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Correlation Between Severity of Symptoms and Mental Health Among Menopausal Middle Aged Women

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ABSTRACT

BACKGROUND AND NEED OF RESEARCH: Menopause is a natural event, which women experience around age 50. It is defined as the final menstrual period associated with marked biological and hormonal changes. Although it is a physiological process, as final loss of estrogen activity which may have a negative impact on mental well-being; lead to vasomotor symptoms, sleep disturbances, sexual problems, cognitive decline, and depressive symptoms, such as schizophrenic psychoses.
AIMS AND OBJECTIVES: This study aims to examine the correlation between the severity of menopausal symptoms and mental health status among middle aged menopausal women.
METHODOLOGY: A study was conducted among middle aged menopausal women with the age group of 45 to 60 years. Total 80 participants who met the inclusion criteria were recruited. Severity of symptoms was assessed via Menopausal Rating Scale while mental health status was rated via DASS 21 Scale for each patient.
RESULT: Data of the study shows non normal distribution; hence spearman test was applied for statical analysis. Result shows strong positive correlation between severity of menopausal symptoms and mental health score Depression [r=.815, p=.000], Anxiety [r=.831, p=.000], Stress [r=.567, p =.000] which indicates effects of severity in symptoms on mental health.
CONCLUSION: The findings indicate significant positive correlation. Specifically, mental health is associated with severity of symptoms.

Keywords: Menopausal women, Menopausal Rating Scale, DASS 21, Mental health

INTRODUCTION

Menopause is defined as the permanent cessation of menstrual periods, confirmed after 12 consecutive months without menstruation, and commonly occurs around age 50 although timing varies significantly across individuals [1]. This transition results from sharply declining estrogen and progesterone levels, and is accompanied by vasomotor symptoms (hot flashes, night sweats), sleep disturbances, sexual dysfunction, cognitive changes, and mood disorders.

There is a strong interconnection between vasomotor symptoms (VMS)-such as hot flashes and night sweats-and mood disorders, with evidence suggesting that each can influence the onset and severity of

the other. A systematic review and meta-analysis found bidirectional links: women with depressive symptoms are more likely to experience VMS, and vice versa [2]. Vasomotor symptoms (VMS)-particularly hot flashes and night sweats-show a robust, bidirectional relationship with mood disturbances. A systematic review of 16 longitudinal studies concluded that VMS significantly increase the odds of developing depressive symptoms (OR up to 8.9), while baseline depression is also associated with a higher likelihood of VMS (OR ~3.1) [3]. Cross-sectional analyses further support this link: perimenopausal women experiencing VMS have over four times the odds of depression compared to those without such symptoms.

Moreover, the perimenopausal period—typically spanning three to five years before and after the final menstrual period—carries a substantially elevated psychiatric risk. Meta-analyses indicate a ~40 % increased risk of depressive symptoms during perimenopause compared to premenopause (OR ≈ 1.40, 95% CI 1.21–1.61) [4]. Large-scale UK Biobank data additionally reveal that the four years surrounding menopause are marked by a 30 % increase in new-onset major depressive disorder and a striking 112 % increase in first-time mania incidence [11].

Cognitive complaints—often referred to as "brain fog"—and reduced sexual function are prevalent and worsen mental health. In rural midlife women, higher overall menopausal symptom severity was associated with poorer memory, attention, and language skills, with severe depression and sexual dysfunction predicting lower cognitive scores [12]. The "estrogen withdrawal hypothesis" suggests that the sharp decline in estrogen levels disrupts the regulation of key neurotransmitters, such as serotonin and dopamine, thereby increasing vulnerability to depressive and anxiety symptoms. In parallel, the "domino theory" proposes an indirect pathway, where vasomotor symptoms—particularly night sweats and hot flashes—lead to chronic sleep disruption, which subsequently triggers or exacerbates mood disorders [13]. Other contributing factors include life stressors, prior psychiatric history, socioeconomic constraints, and attitudes toward aging. The study aims to investigate the relationship between the severity of menopausal symptoms and the mental health status of middle-aged women undergoing menopause. This research is crucial for understanding how menopausal transitions may impact mental well-being and the quality of life in this demographic.

MATERIALS & METHODS

Methodology:

A correlational study was conducted to examine the relationship between the severity of menopausal symptoms and mental health status among middle-aged women in the age group of 45 to 60 years. A total of 80 participants who met the inclusion criteria were screened for the study. The inclusion criteria required that participants were naturally menopausal, aged between 45 and 60 years, and not receiving hormone replacement therapy or other treatments that could significantly affect menopausal symptoms or mental health outcomes. The participants were selected from a healthcare facility where they were assessed for eligibility.

