



## A CROSS SECTIONAL STUDY ON THE PREVALENCE OF DEPRESSION AMONG 40-55-YEAR-OLD WOMEN VISITING TERTIARY CARE HOSPITAL IN KARNATAKA

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### ABSTRACT

**Background:** A large proportion of women undergoing menopause experience various abnormal symptoms such as, vasomotor symptoms. the vasomotor symptoms include hot flashes and night sweats; they are also considered as predominant menopausal symptoms. Multiple studies have shown that the increased risk of depression in the menopausal age group. **Objectives:** To compare the depression among postmenopausal women and women who has not attained menopause in the age group of 40 to 55 years in women visiting OPD of tertiary care hospital. **Methods:** The present study is a cross sectional study, Assessment of Depression of women was done using Beck's Depression Inventory, it is a validated instrument for measuring depression. This tool is a self-rated scale, where individuals rate their own symptoms of depression. **Results:** Data collected from 120 women in the age group of 40 to 55 years. Mean age of the participants in the present study were  $47.46 \pm 4.72$  years. the present study majority of the women i.e. 82.7% of the participants had mild mood disturbance, 10.8% had mild depression, 5.7% had moderate depression and 0.8% had severe depression as measured by Beck's Depression Inventory. 84.6% of postmenopausal women and 78.3% women who has not attained menopause had mild mood disturbance. 6.2% of premenopausal women and 10.2% of post-menopausal women had mild depression, 6.7% of the premenopausal women had mood changes, 9 % of post menopause women had moderate depression where as 2.4% of premenopausal and 2.5% of post-menopausal women had severe depression. The proportion of women with depression is slightly higher among postmenopausal women than women than the premenopausal women. **Conclusion:** The depressive symptoms were found to be higher among post-menopausal women compared to premenopausal women. The vasomotor symptoms (hot flashes/night sweats), had a significant association with depression. The women in perimenopausal age group need special attention and they should be screened for depression to diagnose and treat major depressive illness earlier. The treating physician should consider the mental health aspect of the patients.

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## INTRODUCTION

Menopause is one of the important transitional period in a woman's life, it is characterized by physiologic and psychosocial changes. A large proportion of women undergoing menopause experience various abnormal symptoms such as, vasomotor symptoms. the vasomotor symptoms include hot flashes and night sweats; they are also considered as predominant menopausal symptoms. Multiple studies have shown that the increased risk of depression in the menopausal age group.<sup>1,2,3,4</sup>

One of the reason for the symptoms is considered to be reduction in the hormones during menopause. Multiple Correlational studies have found that there is no link between oestrogen levels and presence of depression in this age group.<sup>5,6</sup> According to the study by Mathews et al that natural menopause is a benign event for the majority of middle-aged healthy women.<sup>7</sup> Middle aged women face multiple challenges due to change in environment and family circumstances, along with the hormonal and biochemical changes which lead to mood changes and in some cases depression.

Vasomotor symptoms are generally associated with a higher prevalence of Depressed mood<sup>8,9,10</sup>. according to a study by Freeman EW et al hot flashes and depressive symptoms occurred early in the menopausal transition, they also reported that the depressive symptoms are more likely to precede hot flashes in women with no previous experience of either symptom.<sup>11</sup> The relation of depression with menopausal status is studied in many studies from different parts of the world. But limited research data are available regarding depression among women around the menopausal age in India, this study was under taken to find the relation of depression with menopausal status.

## OBJECTIVES

To compare the depression among postmenopausal women and women who has not attained menopause in the age group of 40 to 55 years in women visiting OPD of tertiary care hospital.

## METHODS AND MATERIALS

The present study is a cross sectional study conducted in the patients attending the outpatient or in patient services of tertiary care hospital in Karnataka, India.

