Psychiatric morbidity in perimenopausal women

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ABSTRACT

Background: Women in the perimenopausal period are reported to be vulnerable to psychiatric disorders. Aim: To assess the psychiatric morbidity in perimenopausal women aged 45–55 years. Materials and Methods: This cross-sectional, observational, hospital-based study was conducted at the Department of Psychiatry in a tertiary care hospital attached to a medical college. The study sample consisted of consecutive women in perimenopause as diagnosed by a gynecologist and written informed consent for inclusion in the study. Women with a previous history of psychiatric illnesses, with a major medical illness, or who had undergone surgical menopause were excluded from the study. All women were evaluated with a brief questionnaire for collecting demographic and clinical information and the Mini International Neuropsychiatric Interview for assessing psychiatric disorders. Results: Of the 108 women in perimenopause included in the study, 31% had depressive disorder, 7% had anxiety, while 5% had depressive disorder with anxiety features. Psychiatric morbidity was significantly more in women having lesser education, from rural background, with a history of psychiatric illness in the family, a later age of menstruation, and in the late stage of perimenopause. Conclusions: Women in the perimenopause affected by psychiatric morbidity were most commonly diagnosed with depression. As perimenopause is a time of vulnerability in women, attention to signs and symptoms of depression may be required so that they may lead a more productive life.

Keywords: Anxiety, depression, perimenopause, psychiatric morbidity

Perimenopause is defined by the WHO as the 2–8 years preceding menopause and the 1-year period after final menses, resulting from the loss of follicular activity. During this period, production of the estrogen and progesterone becomes more irregular, with wide and unpredictable fluctuations in their levels; the levels of follicle-stimulating hormone increase until months after the last menstrual period leading to diminishing fertility and irregularity of menses. Currently, it seems that vulnerability of major depression in midlife women appears to be a myth, but the data accumulating suggest that the menopause transition is a time of increased risk for potentially impairing, depressive symptoms. Both clinical and community-based studies suggest that as compared to premenopausal women, depressive symptoms are more frequently reported in perimenopausal women. Methodology, definitions of the status of menopause, and degree of depression among women are widely varied in the studies; however, during the perimenopausal transition, majority of findings indicated an increased susceptibility to depression. This susceptibility may be due to declining estrogen levels causing neuroendocrine effects, hormonal decline and the subjective experience of somatic symptoms, and/or the occurrence of “exit” or “loss” events for women during this stage of life.

In India, a total of 130 million women by the year 2015 are expected to live beyond the menopause into old age. Currently, only to a few Indian women, evidence-based medicine is accessible. These women either go untreated...
or use unproven alternatives.[9] In the Indian scenario, due to growing population of menopausal women and increase in life expectancy, menopausal health demands priority which requires large efforts in educating and making women aware of menopausal symptoms. This will not only help in early recognition of symptoms, reduction of discomfort, and fears but also enable them to seek appropriate medical care if necessary.[10] However, to the best of our knowledge, not much work has been done in this area in India. In view of the paucity of Indian studies, the present work was conducted to assess the psychiatric morbidity in perimenopausal women aged 45–55 years. The study endeavors to elicit various demographic factors and psychopathology at the time of diagnosis.

**MATERIALS AND METHODS**

The study was a cross-sectional, observational, hospital-based study conducted at the Department of Psychiatry in a tertiary care hospital attached to a medical college. The protocol was submitted to and approved by the Institutional Ethical Committee.

**Study participants**

The study included 108 consecutive women diagnosed by a gynecologist to be in perimenopause in the age group of 45–55 years willing for participation after obtaining written informed consent from them. Women who had a history of psychiatric illness in the past, who had a major medical illness, or who had undergone surgical menopause were excluded from the study.

**Inclusion criteria**

- Women in the age group of 45–55 years in perimenopause attending the obstetrics/gynecology outpatient department (OBS/GYN OPD)
- Perimenopausal women willing for participation in the study after giving written informed consent.

**Exclusion criteria**

- History of any psychiatric illness/major medical illness
- Women who have undergone surgical menopause.

**Study procedure**

The individuals, who were diagnosed as being in perimenopause, were referred by the OBS/GYN OPD to the Department of Psychiatry. Patients in perimenopause were classified if the following events occurred during the previous period: Patients having variable cycle length (>7 days different from normal menstrual cycle length, which is 21–35 days) (early perimenopause) or by ≥2 skipped cycles and an interval of amenorrhea ≥60 days (late perimenopause). The above criteria were consistent with a construct used to characterize the menopausal transition by the Stages of Reproductive Aging Workshop.[11] The individuals and their relatives were explained the nature and purpose of the study and written informed consent was obtained from the individual.

