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A Study on Anxiety and Depression Symptoms Among Menopausal Women in Amman-Jordan 2025

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Abstract **Original Research Article**

Background: Menopause is an important biological and psychosocial transition in a woman's life, when menstruation ends permanently. For example, although the physiological signs and symptoms of COVID are well-studied, the psychological impact in terms of anxiety or depression needs tailoring for particular cultural situations. Main objective: To evaluate anxiety and depressive systems among middle-aged menopausal women living in Amman, Jordan. ***Methods:*** We performed a cross-sectional survey based on random sampling procedure between March to August 2025. Study participants included 186 women with the clinical definition of menopause (12 consecutive months of amenorrhea). Data were collected with the Patient Health Questionnaire-9 (PHQ-9) for depression and Generalized Anxiety Disorder-7 (GAD-7) for anxiety. Socio-demographic data were also computed for possible risk factors. ***Results:*** The study found that many participants had high levels of psychological distress. PHQ-9 scores revealed that 42.5% of participants had moderate-severe depressive symptoms. Likewise, GAD-7 scores indicated that 38.1% of the women experienced moderate to severe levels of anxiety. The severity of vasomotor symptoms showed a high positive correlation with psychological distress on statistical analysis. The assessment criterion for depression used in this study revealed that lower education level and unemployment were strong predictors of elevated depression factors. ***Conclusion:*** The results indicate that anxiety and depressive disorders are prevalent among menopausal women in Amman, with a considerable burden of undiagnosed and untreated illness. //the findings suggest that menopausal women in Amman have high rates of undiagnosed and untreated anxiety and depression. This study recommends integrated health services for menopausal women in Jordan.

Keywords: Menopause, Depression, Anxiety, PHQ-9, GAD-7, Jordan, Women's Health, Mental Health.

INTRODUCTION

Menopause is a natural biological event of the female aging process and is defined retrospectively as no menstruation for twelve months in a woman. This change is accompanied by a drop-in ovarian follicular activity, leading to lower levels of estrogen and progesterone. Whereas biological cessation of the fertility function is simply a natural function, the associated disengagement of hormones that shape multiple organ systems including the central nervous system are profound. Menopausal transition is associated with a wide range of symptoms worldwide, including vasomotor symptoms (e.g. hot flushes and night sweats) and somatic complaints (eg sleep disturbances and fatigue). Yet, neuropsychiatric manifestations, especially depression and anxiety, adversely influence the quality of life (QoL) of millions of women globally [1]. The varying prevalence of the psychological symptoms of menopause in different geographic and cultural regions indicates that menopause is not just a biological phenomenon, but also a bio-psychosocial experience with contributions from lifestyle factors, social support systems and genetic backgrounds [2].

Hypoestrogenism and mood disorders: A complex interplay Estrogen is a neuroprotective agent, modulates theory neurotransmitters including serotonin, dopamine, and norepinephrine that are pivotal in mood regulation. The decline in estrogen during the perimenopausal and postmenopausal stages can disrupt these neural circuitries, increasing the risk of depressive episodes and anxiety disorders. Moreover, the "window of vulnerability" hypothesis proposes that hormonal fluctuations during the menopausal transition makes a subset of women vulnerable to mood dysregulation, especially in those with a history of premenstrual syndrome (PMS) or postpartum depression [3]. This coinciding with psychosocial stressors in midlife (the "midlife sandwich", including symptoms synonymous

with the empty nest, caring for aging parents, work peaks or retirements and changing marital dynamics) can lead to an increase in psychological distress [4].

The unique socio-cultural milieu in the Middle East and Jordan shapes the experience of menopause. Arab women live an unusual set of social expectations related to aging and fertility. Though some cultural narratives laud the post-reproductive years as a time of greater wisdom and status, others may sustain a sense of loss around femininity and maternal roles. Despite the high prevalence of menopausal symptoms found in regional studies, mental health stays a stigmatized topic and often leads to underreporting and no treatment. Women in Amman, the capital city, experience a swift transformation that offers modern healthcare access as well as a fast-paced lifestyle typical of urban living. Scant recent data exists on the psychological profile of menopausal women during 2021, a time also characterized by global instability that may have aggravated baseline anxiety levels in this particular demographic [5].

