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COMPARISON OF HEALTH-RELATED QUALITY OF LIFE IN PRE- AND POST-MENOPAUSAL STAGES

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Abstract: Menopause is a phase of life surrounded by myths and taboos, where women spend a significant portion of their lives. While some women tolerate menopausal symptoms well, others find them troublesome, impacting their overall quality of life. Severe symptoms can significantly compromise the well-being of those affected. In India, many times women do not talk about all their symptoms because of cultural beliefs and social norms. This can lead to a lack of complete information about their health when seeking medical help. A study conducted in various areas of Cuttack, Odisha aimed to compare the health-related quality of life between pre- and post-menopausal women aged 45-49 and 50-54. Interestingly, the research revealed that pre-menopausal women had a better health-related quality of life compared to those in the post-menopausal stage. These findings shed light on the various factors influencing women's quality of life during different stages of menopause, offering valuable insights into this aspect of women's health.

Key words. Menopause, taboos, symptoms, well-being.

I. INTRODUCTION

Erik Erikson explained that middle age is a time when people face the conflict of generativity versus stagnation. This means that individuals may feel driven to continue growing and being productive, or they may feel limited by the effects of aging and past choices. However, there is an additional factor of menopause in women when they often undergo physical and psychological transformations, marked by shifts in attitudes and emotions that prompt introspection about their achievements and significance.

Menopause is the cessation of the menstrual cycle for at least twelve consecutive months and not due to physiological or pathologic causes, signalling the end of natural fertility. Whitley et al. (2013) compared the data of women with no menopausal symptoms to women with menopausal symptoms and reported that the latter group complained about a decline in overall physical fitness, hot flashes, mood swings, and irritability.

Baral and Kaphle (2023) conducted a cross-sectional study in Pokhara, Nepal to assess health-related quality of life among menopausal women. The study found that 51.4% of menopausal women had poor quality of life as many women experience symptoms of menopause, most of which are perceived as unpleasant and sometimes disabling, making it hard for women to maintain their usual quality of life. Quality of life (QOL) is how someone personally assesses different parts of their life, like where they stand in society, affected by things like their health, relationships, education, job setting, social standing, financial situation, feeling safe, freedom, ability to make choices, sense of belonging, and the environment they live in. Health-related quality of life (HRQL) is a part of quality of life (QOL) that pays close attention to how well a person can do things in their daily life, have a satisfying life, and handle challenges related to their health, like illness, injury, or physical limitations. HRQL looks at how a person's health affects their life, including their feelings about their health, medical care, and treatments they receive. HRQL research is essential for enabling individuals to make informed decisions about treatments and live their lives more fully. In India, the age when women naturally start menopause is around 45 years old, and they typically live to be about 70. This means that the time after menopause lasts about a third of a woman's life. Because of this, it's crucial for women to have a good quality of life during this stage. Several studies mentioned below have explored the changes during the menopausal transition:

Kumari et al., (2020) investigated the quality of life among postmenopausal women of slum communities in Bhubaneswar. During menopause, women often experience various symptoms. The most common issues reported by women with moderate to severe symptoms are:

1. Joint and muscle discomfort (90.4%)
2. Hot flashes (72.8%)
3. Irritability (67.2%)
4. Physical and mental exhaustion (64.2%)

These symptoms can significantly affect a woman's daily life and overall well-being.

The study of Swanson et al., (2018) aimed to explore the regulatory interactions between stress and fatigue in women undergoing the menopausal transition and early post-menopause. The interplay between stress and fatigue showed evidence of shifts in regulatory relationships throughout the menopausal transition, indicating a general dysregulation during the menopausal transition. In a study by Al-Musa and colleagues in 2017, they found that many postmenopausal women have problems. Here are some of the most common issues:

- Joint and muscle pain (96.1%)
- Feeling irritable (94.7%)
- Feeling anxious (89.0%)
- Hot flashes and sweating (80.7%)

The study also found that a woman's marital status, lower education level, having children, not exercising, and having a chronic disease are linked to more severe symptoms and poorer quality of life. A study by Mohamed and colleagues in 2014 found that menopause can impact women's lives in various ways.

The most severe symptoms were:

poor memory, feeling unhappy with personal life, lower back pain and changes in sexual desire.