The following materials were used for assessment of selected individuals:

**Sociodemographic and clinical data sheet**

A specially designed sociodemographic and clinical datasheet including age, sex, marital status, education, religion, occupation, type of family, domicile, age at menarche, number of living children, family history of psychiatric disorders, stage of perimenopause, perimenopausal complaints, mental status examination, and clinical impression was prepared for the study.

**Mini International Neuropsychiatry Interview English Version 6.0.0**

The Mini International Neuropsychiatric Interview (M.I.N.I.) was designed as a brief structured interview for the major Axis I psychiatric disorders in Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, and International Classification of Diseases-10. Studies show that the M.I.N.I. has acceptably high validation and reliability scores and can be administered in a much shorter period (mean 18.7 ± 11.6 min, median 15 min).[12]

**Statistical analysis**

The collected data were analyzed with the help of appropriate parametric (independent sample t-test) and nonparametric (Chi-square) statistical methods, using the Statistical Package for Social Sciences, Version 19.0 (IBM, SPSS 19.0). Analyses were performed with a significance level of <0.05 and a confidence level of 95%.

**RESULTS**

In the present study, a total of 108 perimenopausal women were evaluated, out of which 48 (44.44%) had psychiatric disorders including 34 (31%) women with major depressive disorder (MDD), 8 (7%) women having anxiety disorder, while 6 (5%) women were diagnosed as having MDD with comorbidity.

Table 1 shows the sociodemographic-wise distribution of the study population and psychiatric morbidity in the perimenopausal women. Women in the age group of 45–50 years had 40.96% (n = 34) psychiatric morbidity while women in the age group of 51–55 years had 56% (n = 14) psychiatric morbidity. There was no statistically significant difference in psychiatric morbidity between the age groups. Similarly, no statistically significant difference in psychiatric morbidity was found
in respect of marital status, religion, occupation, and type of family in the perimenopausal women. The study sample consisted of 10 uneducated women, out of which 8 (80%) had psychiatric morbidity. Seventy-one women were school educated, out of which 33 (46.47%) had psychiatric morbidity. Of the 27 college educated women, 7 (25.92%) had psychiatric morbidity. There was a statistically significant difference found between education and psychiatric morbidity in perimenopause. Similarly, psychiatric morbidity in perimenopause was significantly more in those living in rural area and having a family history of psychiatric disorder [Table 1].

There was a statistically significant difference found between age of menarche and psychiatric morbidity in perimenopause, later the age of menarche more than the psychiatric morbidity [Table 2]. Analysis of parity-wise distribution of study sample revealed that 41 out of 87 women with 1–2 children had psychiatric morbidity while 7 out of 21 women with 3 or more children had psychiatric morbidity. The difference was not statistically significant [Table 2]. The study also revealed that women in the late perimenopausal stage showed significantly higher psychiatric morbidity [Table 2].

Perimenopausal complaints
The most common complaints reported by the individuals included in the study were of irritability (45.4%) during the perimenopause, followed by headache (39.8%), weakness (38%), body ache (34.3%), sleep disturbances (33.3%), and joint pains (25%). Complaints of pain in abdomen (15.7%), palpitations (15.7%), hot flushes (13.9%), urogenital problems (10.2%), and lethargy (7.4%) were less commonly reported. Further
analysis revealed that women from rural area had significantly more complaints of body ache and joint pains as compared to those from urban areas [Table 3]. On the other hand, women in the late perimenopause had significantly more complaints of sleep disturbances and joint pains [Table 4].

