smith et al., 2018). Insomnia is a sleep disorder that is determined by difficulty starting and

maintaining sleep, and is a common problem in middle-aged women especially in menopausal women who are associated with physical, environmental and social factors (Zambotti et al., 2017), Kravitz and Kazlauskaite (2018)).

Insomnia is associated with menopause due to an increase in follicle stimulating hormone (FSH) and a decrease in estradiol that reflects aging in the reproductive system, this results in menopausal symptoms such as hot flush that trigger insomnia (Zambotti et al., 2017). Sleep disorders occur in women menopause that is associated with anxiety and hot flush (Bruyneel, 2015).

Sleep disturbances increase perimenopause and progress to the menopause post, sleep deprivation increases depression, anxiety, and stress (Smith et al., 2018). Anxiety increases during menopause, high-anxiety postmenopausal women tend to experience hot flushes, which are the main symptoms of menopause and are accompanied by sleep disturbances, vaginal dryness, and night sweats (Bryant et al., 2012). Vaginal dryness is one of the symptoms of menopause and causes a decrease in libido, painful intercourse, and decreased sexual satisfaction which can trigger anxiety (Waetjen et al., 2018).

This study aimed to determine the impact of menopause and other factors that influence the quality of life in women.

SUBJECTS AND METHOD

1. Study Design

This was an analytic observational study model with a case control approach, Conducted in six different Puskesmas areas in Ponorogo Regency, East Java in March to April 2019.

2. Population and Sample

Population of this study were all women aged 40 to 64 years who were in six health centers in Ponorogo Regency, East Java.

The health centers included North Ponorogo, South Ponorogo, Babadan, Sukorejo, Bungkal, and Kunti Health Center. Total 225 respondents who were divided between the menopause (case) group of 75 respondents and the non-menopause (control) group of 150 respondents was selected by purposive sampling.

3. Study Variables

The dependent variable was quality of life. The independent variables were menopause, hot flush, anxiety, insomnia, vaginal dryness, and family intimacy.

4. Operational Definition of Variables

Quality of life was the current condition in the context of culture, goals, values, standards, interests, and expectations which are influenced by a number of factors such as one's health, psychological status, social beliefs, and the environment. Data collection was done using SF-36 (Short Form health Survey).

Menopause was a biological change in women characterized by the cessation of the menstrual cycle and a decrease in hormone levels.

Hot flush was a feeling of heat that occurs suddenly on the upper body parts such as the chest, neck, or face, then spread throughout the body during the menopause transition.

Anxiety was the condition of someone feeling worried, frightened, and losing their self-confidence so that they act irrationally so that they have pessimistic thoughts.

Insomnia was a sleep disorder that was determined by the difficulty of starting and maintaining sleep or poor sleep quality even though it was good enough to sleep.

Vaginal dryness was a reduction in physiological lubrication in women due to thinning of the vaginal wall tissue.

Family intimacy was the closeness between two or more people who have blo-

od relations, or marriage that occurs in one household and interacts with each other.

5. Study Instruments

Life quality data collection employed the SF-36 (Short Form Health Survey). Data collection of anxiety was done using Depression Anxiety Stress Scales. Insomnia was measured by the Pittsburgh Sleep Quality Index. Data on menopause, hot flush, vaginal dryness, and family intimacy was collected using a questionnaire.

6. Data Analysis

Univariate analysis describes the characteristics of variables based on the results of the study. Bivariate analysis in the study was conducted to determine the relationship between variables namely quality of life with independent variables using the chi-square test. Multivariate analysis used path analysis to determine the direct or indirect effect of a variable.

7. Research Ethics

Research ethics in this study include approval sheets, anonymity, confidentiality, and ethical feasibility. Ethical feasibility in this study came from the Health Research Ethics Committee of Dr. Hospital. Moewardi Surakarta with number: 317 / III / HREC / 2019.