The study also found that the average scores of each area suggest that menopausal symptoms can lower a woman's quality of life. Weber and colleagues (2013) conducted a cross-sectional study and revealed that women in the initial year of post-menopause displayed significantly lower performance levels in verbal learning, verbal memory, and motor function tasks compared to women in the late reproductive and late menopausal transition stages. The research indicated that decline in cognitive function may be most pronounced in the first year following the final menstrual period. In a study published in 2013, McDermott et al. aimed to review the correlation between menopausal stage and neuropsychological performance and depression. The findings revealed that postmenopausal women had significantly poorer delayed verbal memory task performance compared to both pre- and perimenopausal women. Additionally, postmenopausal women performed significantly worse on phonemic verbal fluency tasks, were found to be at a higher risk of depression as compared to premenopausal women. Ray et al., (2012) interviewed 315 postmenopausal women of a rural area of West-Bengal in India out of which 77% reported poor quality of life. When researchers looked at multiple factors together, they found that women who did not live with their own children, didn't exercise regularly, were literate, and relied on their children for financial support tended to have a poorer quality of life. A research conducted by Bairy and colleagues in 2009 found that most frequent menopausal symptoms were physical and psychological in nature as compared to sexual nature.

Additionally, studies have highlighted the regulatory interplay between stress, fatigue, depression, cognitive function and dysfunction and menopausal symptoms during the transition and early post-menopausal period.

Therefore, this current study aims to evaluate the disparity in health-related quality of life between pre-menopausal and post-menopausal women.

Objectives

1. To find out the difference of physical functioning in pre- and post-menopause women.
2. To find out the difference of role limitations due to physical issues in pre- and post-menopause women.
3. To find out the difference of role limitations due to emotional issues in pre- and post-menopause women.
4. To find out the difference of energy/fatigue in pre- and post-menopause women.
5. To find out the difference of emotional well-being in pre- and post-menopause women.
6. To find out the difference of social functioning in pre- and post-menopause women.
7. To find out the difference of pain in pre- and post-menopause women.
8. To find out the difference in general health in pre- and post-menopause women.
9. To find out the difference of overall health-related quality of life in pre- and post-menopause women.

Hypotheses

1. H_{01}: There is no significant difference between pre- and post-menopause women regarding physical functioning.
2. H_{02}: There is no significant difference between pre- and post-menopause women regarding role limitations due to physical issues.
3. H_{03}: There is no significant difference between pre- and post-menopause women regarding role limitations due to emotional issues.
4. H_{04}: There is no significant difference between pre- and post-menopause women regarding energy/fatigue.
5. H_{05}: There is no significant difference between pre- and post-menopause women regarding emotional well-being.
6. H_{06}: There is no significant difference between pre- and post-menopause women regarding social functioning.
7. H_{07}: There is no significant difference between pre- and post-menopause women regarding pain.
8. H_{08}: There is no significant difference between pre- and post-menopause women regarding general health
9. H_{09}: There is no significant difference between pre- and post-menopause women regarding overall health-related quality of life.

II. METHODOLOGY

This was a cross-sectional, quantitative research study. Randomly selected women going through or past menopause were chosen to participate in an open study and answer a 36-item questionnaire to mark their health-related quality of life. Women taking part in the study could either have menopause symptoms or not. The survey and data were gathered using the Medical Outcomes Study Questionnaire Short Form 36 Health Survey developed by RAND Corporation in 1992. Achieving a high score on a particular domain indicates a more positive health status and a higher quality of life, particularly in relation to health.

Women within the age range of 45-54 years of age were randomly selected from different areas of Cuttack as subjects. The total sample was again divided into two groups consisting of 60 members each. Participants within the age range of 45-49 years constituted the first group, whereas, participants within the age range of 50-54 years constituted the second group. The first and the second group constituted of pre-menopause and post-menopause women respectively. Participants expressed their agreement to participate by submitting their responses, with no incentives offered in return.

III. SAMPLING

Inclusion criteria

The age limit to be in pre- and post- menopause group was fixed to be 45-49 years of age and 50-54 years of age respectively.

Exclusion criteria

The participants having gynaecological issues were excluded;

The participants undergone hysterectomy or experienced unnatural menopause, such as those caused by surgery or radiation for cervical cancer were excluded.

IV. RESULTS

1. Physical functioning during the pre- and post-menopause stages in women.

An independent t-test was conducted to compare physical functioning of women in pre- and post-menopausal stages. The results show that there was a significant difference in the scores thus, H_{01} was rejected. Since the table revealed that the mean of the pre- menopausal (M=72.7, SD=7.7) is greater than for post-menopausal (M=39.0, SD=19.3) stage; t=12.56, p=.00, it can be concluded that women in the pre-menopause stage exhibit better physical functioning than the women in post-menopause stage.

