

# Depression Among Menopausal Women: A Cross-Sectional Study in Vietnam

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**Abstract— Background:** Depression is a common and serious mental health problem of women during menopause. Conducting the searches related to this issue in middle-aged women at this period around the world provides a basis for building a number of preventive measures, supporting and improving the quality of life and well-design patient's care services. **Aims:** The objectives of this study were to determine the prevalence of depression in menopausal women and its related factors. **Methods and Materials:** This was a cross-sectional descriptive study, that was conducted on 306 women, 40-60 years old of Hai Chau district, Da Nang city in 2018. Questionnaires included: demographics questions, perceived health status questions, Pittsburgh Sleep Quality Index, and Zung Self-Rating Depression Scale. Data were analyzed using descriptive statistics and correlational statistics. **Results:** The prevalence of depression in menopausal women was 49%, of which mild depression and moderate depression accounted for 47.7% and 1.3%, respectively. Depression in menopausal women had a positive correlation with sleep quality ( $r=0.49$ ;  $p<0.0001$ ), age ( $r=0.29$ ;  $p<0.0001$ ), perceived health status ( $r=0.19$ ;  $p<0.0001$ ), sweating symptom ( $r=0.14$ ;  $p<0.05$ ) and had a negative correlation with education level ( $r=-0.36$ ;  $p<0.0001$ ). **Conclusion:** Screening for depression and its related factors among menopausal women contribute to health care providers for early detection and timely intervention; thereby reducing the burden of disease as well as improving the quality of life for women in the menopausal period.

**Keywords—** Depression, menopause, quality of sleep, sweating.

## I. INTRODUCTION

Depression is the most common illness worldwide, with approximately 350 million people affected [1], and puts a great burden on the health care system globally. It can have adverse effects on an individual's relationships, ability to work in or out of the family, financial status as well as the risk of self-harm and suicide. In addition to its impact on the psychosocial health of one's person, depression also has serious effects on physical health (joint pain, lack of libido, headache, etc) [2]. The International Classification of Diseases (ICD) diagnostic classification systems described three core symptoms of depression as low mood, anhedonia, and reduced energy levels. Other symptoms included impaired concentration, loss of confidence, suicidal ideation, disturbances in sleep, and changes in appetite [3]. Depression was twice as common in women as in men, and some suggested that women might be at increased risk of depression during periods of hormonal change such as puberty, pregnancy, and menopause stages [4]

Around the world, most women enter menopause between the ages of 49 and 52; while, the average age of menopause of

Vietnamese women is 50 years old [5]. Menopause was defined as the natural cessation of menstruation for 12 months, this is a part of a woman's normal biological and developmental processes. This period is associated with hormonal fluctuations that affect the body and brain, causing physical and psychosocial symptoms such as vasomotor symptoms, vaginal dryness, loss of sex drive, feelings of sadness, depression [6]. In particular, depression was considered the most common psychological problem in women during this period [7].

It was estimated that depressive symptoms occurred in about 15% to 50% of women during the menopause period [8]. If depression did occur, the severity of this symptom in menopausal women was four times more likely (or 13 times if they have a history of depression) during this time compared to other periods in their life [9].

Some recent studies indicated a high prevalence of depression in menopausal women. Wang's research recorded that among 566 midlife women aged 45 to 60 years in Taiwan, the percentage of depression accounted to 38.7% [10]; while a study in Iran in 2014, expressed a prevalence of 58.9% within menopausal women, with 39.8% mild depression, 16% moderate depression and 4% major depression, respectively [11].

As well as other life stages, depression in middle-aged women was a complex, multi-faceted phenomenon, influenced by many factors such as co-morbidity and mental health, sleep changes, age, ethnicity, body mass index, smoking, and stressful life events [12]. Besides, the diversity of factors associated with menopausal depressed mood illustrates the multifactorial nature of depression [13]. Other studies also expressed that more stressful life events, greater financial hardship, less social support, and negative attitudes toward menopause were significant correlates of depressive symptoms [13,14].

The burden associated with severe depressive disorder, at any given time, was undeniable [15]. However, the occurrence and persistence of depressive symptoms over time could also lead to psychosocial impairment and adverse effects on overall health. Therefore, it was important for the nurses to monitor more closely and periodically reassess the need for supporting to address bothersome depressive symptoms (eg, low mood, decreased motivation and excitement, and disrupted sleep), whether by following pharmacological agents, behavioral/lifestyle changes, or other healthcare services for women during their menopause period [15].

In conclusion, there have been a number of studies conducted to determine the prevalence of depression as well as to search for factors related to this issue in middle-aged women at menopause time around the world; thereby providing a basis for building a number of preventive measures, supporting and improving the quality of life and well-design patient's care services [2,8, 9,15]. However, the number of studies on this field is still limited in Vietnam. In order to understand the level of depression that occurred in women at the age of menopause period, we conducted this study with two main objectives: 1) Determining the prevalence of depression in menopausal women using the Zung's depression scale; and 2) Identifying some factors related to depression in women of menopausal age.