RESULTS

1. Samples Characteristics

Table 1 showed the results that there were 106 respondents with declining quality of life (47.1%). A total of 75 respondents (33.3%) experienced menopause and 123 respondents (54.7%) said they experienced hot flush. The number of respondents who experienced anxiety in this study was 21 (9.3%). Respondents who said they had insomnia were 125 (55.6%). Respondents who experienced vaginal dryness were 125 (55.6%) and respondents with low family intimacy were 115 (51.1%).

Table 1 Characteristic of Study Subjects

Characteristics	n	%
Life Quality		
Good (score > 72)	119	52.9
Dropped (score ≤ 72)	106	47.1
Menopause		
Not menopause	150	66.7
Menopause	75	33.3
Hot Flush		
No hot flush (score ≤ 3)	102	45.3
Hot flush (score > 3)	123	54.7
Anxiety		
Not anxious (score 1-7)	204	90.7
Anxious (score > 7)	21	9.3
Insomnia		
No insomnia (skor 1-5)	100	44.4
Insomnia (skor > 5)	125	55.6
Vaginal Dryness		
Not dry (score < 3)	100	44.4
Dry (score ≥ 3)	125	55.6
Family intimacy		
Low (score ≤ 22)	115	51.1
High (score > 22)	110	48.9

2. Bivariate Analysis

Table 2 showed the results of analysis of menopause (OR= 0.38; p= 0.001), hot flush (OR= 0.38; p <0.001), anxiety (OR= 0.12; p <0.001), insomnia (OR= 0.35; p <0.001),

and vaginal dryness (OR= 0.41; p= 0.001) can reduce quality of life. High family intimacy (OR= 4.05; p <0.001) can improve quality of life.

Table 2 Bivariate Analysis the Influence of Menopause on Quality Of Life

Variable	Life Quality				Total		OR	p
	Dropped		Good		n	%		
	n	%	n	%				
Menopause								
Not menopause	59	39.3	91	60.7	150	100	0.38	0.001
Menopause	47	62.7	28	37.3	75	100		
Hot flush								
Not hot flush	35	34.3	67	65.7	102	100	0.38	<0.001
Hot flush	71	57.7	52	42.3	123	100		
Anxiety								
Not anxiety	88	43.1	116	56.9	204	100	0.12	<0.001
Anxious	18	85.7	3	14.3	21	100		
Insomnia								
Not insomnia	33	33	67	67	100	100	0.35	<0.001
Insomnia	73	58.4	52	41.6	125	100		
Vagina dryness								
Not dry	35	35	65	65	100	100	0.41	0.001
Dry	71	56.8	54	43.2	125	100		
Family Intimacy								
Low	73	63.5	42	36.5	115	100	4.05	<0.001
High	33	30	77	70	110	100		

3. Path Analysis

Table 3 showed that menopause has logodd to have good quality of life 0.72 units lower than women who are not menopausal. Women with hot flush have logodd to have a good quality of life of 0.71 units lower than those without hot flush. Women with insomnia had logodd to have a good quality of life of 0.79 units lower than those who did not experience insomnia. Anxiety has logodd to have a good quality of life of 1.75 units lower than those who are not anxious.

Women who experience vaginal dryness have logodd to have a good quality of

life of 1.01 units lower than women who do not experience vaginal dryness. The intimacy of the high family has logodd to have a good quality of life of 1.32 units higher than the low family intimacy. Insomnia is affected by hot flush and anxiety. Hot flush has a logon for insomnia 0.86 units higher than those who do not experience hot flush. Anxiety has logodd for insomnia 1.04 units higher than those who do not experience anxiety. Anxiety is influenced by family intimacy, intimacy of high families has logodd for anxiety 0.95 units lower than low family intimacy.