To assess the severity of menopausal symptoms, the **Menopausal Rating Scale (MRS)** was used. The MRS is a widely validated tool used to measure the severity of common menopausal symptoms, such as hot flashes, night sweats, mood swings, sleep disturbances, and urogenital symptoms [5]. The scale consists of 11 items, each rated on a 5-point scale from "none" to "very severe," allowing for the quantification of symptom severity and providing insights into the ++intensity of the menopausal experience.

Mental health status was assessed using the **Depression, Anxiety, and Stress Scale 21 (DASS-21)**, a well-established instrument used to evaluate psychological distress, including depression, anxiety, and stress.

The DASS-21 consists of 21 items, with seven items each for depression, anxiety, and stress, and participants are asked to rate how much each statement applied to them over the past week. The scores from the DASS-21 were categorized to determine the severity of each mental health component, ranging from normal to extremely severe levels of distress [6].

Data were collected using individual data collection forms that recorded responses to both the MRS and DASS-21 scales. After gathering the data from all participants, statistical analysis was conducted using **SPSS Version 20** (IBM Corp, 2011) to determine the correlation between the severity of menopausal symptoms and mental health status. The statistical methods employed included Pearson's correlation coefficient to measure the strength and direction of the relationship between the two sets of variables.

The methodology was designed to ensure a comprehensive assessment of both physical and psychological aspects of menopause, and the findings from the statistical analysis were expected to provide valuable insights into the interplay between menopausal symptoms and mental health in middle-aged women. By utilizing these standardized scales and rigorous data collection methods, the study aimed to contribute to a more thorough understanding of the mental health challenges faced by women during this critical life transition.

➢ INCLUSION CRITERIA

- Age group of (40-60 years)
- Premenopausal women having irregular monthly periods.
- Postmenopausal women with natural history of menopause
- Subjects not taking any hormonal therapy.

➢ EXCLUSION CRITERIA

- Subjects with any neurological, vestibular and musculoskeletal disorders.
- Pregnant women.
- Subjects having diabetes, cardiac and thyroid disorders, hearing deficit & visual impairments
- Subjects not attended a structured physical activity or any exercise program prior 6 months.
- Women with induced menopause, simple hysterectomy

STATISTICAL ANALYSIS

The data did not meet the assumptions of normality (as assessed by [insert test used, e.g., Shapiro-Wilk test or visual inspection of Q-Q plots]), non-parametric statistical methods were employed for the analysis. Spearman's rank-order correlation coefficient (ρ) was utilized to assess the strength and direction of the associations between menopausal symptom severity and mental health outcomes, including depression, anxiety, and stress levels.

Spearman's correlation is appropriate for ordinal data and non-normally distributed variables, providing a robust measure of monotonic relationships.

The analysis revealed the following:

- **Depression:** A very strong positive correlation was observed between menopausal symptom severity and depression scores (Spearman's $\rho = 0.815$, $p < 0.001$), indicating that greater symptom severity is associated with higher levels of depression.
- **Anxiety:** Similarly, a very strong positive correlation was found between symptom severity and anxiety scores (Spearman's $\rho = 0.831$, $p < 0.001$), suggesting a strong co-occurrence of anxiety symptoms with increasing menopausal symptom burden.
- **Stress:** A moderately strong positive correlation was identified between menopausal symptom severity and stress levels (Spearman's $\rho = 0.567$, $p < 0.001$), reflecting a notable, though somewhat weaker, relationship.

All correlations were statistically significant at the $p < 0.001$ level, underscoring the consistency of the associations across different mental health domains.

These findings suggest that as the severity of menopausal symptoms increases, there is a corresponding and significant rise in psychological distress, particularly in the domains of depression and anxiety, and to a lesser extent, stress.

Statistical analyses were performed using [insert software used, e.g., SPSS version]