II. MATERIALS AND METHODS

Sample and setting

The body content of the paper must be in Two Column format with column size 3.5” and 0.25” spacing. This was a single-group survey-based correlation study that was conducted among women of menopausal age during 2018. Eligibility criteria for the study required that each menopausal woman was from 40 to 60 years old; was able to communicate Vietnamese, and had no neuropsychiatric disorders; otherwise woman being taking hormone therapy was excluded.

The sample size was calculated by G\*Power software ver. 3.1.9.4 (Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany; <http://www.gpower.hhu.de/>). For the correlation test, the input was a 1-tailed analysis, with an effect size of 0.2,  $\alpha$ -error probability of 0.05, and a power of 0.8. A minimum sample size of 153 participants was suggested initially, but to enhance the generalizability of the study results, the researchers doubled the number to 306. However, to ensure generalizability, we sampled by a convenient sampling technique all over 13 wards of Hai Chau District, Da Nang city.

Instruments

The researchers collected data by an interview questionnaire with four parts during home visits. Firstly, Part 1 included 9 questions related to the general characteristics of participants; and then Part 2 have one question belonging to the MOS20, was set to measure health perception. This question was determined by a Likert scale of 5-points, the higher the score got, the well-health status awareness the participants acquired [16]. Part 3 was the Pittsburgh Sleep Quality Index questionnaire that was used to assess the sleep quality of participants. The original scale consisted of 19 self-assessment items and was divided into 7 areas, included: Subjective sleep quality (satisfaction of participant about sleep), Sleep latency (time to fall asleep), Sleep duration (hours of sleep per night), Habitual sleep efficiency (the ratio of total sleep hour to time in bed), Sleep disturbances (number of times woken up by any reason), Use of sleeping medication, and Daytime dysfunction due to lack of sleep [17]. Finally, part 4 assessed the level of depression by using the Zung Self-Rating Depression Scale. The tool has 20 items with a total score ranging from 20 to 80 points; the result

indicated that the higher the score stood, the more severe of depression the participant suffered [18].

Statistical analysis

Descriptive statistics were used to express the characteristics of variables. Point Biserual, Spearman rho, and Pearson Product moment statistics were used to test the correlation between sleep quality and independent variables. A significant level was considered at  $p < 0.05$ .

III. RESULTS

The characteristics of participants

Table I showed that the mean age of participants was 49.45 (SD=5.48). Most of the menopausal women participating in the study were traders (54.2%) and officers (17.6%). For the educational level, up to 31.7% of participants completed high school and 16.0% were college, university, and graduate.

TABLE I. Characteristics of the participants (n=306).

Menopausal women characteristics	N	%
<b>Age</b>		
40-44	56	18.3
45-49	93	30.4
50-54	77	25.2
55-60	80	26.1
Mean = 49.45	Standard deviation = 5.48	
<b>Occupation</b>		
Worker	26	8.5
Trader	166	54.2
Housewife	58	19.0
Fisherman	2	0.7
Officer	54	17.6
<b>Education level</b>		
Primary school	71	23.2
Secondary school	76	24.8
High school	97	31.7
College/Undergraduate	49	16.0
Graduate	13	4.2
<b>Marital status</b>		
Married	274	89.5
Single	20	6.5
Divorced/Seperate	5	1.6
Widow	7	2.3
<b>Living arrangement</b>		
Alone	15	4.9
Spouse	103	33.7
Family	188	61.4
<b>Health perception</b>		
Excellent	3	1.0
Very good	3	1.0
Good	91	29.7
Fair	193	63.1
Poor	16	5.2
<b>Hot flashes</b>		
No	188	61.4
Yes	118	38.6
<b>Sweating</b>		
No	206	67.3
Yes	100	32.7
<b>Sleep quality</b>		
Good (PSQI ≤ 5)	54	17.6
Poor (PSQI > 5)	202	66.0
Very poor (PSQI ≥ 13)	50	16.4

The majority of participants were married (89.5%) and

currently living with their family (61.4%) or husband (33.7%). Most of the participants have perceived that their health was fair (63.1%). Nearly one-third of participants complained about vasomotor symptoms including hot flashes and night sweating with 38.6% and 32.7% respectively. Most of the participants had poor and very poor sleep quality, accounting for 66.0% and 16.4% accordingly.

*Depression in menopausal women*

Table II described that up to 49% of menopausal women had depression; of which 47.7% of participants being depressed with mild symptoms.

TABLE III. Depression in menopausal women

Depression	n	%
Moderate (60-74)	4	1.3
Mild (45-59)	146	47.7
Normal (20-44)	156	51.0

*Factors related to depression in menopausal women*

In table III, depression in menopausal women shown a moderate significant relationship with sleep quality ( $r= 0.49$ ,  $P<0.0001$ ), while it expressed a weak correlations with age ( $r=0.29$ ,  $P<0.0001$ ), health perception ( $r=0.19$ ,  $P<0.0001$ ), and sweating ( $r=0.14$ ,  $P<0.05$ ). Conversely, depression presented a negative relationship with educational level ( $r=-0.36$ ,  $P<0.0001$ ).