Table No.1

The Independent T-Test Performed on Scores of Physical Functioning of Women in Pre- and Post-Menopause Stages

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	72.7	7.7	60	12.56	118	0.0001
Post-Menopause	39.0	19.3	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

2. Role limitations due to physical issues during pre- and post-menopause women.

An independent t-test was conducted to compare role limitations due to physical issues of women in pre- and post-menopausal stages. The results show that there was a significant difference in the scores thus H_{02} was rejected. Since the table revealed that the mean of the pre- menopausal (M=66.7, SD=18.1) stage is greater than post-menopausal (M=38.33, SD=24.8) stages; t=7.16, p=.00, it can be concluded that women in the pre-menopause stage have less role limitations due to physical issues than the women in post-menopause stage.

Table No.2

The Independent T-Test Performed on Scores of Role Limitations Due to Physical Issues of Women in Pre- and Post- Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	66.7	18.1	60	7.16	118	.00001
Post-Menopause	38.3	24.8	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

3. Role limitations due to emotional issues during pre- and post-menopause women.

An independent t-test was conducted to compare role limitations due to emotional issues of women in pre- and post-menopausal stages. The result show that there was a significant difference in the scores thus, H_{03} was rejected. Since the table revealed that the mean of the pre- menopausal (M=64.5, SD=23.5) is greater than for post-menopausal (M=33.3, SD=21.8) stage; t=7.54, p=.00, it can be concluded that women in the pre-menopause stage have less role limitations due to emotional issues than the women in post-menopause stage.

Table No. 3

The Independent T-Test Performed on Scores of Role Limitations Due to Emotional Issues of Women in Pre- and Post- Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	64.5	23.5	60	7.54	118	.00
Post-Menopause	33.3	21.8	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

4. Energy/Fatigue issues during pre- and post-menopause women.

An independent t-test was conducted to compare the level of energy/fatigue of women in pre- and post-menopausal stages. The results show that there was a significant difference in the scores thus, H_{04} was rejected. Since the table revealed that the mean of the pre- menopausal (M=57.7, SD=3.0) stage is greater than and for post-menopausal (M=44.33, SD=2.5) stage ; t=22.61, p=.00, it can be concluded that women in the pre-menopause stage have more energy and less fatigue than the women in post-menopause stage.

Table No. 4

The Independent T-Test Performed on Scores of Levels of Energy/Fatigue of Women in Pre- and Post-Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	55.7	3.0	60	22.61	118	.00
Post-Menopause	44.3	2.5	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

5. Emotional well-being issues during pre- and post-menopause women.

An independent t-test was conducted to compare the level of emotional well-being of women in pre- and post-menopausal stages. The results show that there was a significant difference at p value of .02, H_{05} was rejected. Since the table also revealed that the mean of the pre- menopausal (M=61.9, SD=11.2) stage is greater than the post- menopausal (M=55.5, SD=7.2) stages; t=3.72, p=.00, it can be concluded that women in the pre-menopause stage have better emotional well-being than the women in post-menopause stage.

Table No. 5

The Independent T-Test Performed on Scores of Emotional Well-Being Issues of Women in Pre- and Post- Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	61.9	11.2	60	3.72	118	.000306
Post-Menopause	55.5	7.2	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

6. Social functioning issues during pre- and post-menopause women.

An independent t-test was conducted to compare the level of social functioning of women in pre- and post-menopausal stages. The results show that there was a significant difference thus, H_{06} was rejected. Since the table revealed that the mean of the pre- menopausal (M=71.7, SD=15.9) stage is greater than the post-menopausal (M=52.5, SD=16.5) stages; t=6.49, p=.00, it can be concluded that women in the pre- menopause stage have better social functioning skills than the women in post- menopause stage.

Table No. 6

The Independent T-Test Performed on Scores of Social Functioning Issues of Women in Pre- and Post-Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	71.7	15.9	60	6.49	118	.00001
Post-Menopause	52.5	16.5	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

7. Pain issues during pre- and post-menopause women.

An independent t-test was conducted to compare the level of pain of women in pre- and post- menopausal stages. The result show that there was a significant difference thus, H_{07} was rejected. Since the table revealed that the mean of the pre- menopausal (M=65.3, SD=14.9) stage is greater than the post- menopausal (M=35.8, SD=17.6) stages; t=9.30, p=.00, it can be concluded that women in the pre-menopause stage have less pain issues than the women in post-menopause stage.

Table No. 7

The Independent T-Test Performed on Scores of Pain Issues of Women in Pre- and Post- Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	65.3	14.9	60	9.30	118	0.0001
Post-Menopause	35.8	17.6	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

8. General health issues during pre- and post-menopause women.

An independent t-test was conducted to compare the overall general health of women in pre- and post-menopausal stages. The result show that there was a significant difference thus. H_{08} was rejected. Since the table revealed that the mean of the pre- menopausal (M=61.0, SD=12.3) stage is greater than the post-menopausal (M=42.3, SD=13.9) stages; t=7.80, p=.00 it can be concluded that women in the pre- menopause stage have better overall general health than the women in post-menopause stage.

