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Prevalence of Psychiatric Morbidity and its Associated Risk Factors in Postmenopausal Women-A Cross-Sectional Study

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ABSTRACT

Background- Post-menopausal period is affected by hormonal changes leading to a woman showing variety of post-menopausal symptoms and these are associated with various social factors which collectively affect the mental health and quality of life. Comprehensive research in this direction is required and remedial measures need to be suggested. So, this study was done with objective to know the prevalence of psychiatric morbidity and its associated risk factors in postmenopausal women.

Methods- A cross-sectional observational study was done on 100 postmenopausal women. Socio-demographic characteristics were noted, depression was measured by Beck Depression Inventory, menopausal symptoms rated by menopausal rating scale (MRS) and perceived social support was measured by Multidimensional scale of perceived social support (MSPSS) and then their relationship was assessed.

Results:- Depression was prevalent in 56% of the postmenopausal women and it was associated significantly with low MSPSS and higher MRS value ($p<0.001$). Other factors such as low education, lower SES, being widowed and unmarried, history of physical abuse, chronic illness and lower age of menopause and menarche were also significantly associated with depression in postmenopausal women.

Conclusion- Multiple social and medical factors along with low social support and postmenopausal symptoms affect the mental health of postmenopausal women and must be taken care of along with hormonal treatment.

INTRODUCTION

Natural menopause as mentioned by WHO is cessation of menstruation for 12 consecutive months for which there is no other obvious physiological or pathological cause and without any clinical intervention. [1] Menopause occur due to reduced secretion of oestrogen and progesterone hormones occurring as a result of depletion of the finite store of ovarian follicles. The physiological period that follows final menopause and extending until the end of life is post-menopausal period.2

Females are more likely to suffer from depressive disorders compared to males, which remain a major cause of burden worldwide. 3 Physical, sexual, and especially psychological symptoms which include anxiety, mood fluctuations, impatience, weariness, low self-esteem, and loss of attention are among the clinical outcomes of hormonal changes that occur during the perimenopause. Anxiety and depression appear to be the most prevalent mental health issues associated with menopause. 4 Psychiatric morbidity during menopause is influenced by a person's psychological vulnerability, including a history of mood disorders, negative attitudes, personality traits, life stressors, poor coping skills, poor parenting, physical comorbidities, poor education and financial status, poor interpersonal relationships, and cultural beliefs about menopause. 5

Women are twice as likely as men to experience depression over their lifetime, and the risk rises sharply after menopause. 6 A systemic review and meta-analysis revealed that the prevalence of depression in postmenopausal women was 28 %.7 Risk factors for depression in postmenopausal women included low education, occupation, lower socioeconomic status, substance use by the spouse, lack of social support and others. 8 According to an Indian research, depression was more likely to be associated with sociocultural factors rather than by menopause, even though the majority of postmenopausal women experienced somatic symptoms. 9

So, it was required to know prevalence of depression among post-menopausal women and to find out the risk factors associated with depression in them, so that better screening, care, prevention, and intervention methods can be suggested. Keeping this objective in mind this study was conducted.

MATERIAL AND METHODS

This was a cross-sectional, observational, hospital based study conducted in Department of Psychiatry , B.S.Kushwaha Medical College and Hospital after taking ethical clearance. A total of 100 post-menopausal women of age group 41 to 55 years attending the OPD of Obstetrics and Gynaecology with one or other post-menopausal symptoms were enrolled in this study after doing simple random sampling. Due consent was taken from the study subject and those study subject who did not give consent, had major illness of any kind or had prior history of psychiatric illness were excluded from the study.

Study Tool and Study Procedure

Written consent was taken from the study participants and then following tools were used to record the data: -

- **Interview Schedule**- Information regarding socio-demographic characteristics and other social factors affecting the mental health was noted via interview schedule.
- **Beck Depression Inventory-II (BDI-II)** 10- It contains 21 items and identifies symptoms and attitudes associated with depression. The respondent must recall, based on the previous two weeks, the relevance of each statement relating to: sadness, pessimism, sense of failure, loss of pleasure, guilt, expectation of punishment, dislike of self, self-accusation, suicidal ideation, episodes of crying, irritability, social withdrawal, indecisiveness, worthlessness, loss of energy, insomnia, irritability, loss of appetite, preoccupation, fatigue, and loss of interest in sex. Total score is calculated and categorised as no depression (0-13), mild (14-19), moderate (20-28) and severe (29-63) depression.
- **Menopause Rating Scale [MRS]**11 – This scale was used to assess the post-menopausal symptoms including somatic complaints of hot flushes, heart discomfort, sleep problem and muscles and joint problems; psychological complaints of depression, irritability, anxiety and physical and mental exhaustion and urogenital complaints of sexual problems, bladder problems and dryness of vagina with each item was graded from 0-4 (none, mild, moderate, severe and very severe) and maximum score of 44.
- **Multidimensional Scale of Perceived Social Support (MSPSS):** 12 It is a scale containing 12 items to measure the family support, friend support and other support perceived by the study participants with total sum of all 12 elements is divided by 12 to get the overall score. It is categorised as having low support (1–2.9), moderate support (3–5) and strong support (5.1–7)