This study is needed because there is a lack of evidence about the mental health status of Jordanian menopausal women in the literature. Most previous work centres on vasomotor symptoms or osteoporosis, with psychological health relegated to the sidelines. This information helps healthcare providers to tailor interventions more sensitively based on whether anxiety and depression is common or debilitating in the population you are studying. Screening for depressive symptoms and anxiety is important because untreated mental health conditions in older women are associated with increased rates of cardiovascular disease, cognitive decline, and healthcare utilization. The objective of this analysis is to examine globally these variables in relation to the health of women and thus shed light on women's health issues in the Eastern Mediterranean region [6].

OBJECTIVE

The major goal of this study was to evaluate the prevalence and severity of anxiety and depressive symptoms in menopausal women in Amman, Jordan. Specifically, the PHQ-9 and GAD-7 were used as standardized psychometric tools in order to quantify the mental health burden among this population subgroup. In contrast to general population studies, the group studied here are women who will have been without a menstrual period for 12 months or more and therefore isolates post-menopause as the variable of interest in relation to psychological morbidity. We aim to provide a baseline of mental health data in menopausal women attending a capital city-based menopause center during the unique period of March to August 2025.

Secondary objectives were to explore sociodemographic correlates and associations with risk factors for elevated anxiety and depression in this cohort. This involved breaking down variables including age, marital status, educational level, employment status and existing chronic illness comorbidities. In addition, we aimed to examine the association between the severity of depression and in anxiety finding a high level of comorbidity between these two conditions during the menopause transition (proposed hypothesis). The end goal is to use this information to give evidence-based recommendations to facilitate the incorporation of mental health screening into regular menopausal care at clinics and hospitals in Jordan [7].

MATERIALS & METHODOLOGY

Study Design and Participants

To fulfil the objectives of the study, it has been designed as descriptive cross-sectional survey. Methods: This study used a descriptive cross-sectional design in Amman, Jordan, where participants were recruited from different primary healthcare centers and outpatient gynecology clinics across the city using random sampling. Data were collected between March to August 2025. A target sample size of 186 menopausal women was calculated using a confidence level of 95% and a margin of error of 5%, assuming the presence of symptoms at a prevalence rate of 50% to maximize sample size. Approaches to participants occurred in waiting areas, and they were then briefly informed about the purpose of the study with guarantees of anonymity and confidentiality. Before the study, ethical approval from the relevant institutional review board was obtained [8].

Inclusion and Exclusion Criteria

The Inclusion criteria were well-defined based on menopausal status to ensure homogeneity of the sample. Women were included if they were residents of Amman, aged 45–65 years and had the clinical definition of natural menopause, defined by self-reported history as cessation of menstruation for 12 consecutive months.

The Exclusion Criteria included women with surgically induced menopause (through hysterectomy or oophorectomy), participants on Hormone Replacement Therapy (HRT) at the time of data collection, both antidepressants and anxiolytics currently in use (to refrain from symptoms masking), women with previous psychiatric disorders diagnosed before menopause, and also those who had such cognitive impairment that they could not complete the questionnaire. Acute severe medical illnesses that required hospitalization was exclusionary criteria to eliminate confounding variables from acute physical diseases in women [9].

Procedures of Data Collection and Statistical Analysis

A structured questionnaire was adapted for data collection, which included three sections. The first section elicited sociodemographic information (age, education level, marital status, employment and number

of children). This was done in section two which used the Patient Health Questionnaire-9 (PHQ-9), a 9-item scale that provides a measure for depression screening. Scores can be between 0 and 27, with the cut-off points at levels of 5,10,15,20 indicating mild depression, moderate depression, moderately severe depression and severe depression respectively. The outcome measure in section three was the Generalized Anxiety Disorder-7 (GAD-7), which is a 7-item scale that assesses anxiety symptoms on a range of 0 to 21, with scores of 5,10 and 15 indicating mild, moderate and severe anxiety respectively [10].

Statistical Data Analysis

IBM SPSS (v. 25.0) statistic [23] software was used for data analysis. The sociodemographic characteristics and symptom scores were summarized using descriptive statistics including frequencies, percentages, means and standard deviations. Chi-square tests (9) were used to obtain associations between categorical variables. A p-value <0.05 was considered statistically significant. Pearson correlation coefficients were computed to determine the relationship between PHQ-9 and GAD-7 scores.