Table No. 8

The Independent T-Test Performed on Scores of General Health Issues of Women in Pre- and Post-Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	61.0	12.3	60	7.80	118	0.0001
Post-Menopause	42.3	13.9	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

9. Health related quality of life during pre- and post-menopause women.

An independent t-test was conducted to compare the health-related quality of life of women in pre- and post-menopausal stages. The result show that there was no significant difference thus, H_{09} was rejected. Since the table revealed that the mean of the pre- menopausal (M=65.2, SD=15.4) stage is greater than the post-menopausal (M=42.6, SD=18.3) stages; t=7.32, p=.00, it can be concluded that women in the pre-menopause stage have better health-related quality of life than the women in post-menopause stage.

Table No. 9

The Independent T-Test Performed on Scores of Health-Related Quality of Life of Women in Pre- and Post- Menopause Stages.

Stage of Menopause	*M*	*SD*	*n*	*T*	*df*	*p*
Pre-Menopause	65.2	15.4	60	7.32	118	.00001.
Post-Menopause	42.6	18.3	60			

Note. M= Mean, SD= Standard Deviation, n= number of participants, t= value of t statistic, df= degrees of freedom, **p<0.01

V. DISCUSSION

The current study attempted to compare the health-related quality of life in pre-menopause and post-menopause women over eight factors including- physical functioning, role limitations due to physical and emotional issues, level of energy/ fatigue, emotional well-being, social functioning, pain and general health. The results of the current study showcase the difference in health-related quality of life in pre- and post-menopausal women.

As regards to the physical functioning in terms of running or climbing stairs, pre-menopausal women (M=72.7) showed better results than post-menopausal (M=39.0) women. In respect to role limitations due to physical issues, women in pre-menopause stage (M=66.7) experienced role limitations less than women in post-menopause (38.3) stage. This may be due to the fact of declining levels of estrogen. To support this, Tulay Okman-Kilic, (2015) found that oestrogen deficiency exacerbates bone loss due to aging by diminishing the cells resistance to oxidative stress (OS). Also, research conducted by University of Jyväskylä in 2018 showed that postmenopausal women had lower muscle strength and muscle power than peri- or premenopausal women.

In respect to the role limitations due to emotional issues including cutting down the amount of time one spent on work or other activities, limitations in performance due to the nature of activities; women in pre-menopause stage (M=64.5) experienced role limitations less than women in post-menopause stage (M=33.3) , this may be due to dropping level of estrogen causing wide-ranging mood changes including- fatigue, irritability, difficulty concentrating, depression, anxiety, crying episodes and feeling weepy, insomnia. According to Rachel Nall in 2023, women going through menopause may find themselves becoming irritable and more easily annoyed by things that did not bother them before. Additionally, Born and colleagues in 2008 discovered increased levels of a brain protein called monoamine oxidase A (MAO-A) in women starting menopause. This protein is associated with depression.

Regarding the level of energy/ fatigue in pre- and post-menopause women reflecting through questions like feeling full of pep, having a lot of energy feeling of worn out and feeling tired; pre-menopause women (M=55.7) reported better level of energy more than women in post- menopause stage (M=44.3). This may be due to the fact that hormonal changes that cause symptoms like hot flashes and night sweats can also affect sleep duration, mood and energy levels, leading to fatigue. Eileen Durward in 2017 points out that hormonal changes during menopause can disrupt sleep patterns, causing women who used to sleep well to struggle with getting enough restful sleep. This lack of sleep can lead to daytime fatigue. Many women going through menopause feel like they have less time, and other symptoms like memory problems can add to their stress.

In regard to the health-related quality of life in aspect of emotional well-being including nervousness, feeling down in the dumps, and being happy; women in pre-menopause (M=61.9) exhibit better emotional well-being, more than women in post-menopause stage (M=55.5). During menopause, hormone changes, life stress, sleep problems from night sweats, and worries about body image, infertility, and aging can cause emotional distress. This distress can lead to mood swings or, in more severe cases, depression. Contrary to this, Campbell and colleagues in 2017 found that women tend to feel better emotionally as they go through menopause. They become more patient, less stressed, and more connected to positive aspects of life. This improvement in mood is often linked to having more time for themselves as they move away from work and family duties. By the time they reach later stages of life, many women have come to terms with aging and have a positive outlook on the process.