All data thus collected were entered in MS Excel sheet and then analysed by Statistical Analysis by SPSS version 23. Linear Variable were summarized as mean and SD while nominal and categorical variables were presented as proportions (%). Prevalence of depression among study subject was calculated by BDI-II and compared with various socio-demographic and other social characteristics and also with MRS and MSPSS. Analyses were performed, by doing various parametric or non-parametric tests, with a significance level of <0.05 and confidence level of 95%.

RESULTS

In this study the mean age of the study subject was 48.28 ± 4.39 yrs with most of the study subject i.e 42 (42%) belonged to age group 51 to 55 yrs. Most of the study subject i.e 31 (31%) were upper primary to metric pass followed by primary and less (30%). According to occupation majority i.e 56 (56%) were housewife and majority i.e 25 (25%) belonged to middle class according to B.G.Prasad scale. In the study population majority i.e 68 (68%) were married, rest 14 were unmarried and 18 were widowed and 55 (55%) reported active sexual history. Majority ever married study population i.e 46 (53.5%) had one to two children. 58 (58%) reported menarche at more than 13 yrs of age and majority i.e 63 (63%) were in their late menopause. Majority i.e 71 (71%) had social support and 16 (16%) reported incidence of physical abuse.

Menopause rating scale (MRS) was applied to revel the menopausal symptoms and we got median MRS score to be 16 (IQR-11-20) with somatic complains rating median to be 6 (IQR 2-9), psycological complains rating median to be 5.5 (IQR 2-9) and urogenital complains rating median 5 (IQR 2-7).

Then to evaluate the social support Multidimensional scale of perceived social support (MSPSS) was applied and the median MSPSS scale value was found to be 3.7 (IQR 2.1-4.9) i.e having moderate support. As per MSPSS majority i.e 44 (44%) had moderate support (3 to 5), 33 (33%) had low support (1 to 2.9) and rest 23 (23%) had high support (5.1 to 7)

Beck Depression Inventory was used to measure the level of depression and it was found that the median score was 15 (IQR 7-23.7) i.e overall post-menopausal women having mild depression. In this study majority i.e 44 (44%) were not suffering from any depression (score 0-13), 24 (24%) had mild depression (score 14-19) , 29 (29%) had moderate depression (score 20-28) and rest 3 (3%) had severe depression (score 29-63) . It was finally categorised as 44% having no depression and 56 % having

Table 1 Relationship between psycho-social variables and Depression

Variable		Total	BDI 2 Depression Category		Chi Sq	p
			No Depression	Depression Present		
	41 to 45	34	(9) 26.5%	(25) 73.5%		
	46 to 50	24	(13) 54.2%	(11) 45.8%		
	51 to 55	42	(22) 52.4%	(20) 47.6%		
	Primary and less	30	(7) 23.3%	(23) 76.7%		
	Upper primary to metric pass	31	(15) 48.4%	(16) 51.6%		
	Intermediate Pass	22	(12) 54.5%	(10) 45.5%		
	Graduate and above	17	(10) 58.8%	(7) 41.2%		
	Housewife	56	(25) 44.6%	(31) 55.4%		
	Skilled Worker	20	(9) 45.0%	(11) 55.0%		
	Unskilled Worker	24	(10) 41.7%	(14) 58.3%		
	Upper Class	16	(8) 50.0%	(8) 50.0%		
	Upper Middle Class	18	(11) 61.1%	(7) 38.9%		
	Middle Class	25	(15) 60.0%	(10) 40.0%		
	Lower Middle Class	14	(2) 14.3%	(12) 85.7%		
	Lower Class	27	(8) 29.6%	(19) 70.4%		
	Unmarried	14	(2) 14.3%	(12) 85.7%		
	Married	68	(35) 51.5%	(33) 48.5%		
	Widowed	18	(7) 38.9%	(11) 61.1%		
	1 to 2	46	(19) 41.3%	(27) 58.7%		
	More than 2	40	(23) 57.5%	(17) 42.5%		
	Yes	71	40 (56.3%)	31 (43.7)		
	No	29	4 (13.85)	25 (86.2%)		
	Yes	16	3 (18.8%)	13 (81.3%)		
	No	84	41 (48.8%)	43 (51.2%)		