**DISCUSSION**

Perimenopause is a time of vulnerability that might be associated with an increased risk of developing a psychiatric disorder in some women. A major finding of the present study was a psychiatric morbidity of 44.44% in the perimenopausal women, of whom 37.03% had major depression. This is in agreement with earlier studies on perimenopausal women, reporting an overall psychiatric morbidity of 49.5%[7] and rates of depressive symptoms ranging from 8% to 40%.[13,14]

**Education and psychiatric morbidity in perimenopause**
The findings of higher psychiatric morbidity in perimenopausal women with lower education are in agreement with earlier studies.[6,15] A multinational multi-ethnic cohort study also reported vulnerability of mood changes in women with lower educational attainment.[16] Lower education may be a marker of long-term socioeconomic or social stress because it has been associated with a variety of negative health outcomes.[16] Alternatively, higher education may buffer the impact of the transition as it has been associated with a more positive outlook as well as with higher levels of support, fewer symptoms, and the expectation that the menopause will be a positive experience.[16]

**Occupation and psychiatric morbidity in perimenopause**
The lack of association between occupation and psychiatric morbidity in the perimenopausal women in the present study is in agreement with an earlier Indian study[17] but is in contrast to a Brazilian study which reported that having a job was a protective factor against depression in perimenopausal women.[18] This aspect merits further detailed study.

**Domicile and psychiatric morbidity in perimenopause**
The findings of a significantly higher prevalence psychiatric morbidity in perimenopause in women from rural areas as compared to women from urban areas [Table 3] are in accordance with a previous study.[19] Urban women are better educated to a higher degree occupationally active and have a higher material standard of living, better socializing contacts, better contacts with their children, and were more often satisfied with sex life. Rural women more frequently live with their family and in other spheres of the psychosocial situation are worse off than those living in the urban areas.[20]

**Family history of psychiatric disorders and psychiatric morbidity in perimenopause**
The observation that women having family history of psychiatric illness were more vulnerable to psychiatric morbidity in perimenopause [Table 1] is in accordance with earlier studies.[21,22] This underlines the role of genetic factors in psychiatric morbidity in perimenopause.

**Age of menarche and psychiatric morbidity in perimenopause**
A statistically significant relation between age of menarche and psychiatric morbidity was observed in our study [Table 2]; later the age of menarche, higher was the...
psychiatric morbidity present in perimenopausal women. Serum estrogen levels have been suggested to be higher for several years among women with early menarche compared with women with later menarche. Estrogen has been postulated to have neuroprotective effects in the brain and it regulates the serotonergic system. In addition, estrogen has been found to be effective in reducing symptoms of depression in postpartum depression and an effective treatment of depression among perimenopausal women. An earlier study found that longer duration of exposure before menopausal transition was linked to lower risk of having depression. After adjusting for premenopausal depression, antidepressant use, ethnicity, baseline education, baseline age, baseline smoking and time, a woman’s risk for depression, antidepressant use, ethnicity, baseline education, baseline age, baseline smoking and time, a woman’s risk for perimenopausal depression was reduced 15.3% for each additional year of premenopausal estradiol exposure.

Perimenopausal stage and psychiatric morbidity in perimenopause

The findings of significantly higher psychiatric morbidity in the late perimenopause as compared to early perimenopause are in agreement with earlier studies. The increased risk of depression in later perimenopause suggests that the hormone events which characterize the late menopause transition may be relevant to the onset of this form of depression.

Perimenopausal complaints

Perimenopausal complaints commonly reported by our women [Table 4] are in accordance with an earlier Indian study in which the most frequent menopausal symptoms reported were somatic complaints while vasomotor symptoms were less frequently reported.

The assumption in the western world that vasomotor symptoms are universally the most common symptoms associated with menopause is challenged by data from cross-cultural studies. Studies carried out in a wide range of countries – such as Japan, Canada, Pakistan, Greece, Mexico, and Nigeria – and across countries show different frequency rates for hot flushes. Vasomotor symptoms are most common in Europe and North America, with prevalence estimated at 25–60% and 30–75%, respectively. In contrast, studies in Asian countries have found a prevalence of only 5%–10%. In agreement with the foregoing discussion, hot flushes were reported by 13.9% of women in the present study.

Insomnia and perimenopause

The finding of sleep disturbances in 33.3% of perimenopausal women is in agreement with the observation that sleep difficulty is one of the hallmarks of menopause. One-fourth to one-half of all women will note some sleep complaints during menopause. Mood disorders, specifically depression and anxiety, are associated with menopause. Insomnia is associated with depression in perimenopausal women. The “domino” theory of sleep disturbance as an explanation for depression in perimenopause proposes that sleep is disturbed by hot flushes or other factors related to menopause. Insomnia results from sleep disruption, and depression follows insomnia.