In reference to social functioning, women in pre-menopause (M=71.7) exhibit better social functioning skills or experience less changes in their social life as compared to the women in post- menopause stage (52.5) , this can be a result of estrogen decline, which causes mood changes and one becomes irritable and less tolerant of socialising. To support this finding, Shannon Perry, (2018) explains that as estrogen declines, it often takes with it some of the urge to nurture others, depression can spike leaving many women vulnerable to crippling isolation. Also, digestive issues, hair loss, weight gain, body odour can make it harder to spend time with others.

With respect to the pain experienced by women in pre- and post-menopause stages, women in pre-menopause stage (65.3) reported to experience less bodily pain than women in post-menopause stage (M=35.8). This can be explained by estradiol deficiency that causes decrease in collagen structure and joint health which causes increase in joint pain. Women struggle with sleep which does not allow for proper rest and restoration of the body at night. Estrogen deficiency also makes the vagina dry and uncomfortable which leads to painful sex. As Eileen Durward, (2017) explains during menopause, estrogen levels drop, leading to an increase in cortisol levels, causing stress and anxiety. High cortisol levels can cause tense and painful muscles, making a person more sensitive to pain. Estrogen also affects magnesium absorption, which is essential for proper muscle function and relaxation. Low magnesium levels can lead to muscle aches, fatigue, and cramps. Additionally, hormonal and physical changes during menopause can cause weight gain and fat accumulation around the waist, putting more strain on muscles and joints, leading to pain and discomfort.

In regard to the general health, women in pre-menopause stage (M=61.0) report better results than women in post-menopause stage (M=42.3). This is supported by a study conducted by the Women's Health Research Institute, North-western University explaining that estrogen depletion can cause various hormonal and biochemical changes in the body that can affect the brain and nervous system. This can lead to emotional distress, mood swings, and depression. Additionally, low estrogen levels can increase the risk of bone loss, osteopenia, and osteoporosis. It can also raise the risk of heart-related issues, such as heart attacks and strokes, due to changes in the cardiovascular system

During menopause, estrogen levels decrease, which can affect the skin, urinary tract, and vagina. The skin becomes drier, less elastic, and more prone to wrinkles and bruises. The lining of the urethra, which carries urine out of the body, can become thinner, less elastic, and drier, leading to frequent urination, UTIs, and incontinence. Low estrogen levels can also cause vaginal dryness, irritation, and discomfort, leading to atrophy, an inflammation of the vagina due to thinning and shrinking tissues and decreased lubrication. This can make sexual activity uncomfortable and increase the risk of infection.

With respect to compare the health-related quality of life in pre- and post-menopause women, in terms of physical functioning, role limitations due to physical and emotional issues, level of energy/ fatigue, emotional well-being, social functioning, pain and general health, women in pre-menopause stage (M=65.2) reported better quality of life than women in post-menopause stage (M=42.6). The reason why women in post-menopause stage have worse health-related quality of life in comparison to women in pre-menopause stage can be due to the hormonal imbalance; declining levels of oestrogen, progesterone and already low

level of testosterone in women, leading to accelerated osteoclastic bone resorption, mood changes including- fatigue, irritability, and difficulty concentrating, depression, anxiety, crying episodes and feeling weepy, insomnia. During menopause, women may feel stressed about their body image, fertility, and aging. These concerns can cause emotional distress, make them think about death, and question their life's purpose and direction. Women who wanted children but could not have them may find menopause particularly difficult and may become depressed.

Limitations of the Study

Although the study throws light on impact of menopause and related hormonal changes on the health-related quality of life by comparing the health-related quality of life in pre and post- menopause women across eight factors including- physical functioning, role limitations due to physical and emotional issues, level of energy/ fatigue, emotional well-being, social functioning, pain and general health, it suffers from certain limitations outlined below, which need to be taken care of in future studies-

- The number of participants taken for the study is of a small size; 60 pre-menopause and 60 post-menopause women. Had it been more, the results would be more inclusive and easier for generalisation.
- While responding to the questions concerning their general health in terms of how they see their health status now, get better or worse in future, the participants were paranoid in sharing their actual responses to avoid showcasing a negative attitude.
- In the current study setting, women did not mention experiencing hot flashes and night sweats, which are common and troublesome symptoms. This could be because they misunderstood the symptoms or felt uncomfortable discussing them openly.

Implications of the Study

- Despite the above outlined limitations, the results of this study have implications for potential positive social change on the individual level as it made the participants introspect and aware of the changes and declining state of quality of life which may trigger at least some to incorporate changes for a healthy lifestyle which will eventually contribute to a healthy society as well.
- The results of this study simply show the inevitable changes women have to go through in their midlife which will help the policy makers to develop certain laws beneficial for psychophysiological betterment.
- The results may motivate healthcare workers to be more sensitive and well-informed about the changes women experience.