TABLE IIIII. Relationship between depression and related factors

Variables	Depression	
	r	P
Age	0.29 <sup>a)</sup>	0.0001
Educational level	-0.36 <sup>b)</sup>	0.0001
Health perception	0.19 <sup>b)</sup>	0.0001
Hot flashes	0.04 <sup>c)</sup>	0.534
Sweating	0.14 <sup>c)</sup>	0.017
Sleep quality	0.49 <sup>a)</sup>	0.0001

a) Pearson’s product moment correlation test; b) Spearman’s rho Correlation test; c) Point biserial correlation test;

IV. DISCUSSION

In our results, the prevalence of depression among menopausal women was high (49%), of which 47.7% were with mild depression, and 1.3% with moderate depression, respectively. This may be explained by fluctuations in gonadal hormones (including estrogen, progesterone, and androgen levels) during the menopause stage that is thought to increased the sensitivity of areas of the brain that play an important to mood regulation [2]. This increase in incidence has led researchers to view the menopausal transition as a "vulnerable window" to depression [19].

Moreover, in this transition period, some women have to cope with social function changes and in the fact that several women in this study were single, divorced, and widowed with the rate accounted to 6.5%, 1.6%, and 2.3%, respectively. Additionally, 15 menopausal women (4.9%) had to stay alone. Therefore, all of this variation may be affected to women in negative ways and led them to depression [20].

However, compared with research results about the prevalence of depression of both authors named Unsal [21], and Wang [22], our study's rate was higher, but we were lower

than other research conducting by Afsharis et al [11], and Tsiligianni et al [23]. This disparity can be explained by differences between age groups of participants, study locations, cultural characteristics, and depression screening tools.

Similarly, with some previous studies [20,23], our finding also revealed a positive significant association between depression and the age of menopausal women ( $r=0.29$ ,  $P<0.0001$ ). In addition, the study of Huyen and colleagues showed that women from 50 to 55 years old reported a 2.84 times higher risk of depression than the other menopausal age groups [24]. It can be explained that with the increase of age, middle-aged women have not only enduring some changes in their body, and declining health status, but also facing some transitions in their lives such as retirement, lose a loved one, lack of attention and care from offspring because they move out to study or work or living independently. All of those factors cause a negative in menopausal women's psychology [20].

There was a noteworthy negative correlation between education status with depression ( $r=-0.36$ ,  $P<0.0001$ ), specifically menopausal women with low levels of education tend to be more prone to depression. Our results were also consistent with other previous studies [11,21]. Most women with a high level of education are aware of the importance of being prepared for good health in general as well as mental health in particular when entering menopause; therefore, the ability to respond and solve the changes of this period is also better than women with less education of the same age.

Health perception status was also positively correlated with depression in menopausal women ( $r=0.19$ ,  $P<0.0001$ ). Previous studies have demonstrated that at any stage of life, negative perceptions of midlife women for their health conditions could be lead to nervous, and anxiety about their illness, so this contributes to an increased risk of depression for these subjects [25]. Therefore, raising awareness about health issues plays the main role in preventing the risk of depression for women in this period.

In a literature review of Llaneza and colleagues, the persistence of vasomotor symptoms such as hot flashes and night sweats were twice as high in women with moderate or severe depression as women with no or mild depression [19]. Additionally, the association between sweating symptoms and depression in menopausal women was also reported in this study ( $r=0.14$ ,  $P<0.05$ ). However, our study did not find a significant correlation between depression and hot flashes ( $P=0.53$ ).

Along with hot flashes and night sweats, sleep disturbances were also a common problem in menopausal women. This finding showed a remarkable relationship between sleep quality and depression ( $r=0.49$ ,  $P< 0.0001$ ), which means that middle-aged women in menopause who had poor sleep quality tended to be prone to depression. This conclusion has also been confirmed earlier in the studies of Bromberger [26] and Josephine [4]; and this may explain that women suffering sleep disorders, wake up many times at night, tossing and turning, having difficulty falling asleep, or living in a state of prolonged sleep deprivation was more



likely to cause psychological anxiety and stress, thereby prone to depression.

#### Limitations of the study

The use of the Zung depression scale was only a screening test, and does not help identify patients with depression. Hence, some cases with high screening scores would recommend visiting a psychiatrist for a definite diagnosis. Besides, the convenience sampling method that applied in this study was not generalized for the population of overall menopausal women.

#### V. CONCLUSION

Depression is an important mental health issue that affects the health and well-being of women experiencing menopause. Therefore, screening for depression by using the Zung scale as well as identifying depression-related factors such as age, education, health status, sweating, and sleep quality contributed important information for health care providers in monitoring and early detection depression in menopause.

#### Ethical approval

The study was approved of Da Nang University of Medicine and Pharmacy Technology under Decision No. 512/QD-DHKTYDDN.

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