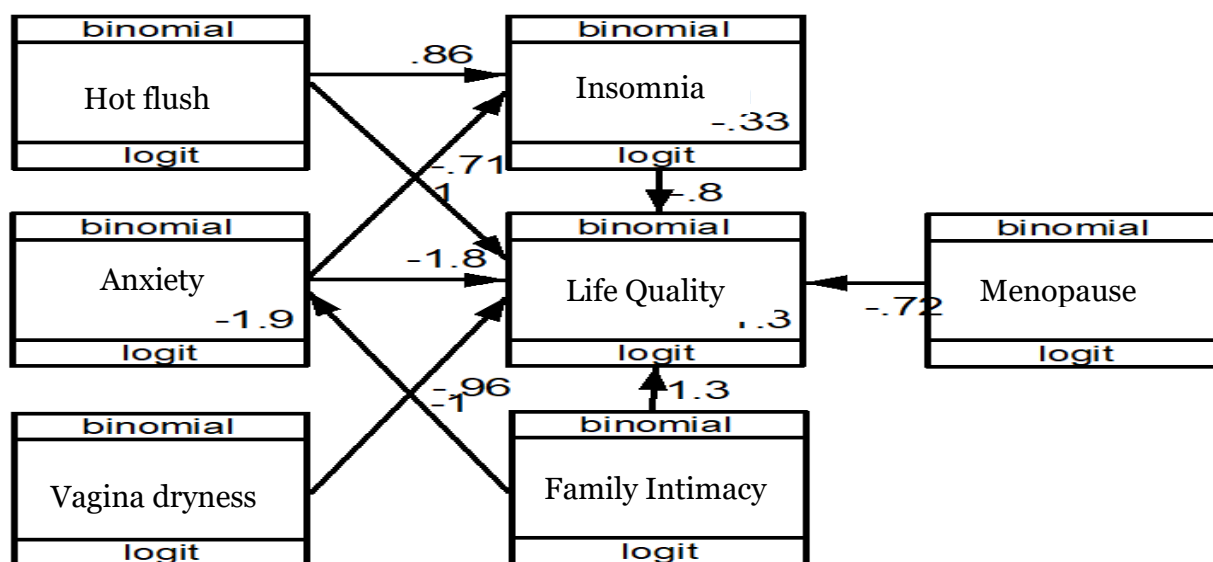


Figure 1 Structural Model of Path Analysis

Table 3 The Results of Path Analysis

Dependent Variable	Independent Variable	b	CI (95%)		P
			Lower	Upper	
<i>Direct Effect</i>					
Quality of Life	← Menopause	-0.72	-1.39	-0.05	0.034
Quality of Life	← Hot flush	-0.71	-1.34	-0.07	0.028
Quality of Life	← Insomnia	-0.79	-1.43	-0.16	0.014
Quality of Life	← Anxious	-1.75	-3.09	-0.40	0.011
Quality of Life	← Vagina dryness	-1.01	-1.65	-0.37	0.002
Quality of Life	← High family intimacy	1.32	0.69	1.95	<0.001
<i>Indirect Effect</i>					
Insomnia	← Hot flush	0.86	0.32	1.40	0.002
Insomnia	← Anxiety	1.04	-0.01	2.10	0.053
Anxiety	← High family intimacy	-0.95	-1.94	0.03	0.057
N observation = 225					
Log likelihood = -336.17672					

DISCUSSION

1. The Effect of Menopause on Quality of Life

The results of the analysis showed that menopause had a direct and negative influence on quality of life and was statistically significant. Menopausal women have accompanying symptoms caused by a decrease in hormone levels and increasing age which affects the quality of life.

The study of Sun et al. (2018) said that menopause had a negative impact on quality of life, besides that the decline in quality of life gradually decreased from premenopausal changes to menopause. Decreasing the quality of life in a person was not only caused by menopause, age, work, BMI, financial status, and the number of children also affect the decline in quality of life (Shobeiri et al., 2016).

The Ermawati et al. (2018) study showed that menopausal women reduced their quality of life by 0.96 times. In line with the results of the study of Parsa et al. (2017), it was shown that menopause caused a change in quality of life. Decreasing quality of life in menopausal patients is caused by the menopause period associated with mental and physical agents that influence women's health (Kalarhoudi et al., 2011).