REFERENCES

36-Item Short Form Survey from the RAND Medical Outcomes Study. (n.d.). https://www.rand.org/health-care/surveys_tools/mos/36-item-short-form.html

Aldughaither, A., Al Mutairy, H., & AlAteeq, M. A. (2015). Menopausal symptoms and quality of life among Saudi women visiting primary care clinics in Riyadh, Saudi Arabia. *International Journal of Women's Health*, 645. https://doi.org/10.2147/ijwh.s84709

Abedzadeh-Kalahroudi, M., Taebi, M., Sadat, Z., Saberi, F., & Karimian, Z. (2012). Prevalence and severity of menopausal symptoms and related factors among women 40-60 years in Kashan, Iran. *Nursing and Midwifery Studies/Nursing and Midwifery Studies*, *1*(2), 88–93. https://doi.org/10.5812/nms.8358

Abd El Hakim Hassanin Aboud, S. (2014, October 22). *Effect of menopausal symptoms on women's quality of life in Benha City (Egypt) and Arar City (Kingdom of Saudi Arabia)*. https://medicaljournalofcairouniversity.net/index.php/2014-10-22-23-17-18/vol-78-september-2010/382-effect-of-menopausal-symptoms-on-women-s-quality-of-life-in-benha-city-egypt-and-arar-city-kingdom-of-saudi-arabia

Avis, N. E., Assmann, S. F., Kravitz, H. M., Ganz, P. A., & Ory, M. G. (2004). Quality of life in diverse groups of midlife women: Assessing the influence of menopause, health status and psychosocial and demographic factors. *Quality of Life Research*, *13*(5), 933–946. https://doi.org/10.1023/b:qure.0000025582.91310.9f

Al-Musa, H. M., Ahmed, R. A., Alsamghan, A. S., Abadi, S., Al-Saleem, M. a. S., Alsabaani, A. a. M., Bharti, R. K., Alqahtani, K., Alahmari, S., Alshahrani, H., Aboalam, A., & Alqahtani, H. A. (n.d.). *The prevalence of symptoms experienced during menopause, influence of socio-demographic variables on symptoms and quality of life among women at Abha, Saudi Arabia*. https://www.alliedacademies.org/articles/the-prevalence-of-symptoms-experienced-during-menopause-influence-of-sociodemographic-variables-on-symptoms-and-quality-of-life-am.html

Born, L., Koren, G., Lin, E., & Steiner, M. (2008, July). A new, female-specific irritability rating scale. *Journal of Psychiatry & Neuroscience, 33(4),* 344-354. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2440789/

Bairy, L. K., Adiga, S., Bhat, P., & Bhat, R. (2009). Prevalence of menopausal symptoms and quality of life after menopause in women from South India. *the Australian and New Zealand Journal of Obstetrics and Gynaecology*, *49*(1), 106–109. https://doi.org/10.1111/j.1479-828x.2009.00955.x

Bernis, C., & Reher, D. (2007). Environmental contexts of menopause in Spain. *Menopause*, *14*(4), 777–787. https://doi.org/10.1097/gme.0b013e31803020ff

Chim, H., Tan, B. H., Ang, C. C., Chew, E. M., Chong, Y. S., & Saw, S. M. (2002). The prevalence of menopausal symptoms in a community in Singapore. *Maturitas*, *41*(4), 275–282. https://doi.org/10.1016/s0378-5122(01)00299-7

Cooper, R., Kuh, D., & Hardy, R. (2010). Objectively measured physical capability levels and mortality: systematic review and meta-analysis. *BMJ. British Medical Journal*. https://doi.org/10.1136/bmj.c4467

Campbell, K. E., Dennerstein, L., Tacey, M., & Szoeke, C. (2017). The trajectory of negative mood and depressive symptoms over two decades. *Maturitas*, *95*, 36–41. https://doi.org/10.1016/j.maturitas.2016.10.011

Cartmel, M. (2024, March 27). *Menopause and mental health: finding yourself in isolation*. Gennev. https://www.gennev.com/learn/social-isolation-menopause-mental-health

Chedraui, P., Hidalgo, L., Chavez, D. I., Morocho, N., Alvarado, M., & Huc, A. (2006). Menopausal symptoms and associated risk factors among postmenopausal women screened for the metabolic syndrome. *Archives of Gynecology and Obstetrics*, *275*(3), 161–168. https://doi.org/10.1007/s00404-006-0239-7