**SAMPLE SIZE:** According to study by Biswajit L<sup>12</sup> in perimenopausal women the depressive disorder was seen in 31% of the study participants. using formula for Sample size  $n = \frac{[DEFF * Np(1-p)]}{[(d2/Z21 - /2 * (N-1) + p * (1-p)]}$ , prevalence of 31%, design effect of 1 and confidence limits as 10% and confidence level of 97%, The total number came up to 101 which was rounded off to 120.

**INCLUSION CRITERIA:** Women who belonged to age group of 40-55 years and who consented to be a part of study were included in the study.

### EXCLUSION CRITERIA:

- ) Women who had undergone surgical menopause
- ) Women receiving hormone replacement therapy
- ) Women who attained menopause more than five years back.

All Post-menopausal women who met the inclusion criteria were included in the study. Then for every woman who had attained menopause, woman in the same age group (43-55year) who had not attained menopause was chosen. Data were collected from women by interviewing with the help of a structured questionnaire consisting of a socio-demographic data, Beck's Depression Inventory.

**TOOLS OF ASSESEMENT:** Assessment of Depression of women was done using Beck's Depression Inventory,<sup>13,14</sup> it is a validated instrument for measuring depression. This tool is a self-rated scale, where individuals rate their own symptoms of depression. The Beck Depression Inventory (BDI) takes just 5-10 minutes to complete. It provides a fast, efficient way to assess depression. The test contains 21 items, most of which assess depressive symptoms on a Likert scale of 0-3. Each item is a list of four statements arranged in increasing severity about a particular symptom of depression. BDI-II total scores have been correlated with scores on other psychological tests.

Clinical interpretation of scores is accomplished through criterion-referenced procedures utilizing the following interpretive ranges: 0-13 - minimal depression; 14-19 - mild depression; 20-28 - moderate depression; and 29-63 - severe depression. Higher total scores indicate more severe depressive symptoms. All women were interviewed in the local language. Participants were informed about the and objectives of the study and an informed consent was obtained.

**STATISTICAL ANALYSIS:** The data was entered in Microsoft excel 2016 and coded and The Statistical Package for the Social Sciences Software Version 16.0 was used for statistical analyses. The Chi-square test was applied to find out differences in proportions. P-value less than 0.05 were considered as statistical significant.

## RESULTS

The results of data collected from 120 women in the age group of 40 to 55 years. Mean age of the participants in the present study were  $47.46 \pm 4.72$  years. 97.2% of the participants belonged to the Hindu religion, 2.8% belonged to the Muslim religion. Majority of study participants i.e. 61.8 % belonged to the nuclear family. Majority of participants i.e. 41.4 % were educated up to high school, followed by 25.1%, who had studied up to the middle school. 30.4% were educated up to primary level. 3.1% were illiterate. 84.3% of the all study subjects were house wives. In the present study majority of the women i.e. 82.7% of the participants had mild mood disturbance, 10.8% had mild depression, 5.7% had moderate depression and 0.8% had severe depression as measured by Beck's Depression Inventory. 84.6% of postmenopausal women and 78.3% women who has not attained menopause had mild mood disturbance. 6.2% of premenopausal women and 10.2% of post-menopausal women had mild depression, 6.7% of the premenopausal women had mood changes, 9 % of post menopause women had moderate depression where as 2.4% of premenopausal and 2.5% of post-menopausal women had severe depression. The proportion of women with depression is slightly higher among postmenopausal women than women than the premenopausal women. Chi square test was used and p value <0.05 was considered significant.

In a pre-menopause woman 92.6% had mild mood changes where as 7.4% had moderate to severe depression where as in a post menopause woman 90.1% had mild mood changes where as 9.9 % had moderate to severe depression. The percentage of women having severe depression was marginally more in the post menopausal age group. In women in whom hot flushes were absent 96.5% had mood changes where as 3.5% had severe depression. In women with hot flushes only 83.4% had mood changes where as 16.6 % had severe depression, this was significantly higher when compared with women who had not attained menopause with chi square value of 9.423 and p value of <0.001. In women in whom the night sweats were absent 95.3% had mood changes where as 4.7 % had severe depression. In women with night sweats only 80.1 % had mood changes where as 19.9% had severe depression, this was significantly higher when compared with women who had not attained menopause with chi square value of 12.34 and p value of <0.001. In women in without disturbed sleep 95.3% had mood changes where as 7.8 % had moderate or severe depression.