2. Effect of Hot Flush on Quality of Life

The results of the analysis showed that hot flush had a direct and negative influence on quality of life and was statistically significant. Hot flush also has an indirect influence on quality of life through insomnia.

Chedraui et al. (2010) study showed that 56% half of the respondents reported experiencing hot flushes, this is indeed interrelated between hot flushes and menopause where hot flushes often occur in women entering the menopause transition period, this occurs because of a decrease in

hormone levels when a woman enters menopause, the level of these hormones that causes her bulb to hot flush. In addition, hot flushes are also associated with decreased quality of life in menopausal women (Ayers and Hunter, 2013).

3. Effects of Anxiety on Quality of Life

The results of the analysis showed that anxiety had a direct and negative influence on quality of life and was statistically significant. Women with high anxiety have an influence on a person's quality of life through psychological assessment. Anxiety also has an indirect influence on quality of life through insomnia, women who experience feelings of excessive anxiety will have an impact on the quality of sleep which makes it difficult for a person to sleep.

The results of the study are supported by Mulhallet al. (2018) that post-menopausal women improve their symptoms of asthma by 1.15 times and perimenopausal women increase by 1.22 times anxiety. Psychological symptoms such as anxiety and mood disorders are more common in menopausal transition women who can generally interfere with and affect specifically the quality of life (Shepherd-Banigan et al., 2017), besides anxiety in menopausal women has a potential impact on quality of life (Bremer et al., 2019).

Panichkul et al. (2017) said that mood swings become one of the symptoms associated with menopause, depression, and anxiety related to women's health.

4. The Effects of Insomnia on Quality of Life

The results of the analysis showed that insomnia had a direct and negative effect on quality of life and was statistically significant. The Valiensiet al. Study (2019) showed that 46.7% of insomnia sufferers, almost half of the women in the survey conducted in the study said there was a dis-

ruption in sleep quality. Insomnia during the menopausal transition period negatively affects the quality of life and health in women (Caruso et al., 2019).

Insomnia often occurs during the menopause transition period, sleep disorders also increase with age, besides insomnia also has a negative impact on quality of life, and has a risk of death (Arakane et al., 2011). Sleep disturbances in menopausal women are always associated with various factors, such as normal physiological changes related to aging, perceptions of poor health, various symptoms associated with menopause, anxiety and other health problems (Jehan et al., 2015). Yazdi et al. (2013) say that sleep disorders increase during menopause which has a negative impact, in other words insomnia is associated with a lower quality of life.

5. The Effect of Vaginal Dryness on Quality of Life

The results of the analysis showed that vaginal dryness had a direct and negative influence on quality of life and was statistically significant. In line with the study of Whiteley et al. (2013) which showed the results of 32.5% of women said they experienced vaginal dryness during the menopause transition period, besides the study Karmakar et al. (2017) also mentioned that there were sexual changes during menopause 26% experience vaginal dryness.

Vaginal dryness was one of the common problems that occur in women. A person who experiences vaginal dryness will affect the overall quality of life which decreases overall and negatively affects sexual pleasure (Vale et al., 2019).

6. The Effect of Family Intimacy on Quality of Life

The results of the analysis showed that family intimacy had a direct and positive influence on quality of life and was statistically significant. The higher the intimacy of

family, the better the quality of life. Family intimacy also indirectly affects quality of life through anxiety.

Sari et al. (2017) study showed that family support had an influence on improving the quality of life in menopausal women at 0.42 times compared to women who did not have family support. Someone who does not have family support, family closeness will be low, besides family support has a role in family closeness related to improving the quality of life of a person. Close family relationships and the existence of social support in the family will provide a sense of comfort and happiness that will have an advantage in a good quality of life (Ray and Dasgupta, 2012).

AUTHOR CONTRIBUTION

Shally Ayu Chintya, the main author, played a role in collecting and processing study data. Uki Retno Budihastuti examines the conceptual framework and study methodology. Rita Benya Adriani reviewed the study paper.

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CONFLICT OF INTEREST

None.

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