Chen, Y., Lin, S., Wei, Y., Gao, H., & Wu, Z. (2007). Menopause-specific quality of life satisfaction in community-dwelling menopausal women in China. *Gynecological Endocrinology*, *23*(3), 166–172. https://doi.org/10.1080/09513590701228034

Dalal, P. K., & Agarwal, M. (2015). Postmenopausal syndrome. *Indian Journal of Psychiatry/Indian Journal of Psychiatry*, *57*(6), 222. https://doi.org/10.4103/0019-5545.161483

Dasgupta, A. (2012). An assessment of QOL and its determining factors of post menopausal women in a rural area of West Bengal, India: A multivariate analysis. *www.academia.edu*. https://www.academia.edu/66803339/An_assessment_of_QOL_and_its_determining_factors_of_post_menopausal_women_in_a_rural_area_of_West_Bengal_India_A_multivariate_analysis

Durward, E. (2018). Muscle pain and the menopause. https://www.avogel.ie/health/menopause/symptoms/joint-pain/

Delavar, M. A., & Hajaihmadi, M. (2011). Factors Affecting the Age in Normal Menopause and frequency of Menopausal Symptoms in Northern Iran. *PubMed*, *13*(3). https://pubmed.ncbi.nlm.nih.gov/22737462/

El Sabagh, E., Abd Allah, E. (2012). Menopausal symptoms and the quality of life among pre/post-menopausal women from rural area in Zagazig city. *Life Sci J. 9(2)*, 283. https://www.ijrcog.org/index.php/ijrcog/article/view/991

El Shafe, K., Al Farsi,Y., Al Zadjali, N., Al Adawi, S., Al Busaidi, Z., Al Sha, M. (2011). Menopausal symptoms among healthy, middle-aged Omani women as assessed with the menopause rating scale. *Menopause*. *(10)*. http://doi:10.1097/gme.0b013e31821b82ee

Ford, K., Sowers, M., Crutchfield, M., Wilson, A., Jannausch, M. (2005). Longitudinal study of the predictors of prevalence and severity of symptoms commonly associated with menopause. *Menopause*. https://www.ncbi.nlm.nih.gov/pubmed/15879920

Gordon, S., Frisina, S., Robert, D.,Richard, R. (2010). The Aging Auditory System. Springer Science &

Business Media. http://doi:10.1044/10590889(2012/12-0030)

Greenblum, C. A., Rowe, M. A., Neff, D. F., & Greenblum, J. S. (2013). Midlife women. *Menopause*, *20*(1), 22–27. https://doi.org/10.1097/gme.0b013e31825a2a91

Greenblum, C., Greenblum, S., Meredeth, A., Neff, D. (2013). Midlife women: symptoms associated with menopausal transition and early post-menopause and quality of life. *Menopause*. *20(1),* 22-7. http://doi: 10.1097/gme.0b013e31825a2a91.

Gharaibeh, M., Al-Obeisat, S. M., & Hattab, J. T. (2010). Severity of menopausal symptoms of Jordanian women. *Climacteric*, *13*(4), 385–394. https://doi.org/10.3109/13697130903050009

G K, P., & Arounassalame, B. (2013). The quality of life during and after menopause among rural women. *Journal of Clinical and Diagnostic Research*. https://doi.org/10.7860/jcdr/2012/4910.2688

Gibson, C. J., Li, Y., Bertenthal, D., Huang, A. J., & Seal, K. H. (2019). Menopause symptoms and chronic pain in a national sample of midlife women veterans. *Menopause*, *26*(7), 708–713. https://doi.org/10.1097/gme.0000000000001312

Heinemann, K., Ruebig, A., Potthoff, P., Schneider, H. P. G., Strelow, F., Heinemann, L., & Thai, D. M. (2004). The Menopause Rating Scale (MRS) scale: a methodological review. *Health and Quality of Life Outcomes*, *2*(1), 45. https://doi.org/10.1186/1477-7525-2-45

Ham, O. K. (2010). Predictors of Health-Related Quality of Life among Low-Income Midlife Women. *Western Journal of Nursing Research*, *33*(1), 63–78. https://doi.org/10.1177/0193945910372776

Karmakar, N., Majumdar, S., Dasgupta, A., & Das, S. (2017). Quality of life among menopausal women: A community-based study in a rural area of West Bengal. *Journal of Mid-life Health*, *8*(1), 21. https://doi.org/10.4103/jmh.jmh_78_16

Lewis, J., Hilditch, J. R., & Wong, C. J. (2005). Further psychometric property development of the Menopause-Specific Quality of Life questionnaire and development of a modified version, MENQOL-Intervention questionnaire. *Maturitas*, *50*(3), 209–221. https://doi.org/10.1016/j.maturitas.2004.06.015