**Table 1. Relation between menopausal symptoms and Depression**

SYMPTOMS	CATEGORY	MINIMAL AND MILD DEPRESSION	MODERATE/SEVERE DEPRESSION	X <sup>2</sup> value	P VALUE
Menopause	Not Attained	111(92.6%)	9(7.4%)	0.469	0.246
	Attained	108(90.1%)	12(9.9%)		
Hot flashes	Absent	116(96.5%)	4(3.5%)	9.423	0.001*
	Present	101(83.4%)	19(16.6%)		
Night sweats	No	114(95.3%)	6(4.7%)	12.34	0.001*
	Yes	96(80.1%)	24(19.9%)		
Disturbed Sleep	No	111(92.6%)	9(7.4%)	0.924	0.168
	Yes	97(81.3%)	23(18.7%)		
Sexual disinterest	No	112(93.4%)	8(6.6%)	1.30	0.127
	Yes	107(89.2%)	13(10.8%)		

In women with disturbed sleep only 81.3% had mood changes whereas 18.7% had severe depression, this was higher when compared with women who had not attained menopause, but it wasn't statistically significant with chi square value of 0.924 and p value of 0.168. In women without sexual disinterest 93.4% had mood changes whereas 6.6% had moderate or severe depression. In women with sexual disinterest only 89.2% had mood changes whereas 10.8% had severe depression, this was significantly higher when compared with women who had not attained menopause with chi square value of 1.3 and p value of 0.127.

## DISCUSSION

The total BDI scores among postmenopausal women were significantly higher compared to women who have not attained menopause. In spite of the depressive symptom being higher among post-menopausal women when compared to the premenopausal women, the clinical depression is not increased. In another study by N. Sagsoz et al, the authors found that the BDI scores were higher in menopausal women in comparison to the post-menopausal women<sup>15</sup>. In a study by Tangen T et al where women in the postmenopausal period were compared with the peri-menopausal period, the results showed that the depressive symptom score was greater whereas the anxiety symptoms were lower. However, these differences were not statistically significant<sup>16</sup>. In two studies which were longitudinal cohort studies where the authors tracked the premenopausal women for 5 to 8 years as they transitioned through menopause<sup>17,18</sup>, the authors found that there was an increase in risk for the development of depressive symptoms among women with no history of depression.

In the present study depression was associated with hot flashes, night sweats, sleep disturbance and sexual disturbance. Multiple studies have found similar results. Studies done across multiple regions have found that women who have prominent vasomotor and other physical symptoms like sleep disturbances, loss of interest, pains and myalgia have elevated rates of depression<sup>19,13</sup>. In a study by Joffe H et al<sup>20</sup> titled "Vasomotor symptoms are associated with depression in perimenopausal women seeking primary care" the researchers found that peri-menopausal women who reported vasomotor symptoms were 4.39 times more likely to be depressed than those not having the vasomotor symptoms<sup>21</sup>. In a study done by Li Y et al in perimenopausal and post-menopausal women in China it was seen that hot flashes and sweating were one of the risk factors associated with depression.<sup>21</sup>

## CONCLUSION

The depressive symptoms were found to be higher among post-menopausal women compared to premenopausal women. The vasomotor symptoms (hot flashes/night sweats), had a significant association with depression. The women in the perimenopausal age group need special attention and they should be screened for depression to diagnose and treat major depressive illness earlier. The treating physician should consider the mental health aspect of the patients.

**Conflict of interest** - None

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