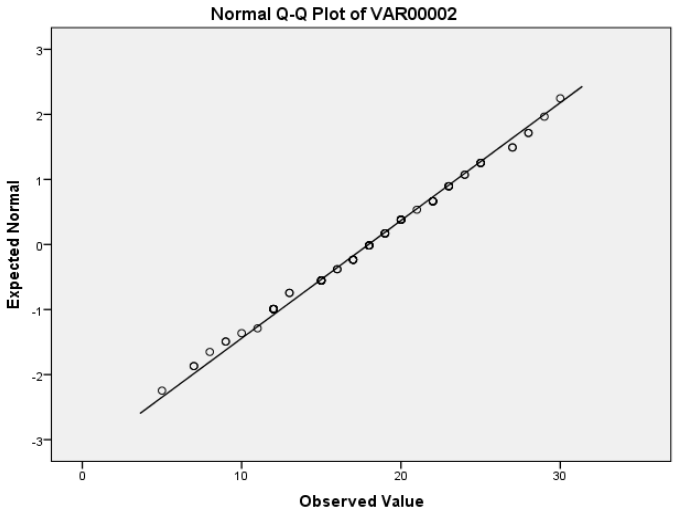
RESULT

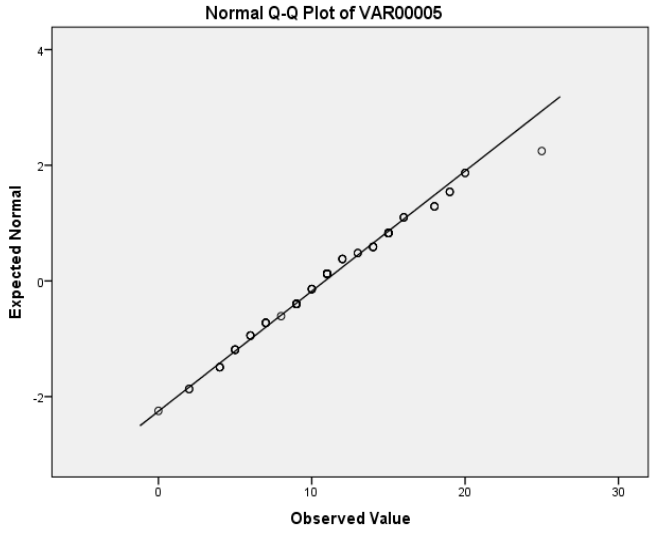
The data did not follow a normal distribution; non-parametric statistical methods were employed. Specifically, the Spearman's rank-order correlation test was applied to assess the relationship between the severity of menopausal symptoms and mental health outcomes. The results indicated a statistically significant and strong positive correlation between menopausal symptom severity and various dimensions of mental health.

A very strong positive correlation was observed between symptom severity and depression scores (Spearman's $\rho = 0.815$, $p < 0.001$), as well as anxiety scores (Spearman's $\rho = 0.831$, $p < 0.001$). This implies that as the severity of menopausal symptoms increases, levels of depression and anxiety also tend to rise significantly. A moderately strong positive correlation was also found between symptom severity and stress levels (Spearman's $\rho = 0.567$, $p < 0.001$), suggesting a notable, albeit slightly less intense, association.

These findings suggest that the severity of menopausal symptoms may have a considerable impact on mental health, particularly in contributing to higher levels of depression, anxiety, and stress among affected individuals.

		MRS	DEPRESSION	ANXIETY	STRESS
MRS	Correlation Coefficient	1.000	.815**	.831**	.567**
	Sig. (2-tailed)		.000	.000	.000
	N	80	80	80	80
DEPRESSION	Correlation Coefficient	.815**	1.000	.679**	.624**
	Sig. (2-tailed)	.000		.000	.000
	N	80	80	80	80
ANXIETY	Correlation Coefficient	.831**	.679**	1.000	.476**
	Sig. (2-tailed)	.000	.000		.000
	N	80	80	80	80
STRESS	Correlation Coefficient	.567**	.624**	.476**	1.000
	Sig. (2-tailed)	.000	.000	.000	
	N	80	80	80	80

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Expected Normal
Observed Value
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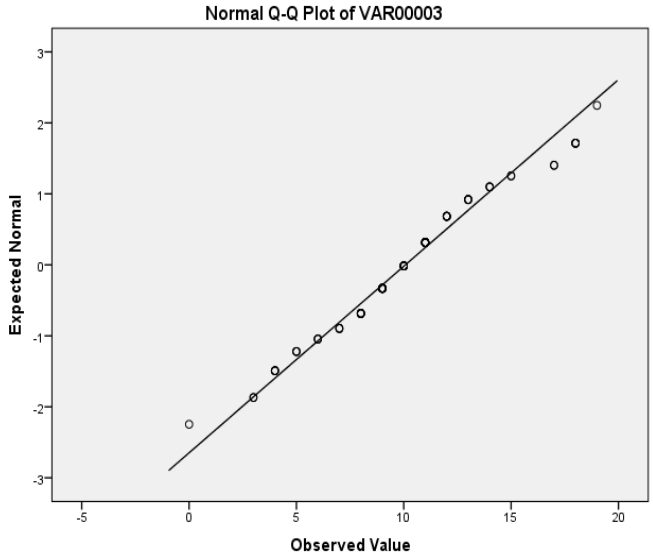
0
10
20
30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Observed Value
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5
10
15
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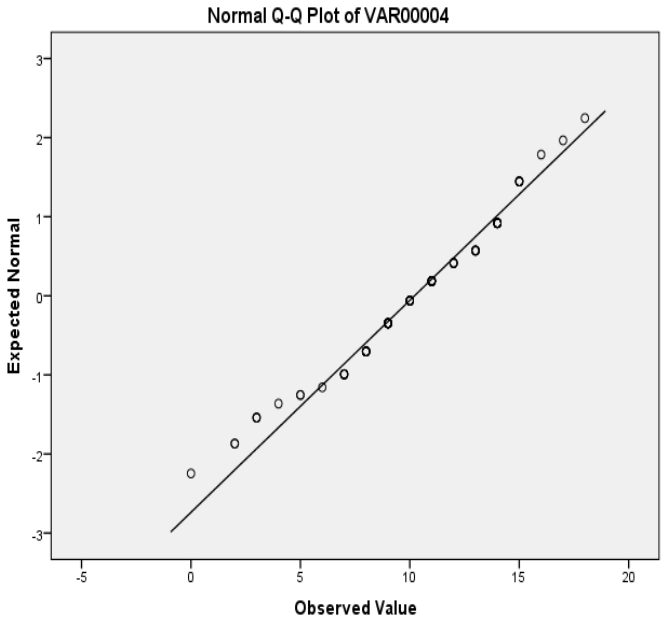
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Expected Normal
Observed Value
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1
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-2
-3
-5
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20