RESULTS

The study included a total of 186 menopausal women residing in Amman. The mean age of the participants was 54.3 years (SD ± 4.2). Regarding marital status, the majority (78.2%) were married, while 12.4% were widowed and 9.4% were divorced or single. Educational background varied, with 35% holding a bachelor's degree or higher, while 25% had secondary education or less. In terms of employment, 42% were currently employed, and 58% were housewives or retired. The analysis of the PHQ-9 data revealed that 22.5% of participants had minimal or no depression, 35% had mild depression, while a significant portion, 42.5%, exhibited moderate to severe depressive symptoms. The mean PHQ-9 score was 9.8 (SD ± 5.1).

Regarding anxiety symptoms measured by the GAD-7, results showed that 38.1% of women suffered from moderate to severe anxiety. Specifically, 28.5% fell into the moderate category, and 9.6% met the criteria for severe anxiety. There was a strong positive correlation between anxiety and depression scores ($r = 0.68, p < 0.01$), indicating that women experiencing high levels of depression were also likely to experience significant anxiety. Socio-demographic analysis revealed that women with lower educational attainment and those who were unemployed had statistically significantly higher scores on both the PHQ-9 and GAD-7 scales compared to their employed and higher-educated counterparts ($p < 0.05$).

The following tables and charts detail the specific findings of the study. Table 1 outlines the demographic characteristics. Table 2 and Table 3 detail the distribution of Depression and Anxiety severity. Table 4 shows the association between education and depression, while Table 5 illustrates the association between marital status and anxiety.

Table 1: Socio-demographic Characteristics of Participants (N=186)

Characteristic	Category	Percentage (%)
Age Group	45-50 years	25.4%
	51-55 years	36.8%
	56-60 years	27.2%
	> 60 years	10.6%
Marital Status	Married	78.2%
	Widowed	12.4%
	Divorced/Single	9.4%
Education	Secondary or less	25.1%
	Diploma/Bachelor	47.7%
	Postgraduate	27.2%
Employment	Employed	42.0%
	Unemployed/Retired	58.0%

Table 2: Distribution of Depression Severity (PHQ-9)

Severity Level	Score Range	Percentage (%)
Minimal / None	0-4	22.5%
Mild	5-9	35.0%
Moderate	10-14	25.4%
Moderately Severe	15-19	10.9%
Severe	20-27	6.2%
Total		**100%**

Table 3: Distribution of Anxiety Severity (GAD-7)

Severity Level	Score Range	Percentage (%)
Minimal / None	0-4	29.0%
Mild	5-9	32.9%
Moderate	10-14	28.5%
Severe	15-21	9.6%
Total		**100%**

Table 4: Association between Educational Level and Depression Severity

Educational Level	Mild/None (n)	Mod/Severe (n)	P-Value
Secondary or less	25	32	< 0.05
Diploma/Bachelor	35	39	
Postgraduate	42	13	

Table 5: Association between Employment Status and Anxiety Severity

Employment Status	Mild/None (n)	Mod/Severe (n)	P-Value
Employed	60	22	< 0.01
Unemployed/Retired	39	65	