Lewis, V. (2009). Undertreatment of menopausal symptoms and novel options for comprehensive management. *Current Medical Research and Opinion*, *25*(11), 2689–2698. https://doi.org/10.1185/03007990903240519

Lee, M. S., Kim, J. H., Park, M. S., Yang, J., Ko, Y. H., Ko, S. D., & Joe, S. H. (2010). Factors influencing the severity of menopause symptoms in Korean post-menopausal women. *Journal of Korean Medical Science/Journal of Korean Medical Science*, *25*(5), 758. https://doi.org/10.3346/jkms.2010.25.5.758

Lee, Y., & Kim, H. (2008). Relationships between menopausal symptoms, depression, and exercise in middle-aged women: A cross-sectional survey. *International Journal of Nursing Studies*, *45*(12), 1816–1822. https://doi.org/10.1016/j.ijnurstu.2008.07.001

Mohamed, H. a. E., Lamadah, S. M., & Zamil, L. G. A. (2014b). *Quality of life among menopausal women*. https://www.ijrcog.org/index.php/ijrcog/article/view/991

Mishra, G. D., & Kuh, D. (2006). Perceived change in quality of life during the menopause. *Social Science & Medicine*, *62*(1), 93–102. https://doi.org/10.1016/j.socscimed.2005.05.015

Nall, R. (2023, May 24). *What to know about panic attacks and panic disorder*. https://www.medicalnewstoday.com/articles/8872

Nisar, N., & Sohoo, N. A. (2009, November 1). *Frequency of menopausal symptoms and their impact on the quality of life of women: a hospital-based survey*. PubMed. https://pubmed.ncbi.nlm.nih.gov/20361673/

Orenstein, G. A., & Lewis, L. (2022, November 7). *Eriksons Stages of Psychosocial Development*. StatPearls - NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK556096/

Rahman, S. S. A., Zainudin, S., & Mun, V. L. K. (2010). Assessment of menopausal symptoms using modified Menopause Rating Scale (MRS) among middle age women in Kuching, Sarawak, Malaysia. *Asia Pacific Family Medicine*, *9*(1), 5. https://doi.org/10.1186/1447-056x-9-5

Rostami, A., Ghofranipour, F. A., Ramazanzadeh, F., & Kazemnejad, A. (2004). The effect of health education program on quality of women's life in menopause. *ResearchGate*. https://www.researchgate.net/publication/343290845_the_effect_of_health_education_program_on_quality_of_women's_life_in_menopause

Rekkas, P. V., Wilson, A. A., Lee, V. W. H., Yogalingam, P., Sacher, J., Rusjan, P., Houle, S., Stewart, D. E., Kolla, N. J., Kish, S. J., Chiuccariello, L., & Meyer, J. H. (2014). Greater monoamine oxidase A binding in perimenopausal age as measured with carbon 11–Labeled harmine positron emission tomography. *JAMA Psychiatry*, *71*(8), 873. https://doi.org/10.1001/jamapsychiatry.2014.250

Sallam, H., Galal, A., & Rashed, A. R. (2006). Menopause in Egypt: past and present perspectives. *Climacteric*, *9*(6), 421–429. https://doi.org/10.1080/13697130601030170

Studenski, S. A., Perera, S., Patel, K. V., Rosano, C., Faulkner, K. A., Inzitari, M., Brach, J. S., Chandler, J., Cawthon, P. M., Connor, E. B., Nevitt, M. C., Visser, M., Kritchevsky, S. B., Badinelli, S., Harris, T. B., Newman, A. B., Cauley, J. A., Ferrucci, L., & Guralnik, J. M. (2011). GAIT speed and survival in older adults. *JAMA*, *305*(1), 50. https://doi.org/10.1001/jama.2010.1923

Thurston, R. C., & Joffe, H. (2011). Vasomotor Symptoms and Menopause: Findings from the Study of Women's Health across the Nation. *Obstetrics and Gynecology Clinics of North America*, *38*(3), 489–501. https://doi.org/10.1016/j.ogc.2011.05.006

Williams, R., Levine, K. B., Kalilani, L., Lewis, J., & Clark, R. V. (2009). Menopause-specific questionnaire assessment in US population-based study shows negative impact on health-related quality of life. *Maturitas*, *62*(2), 153–159. https://doi.org/10.1016/j.maturitas.2008.12.006

Waidyasekera, H., Wijewardena, K., Lindmark, G., & Naessén, T. (2009). Menopausal symptoms and quality of life during the menopausal transition in Sri Lankan women. *Menopause*, *16*(1), 164–170. https://doi.org/10.1097/gme.0b013e31817a8abd