DISCUSSION

The menopausal transition is often accompanied by a variety of physical, emotional, and psychological symptoms that significantly impact women's quality of life. Accurate assessment of these symptoms is crucial for early intervention, awareness, and treatment. The study by Masjoud, Khani Jeihooni, and Hadian (2017) highlights the effectiveness of the Menopause Rating Scale (MRS) in identifying and categorizing the severity and frequency of menopausal symptoms in middle-aged women. Their research in Rasht, Iran, revealed that symptoms such as hot flashes, joint pain, and sleep disturbances differed based on the stage of menopause, illustrating the importance of stage-specific evaluation. The MRS serves a key role in clinical and community health settings by promoting awareness and enabling women to recognize symptoms that may otherwise be misunderstood or dismissed as unrelated health issues [8].

Equally important is the assessment of psychological symptoms, which often coexist with physical menopausal symptoms. Osman et al. (2012) validated the Depression Anxiety Stress Scales-21 (DASS-21) as a reliable and multidimensional tool for measuring psychological distress. Their findings confirmed the instrument's internal consistency and supported the bifactor model, which includes a general factor of psychological distress and specific dimensions of depression, anxiety, and stress. The DASS-21 is particularly beneficial during menopause, as emotional disturbances are common but often underdiagnosed. The role of DASS-21 in this context is to ensure that emotional health is given equal priority to physical health, allowing for a holistic approach to menopausal care [7].

Further evidence supports the importance of these tools in comprehensive health assessments. Dennerstein, Lehert, and Guthrie (2004) advocated for a biopsychosocial model in managing menopausal health, noting that both physiological changes and psychosocial stressors influence women's well-being [9]. Similarly, Freeman et al. (2007) found that the risk of depressive symptoms increases during the menopausal transition, especially in women with a history of mood disorders. These findings underscore the critical role of combined assessment tools like MRS and DASS-21 in identifying at-risk women early and guiding targeted interventions. Together, these tools not only help clinicians in diagnosis and treatment but also empower women by increasing their understanding of menopause-related changes [10].

CONCLUSION

The findings of this study reveal a significant positive correlation between the severity of menopausal symptoms and mental health distress among middle-aged women. Specifically, as the severity of menopausal symptoms increased—as measured by the Menopausal Rating Scale (MRS)—there was a corresponding rise in psychological distress, as assessed by the Depression, Anxiety, and Stress Scale-21 (DASS-21). Women reporting more intense somatic and urogenital symptoms, such as hot flashes, night sweats, sleep disturbances, and sexual dysfunction, also tended to report higher levels of depression, anxiety, and stress.

This association underscores the multifaceted nature of the menopausal transition, which affects both physical and psychological domains. The results suggest that the menopausal experience is not merely a biological phase but a biopsychosocial phenomenon with substantial implications for mental well-being. The positive correlation indicates that psychological symptoms may not arise in isolation but are interconnected with the physiological change's characteristic of menopause.

These findings highlight the need for an integrated approach to care, where physical symptom management is complemented by

mental health support. Interventions aimed at reducing menopausal symptoms may have the added benefit of alleviating psychological distress, and vice versa. Healthcare providers should therefore screen for both physical and mental health concerns in menopausal women to provide comprehensive and holistic care.

The study contributes to the growing body of literature emphasizing the importance of mental health assessment during menopause and supports the development of targeted interventions aimed at improving quality of life for middle-aged women during this critical life stage.

Declaration by Authors

Ethical Approval: Approved

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