On comparing age with prevalence of depression among post-menopausal women it was found that depression among menopause age group of 41 to 45 yrs was 73.5% and it was significantly higher compared to higher age group of 51 to 55yrs in which prevalence was 47.6% ($p<0.05$). Post-menopausal depression was significantly more among women with primary and less education i.e 76.7% compared to higher educated group ($p<0.05$). Prevalence of depression was not related to occupation of the study population. As per socioeconomic status significantly highest depression was present among lower middle class and lower class in which depression was prevalent in 85.7% and 70.4% population respectively and it was statistically significant. ($p<0.05$). Among unmarried (85.7%) and widowed (61.1%) prevalence of depression was significantly higher compared to married (48.5%) ($p<0.05$). Prevalence of depression was also significantly higher among study population with no social support (86.2%), with history of physical abuse (81.3%) and with chronic illness (67.4%) ($p<0.05$). Early menarche $\leq$ 13yrs was also significantly associated with depression (69%) compared to menarche later than 13yrs and even early stage of menopause was significantly related to depression (70.3%) ($p<0.05$) (Table 1)

Table 2 Distribution of study population according to BDI 2 scale and its relationship with MSPSS and MRS

Variable		**BDI 2 Depression Category**			
Distribution according to BDI 2 Depression Category					
		No Depression	**Depression Present**		
			56 (56%)		
			Mild	**Moderate**	**Severe**
			24 (24%)	29 (29%)	3 (3%)
Relationship between BDI 2 Depression Category and MSPSS					
		No Depression	**Depression Present**		
	Low Support (29)	0 (0.0%)	29 (100.0%)		
	Moderate Support (47)	21 (44.7%)	26 (55.3%)		
	High Support (24)	23 (95.8%)	1 (4.2%)		
	Chi Sq	**48.964**	**P=0.000**		
Independent sample T test comparing mean of MRS between BDI 2 Depression Category					
		No Depression	**Depression Present**		
	Mean	10.27 ± 3.63	20.00 ± 3.70		
	Mean Difference	-9.72			
	Standard Error Difference	0.74			
	p	**0.000**			

On comparing the social support of the post-menopausal study population calculated by multidimensional scale of perceived social support (MSPSS) with prevalence of depression it was found that depression was present in all 29 (100%) of study population with low support compared to study population with high support with depression present in 1(4.2%) and this difference was highly significant. ($p<0.001$). So low social support was a significant risk factor for depression in post-menopausal depression. Factors related to menopause was compared using menopause rating scale and it was found that the mean MRS value in study population having depression was 20.00 ± 3.70 compared to study population having no depression in which mean MRS value was 10.27 ± 3.63 with mean difference -9.72 (SE difference 0.74) and this difference was highly significant ($p<0.001$). So menopausal related symptoms had a significant impact on prevalence of depression among post-menopausal women. (Table 2)

DISCUSSION

This study tried to find out the prevalence of psychiatric morbidity among post-menopausal women and also tried to find out the risk factors associated with it. In our study as per BDI-2 it was found that 56 % of post-menopausal women was suffering from some or other intensity of depression. Aziz et al.8 in a similar study found the prevalence of depression in post menopausal women in 41%, and Vaziri et al. 13 found depression in 30.2% menopausal women , Li et al. 7 in their meta-analysis found postmenopausal depression in 28% and **Yadav et** al.14 in their metanalysis of studied in India found perimenopausal and post-menopausal depression in 42.47%.Since the prevalence depends

upon various social and other associated factors it varied from 28% in other studied to 56% in our study though our data was near to the data of Indian studies.

Depression was significantly more prevalent in women with lower age of menopause compared to higher age which was in concordance to finding by **Shah et** al.15 and Kim et al.16 In contrast **Aziz et** al. 8 and **Vaziri et** al. 13 did not find any age difference for the same and Siddiqui et al 17 reported higher age more associated with depression. We found early menarche $\leq$ 13yrs was also significantly associated with depression compared to menarche later than 13yrs and Kim et al. [16] had a similar finding with depression more in those with menarche $\leq$ 12 yrs. In contrast **Aziz et** al.[8] reported age of menarche after 13 years more associated with depression. More depression with lower age may have occurred be due hormonal changes associated with early menopause affecting the psycho-sexual domain of the women and more depression with early menarche may have occurred due to longer reproductive period.