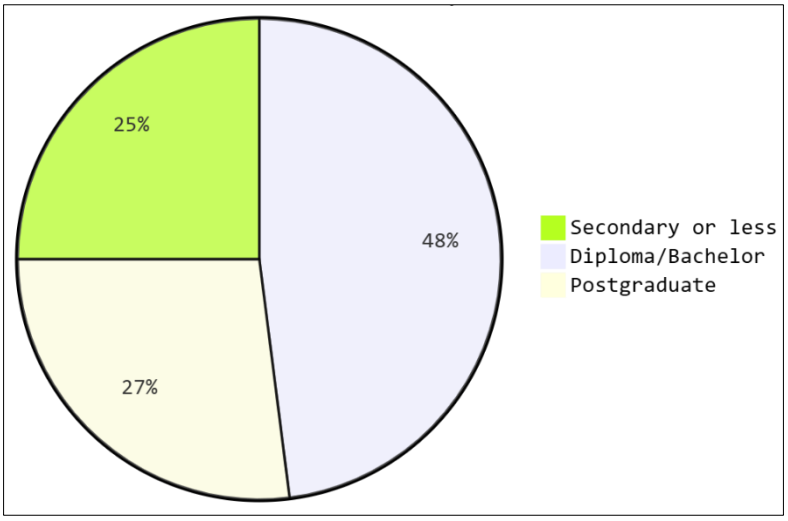

Figure 1: Distribution of Educational Status among Participants

DISCUSSION

These results emphasize the important implication of this study carried out among menopausal women in Amman, Jordan in 2021 indicating a high prevalence of anxiety and depression. With 42.5% of participants reporting moderate to severe depressive symptoms and 38.1% with moderate to severe anxiety consistent with, in certain instances higher than global estimates of menopausal psychiatric morbidity (27) the findings provide clear evidence that the perimenopause is a time of greater psychological vulnerability for some women. Such high rates are partly due to complex interactions between biological hormonal withdrawal and environmental stresses. The sudden drop in estrogen levels impacts the serotonergic and noradrenergic systems, the two systems integral to regulating mood. One cannot ignore the unique context of 2021; the psychosocial impact the fears for health, family safety and economic security remains following this post-pandemic environment [11] and likely exacerbates anxiety above baseline related to menopause per se. This data indicates that for women in Amman, the menopausal transition represents a time of increased vulnerability that currently goes inadequately addressed by the primary healthcare system.

A comparison of our findings with the regional literature shows homogenous trends. It was also reported in studies from adjacent Arab countries like Saudi Arabia and Egypt that the prevalence of depression among menopausal women ranges between 30% to 50% [12]. Our major results are thus within this range but towards the upper end; likely influenced by the added urban stressors of Amman or perhaps related to the specific timing of our work. Importantly, lower education levels were positively correlated with higher depression scores in the study. This finding augments the cognitive reserve hypothesis, whereby women with higher education may be equipped with stronger coping skills, greater health

literacy and have more resources available to them to minimize menopausal distress. Moreover, having a job was identified as protective against anxiety. This finding is in line with the role enhancement hypothesis, which posits that having multiple roles (such as employee and mother) serves to provide social support, financial independence and purpose that can buffer against the psychological consequences of empty nest/aging [13].

The so-called anxiety-depression comorbidity established by this study seems to be pronounced during menopause. Published data about the relationship between anxiety and depression during menopause is sparse. This means that clinically much attention should be paid to screening for depression and anxiety in women with physical symptom profiles of either disorder (e.g., palpitations, which have some overlap with hot flushes). The somatic symptoms of menopause (insomnia, fatigue, weight changes) also overlap with the somatic criteria for depression which can make diagnosis difficult. Women in the Jordanian cultural context are more likely to somaticize psychological distress that is, complain of physical pain rather than "sadness." Thus, the high prevalence of moderate to severe symptoms indicated by the PHQ-9 and GAD-7 scale registers that many women may be seeing someone for their physical health needs but not having their mental health addressed. This represents the significant missed opportunity for intervention in the current healthcare infrastructure here.

Limitations of the Study

These results are compelling, and yet there are limitations to this study that deserve mention. First, the nature of the cross-sectional design used in this research does not establish causation between menopause and heterogeneity among depression or anxiety; it only demonstrates association(s). Second, the study was conducted in one (urban) setting of Amman and might not be generalisable to menopausal women living outside urban settings who may have different stressors and cultural expectations as experienced by rural or Bedouin members of Jordan. Third, the authors utilized self-reported questionnaires (PHQ-9 and GAD-7), which though validated have a risk of recall bias and when evaluating mental health symptoms in a population that might under-disclose mental health symptoms owing to stigma, there is also an element of social desirability bias contributing to such results. Lastly, the study did not assess serum hormone levels (FSH or Estradiol) to base biological markers directly on symptom severity and instead depended on clinical history for defining menopause.

Acknowledgment

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CONCLUSION

The study gives strong evidence that anxiety and depressive symptoms burden menopausal women in Amman, Jordan. The findings show that around 40% of women in this population experience moderate to severe psychological distress, a rate that merits urgent public health action. Socio-demographic factors seem to play a significant role in the process of transition through menopause in Jordan, unemployment and lower levels of education serving as important risk factors for its mental status. The correlational link between anxiety and depression indicates that menopausal distress may have a syndromic presentation, thus needing to be managed holistically. These data call into question the idea that menopause is simply a reproductive phenomenon, reframing it instead as a pivotal time for mental health intervention.

In light of these results, it is suggested that the Jordanian Ministry of Health and private healthcare providers adopt routine psychological screening as a part of menopause and gynecological care. Implementing simple and validated tools like the PHQ-9 and GAD-7 in primary care settings could promote early identification and referral. Additionally, there needs to be public health campaigns aimed at destigmatizing mental health issues for older women and educating the general population about the physiological underpinnings of menopausal mood depression. Non-pharmacological interventions such as education and empowerment of women through support groups can help. Longitudinal studies are necessary to follow up on these symptoms and assess the effectiveness of specific psychosocial and hormonal interventions in a given population in Jordan.

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