Lower education and lower socio-economic status was significantly associate with depression among post-menopausal women in our study and other similar studies reported one or other form of psychiatry morbidity among them. 8,13 The fact that low knowledge about the changes occurring during the perimenopausal period make it difficult to cope up with it and the women feels these changes to be abnormal leading to depression. Low socio-economic condition hamper the health care seeking behavior of the post-menopausal and even low access to Gynecologist aggravate the symptoms leading to more chances of psychiatric morbidity.

We found more prevalence of depression in post-menopausal women who were unmarried or widowed compared to married with living husband . Even depression was significantly more with those with also low social support and with history of physical abuse.

Li et al. [7] found the same findings in their metanalysis while other study[8] reported depression more in women with loss of husband, anxiety significantly associated with type of family 17 and depression more associated with domestic violence. 8 So absence of social support in form of loss of husband and social problem like physical abuse do affect the mental health of a women specially in the transition period of menopause when there is changes in level of estrogen and progesterone.

Those post-menopausal women with chronic illness suffered from significant depression in our study . **Li et al**. 7 found that that postmenopausal women with a history of mental illness and chronic disease were more prone to depression. Bromberger et al.[18] reported that chronic medical diseases and a decrease in physical health have also been associated with mood symptoms during menopause and having at least one chronic medical condition prior to study entry more than doubled the risk of depression. So chronic health problems act as aadditive factor in the changed health scenario leading to increased risk of developing depression

Multidimensional scale of perceived social support (MSPSS) was applied to know about the status of social support of the study subject and it was found that the median MSPSS scale value was 3.7 (IQR 2.1-4.9) i.e having moderate support with majority i.e 44% had moderate support (3 to 5) and 33% had low support (1 to 2.9). Further we found that depression was present in all 100% of study population with low support compared to study population with high support and this difference was highly significant stressing upon low social support being a significant risk factor for depression in post-menopausal depression . **Aziz et** al.8 also got the same finding with study population with low MSPSS score are significantly associated with psychiatric morbidity. Pala et al. 19 also low social support (measured by MSPSS) , and low QOL are important risk factors which increase the frequency of depression in post and perimenopausal women. Najafabadi et al. 20 found a reverse relationship between perceived social support (PRQ 85-Part 2) and depression in postmenopausal women. We know the fact that not only in post-menopausal women but in other general population lack of social support can affect the mental health and in post-menopausal women it acts as a additive factor.

Menopause rating scale (MRS), which was applied to know about the problems associated with menopause showed median MRS score to be 16 (IQR-11-20) with somatic complains rating median to be 6 (IQR 2-9), psycological complains rating median to be 5.5 (IQR 2-9) and urogenital complains rating median 5 (IQR 2-7) . Also we found that the mean MRS value in study population having depression was significantly higher compared to those having no depression and this difference was highly significant ($p<0.001$). So menopausal related symptoms had a significant impact on prevalence of depression among post-menopausal women. **Aziz et** al.8 also got the same finding with study population with high MRS value were significantly associated with psychiatric morbidity. They also found positive correlation between age of menopause, family status, and poor relationship quality with MRS score, respectively. Kalhan et al. [21] in their study in rural India applied the MRS and found that the QOL was impaired in 70.2% of study subjects with menopausal symptoms and psychological symptoms attributed 70.8% to the poor QOL which collaborated with our findings.

Even Reed et al. 22 in their similar study found that women with moderate/severe depressive symptoms were almost twice as likely to report recent vasomotor symptoms (hot flashes and or night sweats) versus women with no/mild depressive symptoms and the percentage of women with menopausal symptoms, and the percentage with severe vasomotor symptoms were linearly associated with the depressive symptom score.

So almost all the studies reflected the same findings as in our study that post-menopausal symptoms affect the mental health of the women overall affecting her quality of life and may lead to depression.

CONCLUSION

Menopause causes changes in estrogen and progesterone level, not only leading to menopausal symptoms, but also due to presence of social factors, affect the mental health of the women. We found significant depression in post-menopausal women and that too was significantly associated with lower age of menopause, lower age of menarche and early stage of menopause. Even low education, lower socio-economic status, being unmarried or widowed, not having social support, history of physical abuse and

presence of chronic illness were significantly associated with depression among them. Multidimensional scale of perceived social support (MSPSS) scale showed that low support was significantly associated with depression and menopausal rating scale (MRS) showed that high MRS value, which depicted higher number and degree of menopausal symptoms, was also significantly associated with depression. So hormonal factors, socio-demographic factors and social support all work in congruence and affect the mental health of a post-menopausal women. So not only medical therapy like hormone replacement therapy, but also education about the body changes must be provided to the post-menopausal women and in additive psychiatric counselling must done.

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