Table 3: Perimenopausal complaints in relation to domicile

| Perimenopausal complaints | Domicile (%) | \( \chi^2 \) | \( P \) |
|--------------------------|-------------|---------|-------|
|                          | Urban (n=89) | Rural (n=19) |       |       |
| Headache \( \frac{10.1}{10.1} \) | 39.3 | 42.1 | 0.254 | 0.614 (NS) |
| Weakness \( \frac{10.1}{10.1} \) | 34.8 | 52.6 | 2.106 | 0.1466 (NS) |
| Lethargy \( \frac{10.1}{10.1} \) | 5.6 | 15.8 | 2.361 | 0.1243 (NS) |
| Irritability \( \frac{10.1}{10.1} \) | 42.7 | 57.9 | 1.659 | 0.227 (NS) |
| Body ache \( \frac{10.1}{10.1} \) | 28.1 | 63.2 | 8.549 | 0.0034 (S) |
| Joint pains \( \frac{10.1}{10.1} \) | 20.2 | 47.4 | 6.152 | 0.0143 (S) |
| Pain in abdomen \( \frac{10.1}{10.1} \) | 18.0 | 5.3 | 1.908 | 0.0671 (NS) |
| Hot flushes \( \frac{10.1}{10.1} \) | 15.7 | 15.8 | 1.433 | 0.2330 (NS) |
| Sleep disturbances \( \frac{10.1}{10.1} \) | 37.1 | 15.8 | 3.934 | 0.0739 (NS) |
| Palpitations \( \frac{10.1}{10.1} \) | 15.7 | 15.8 | 0 | 0.9948 (NS) |
| Urogenital problems \( \frac{20.1}{20.1} \) | 10.1 | 10.5 | 0.0029 | 0.9568 (NS) |

NS - Not significant; S - Significant

Table 4: Perimenopausal complaints in relation to stage of perimenopause

| Perimenopausal complaints | Early perimenopause, n=81 (%) | Late perimenopause, n=27 (%) | \( \chi^2 \) | \( P \) |
|--------------------------|-------------------------------|-----------------------------|---------|-------|
| Headache \( \frac{20.1}{20.1} \) | 37.0 | 48.1 | 1.0433 | 0.307 (NS) |
| Weakness \( \frac{20.1}{20.1} \) | 33.3 | 51.9 | 2.9487 | 0.0859 (NS) |
| Lethargy \( \frac{20.1}{20.1} \) | 14.9 | 2.88 | 0.0896 (NS) |
| Irritability \( \frac{20.1}{20.1} \) | 40.7 | 59.3 | 2.8018 | 0.0943 (NS) |
| Body ache \( \frac{20.1}{20.1} \) | 37.0 | 25.9 | 1.11 | 0.292 (NS) |
| Joint pains \( \frac{20.1}{20.1} \) | 19.8 | 40.7 | 4.7572 | 0.0291 (S) |
| Pain in abdomen \( \frac{20.1}{20.1} \) | 16.0 | 14.8 | 0.0233 | 0.8789 (NS) |
| Hot flushes \( \frac{20.1}{20.1} \) | 14.8 | 11.1 | 0.2323 | 0.6298 (NS) |
| Sleep disturbances \( \frac{20.1}{20.1} \) | 27.2 | 51.9 | 5.555 | 0.0184 (S) |
| Palpitations \( \frac{20.1}{20.1} \) | 13.6 | 22.2 | 1.1403 | 0.285 (NS) |
| Urogenital problems \( \frac{20.1}{20.1} \) | 9.9 | 11.1 | 0.0337 | 0.8542 (NS) |

NS - Not significant; S - Significant
Limitations
The study was conducted in a tertiary hospital and is representative of the flow of patients at this hospital. Hence, the results cannot be generalized to the general population. The number of females who were divorced/separated/widowed was less; whether this could contribute to psychiatric morbidity in perimenopausal women could not be evaluated. Perimenopausal women from different ethnic, racial, and religious backgrounds could not be evaluated due to small sample size. Studies in perimenopausal women with the above-mentioned factors could help identify whether cultural factors affect psychiatric morbidity in perimenopause. Hormonal associations with perimenopausal psychiatric morbidity were not studied. As the morbidity of hormonally related psychiatric illness is quite significant, studies related to perimenopause and increased vulnerability should improve our understanding and the ability to enhance prevention and treatment of women's mental illness during perimenopause.

CONCLUSIONS

Women in perimenopause affected by psychiatric morbidity were most commonly diagnosed with depression. The study showed no statistical significance between perimenopause and psychiatric morbidity with factors such as marital status, parity, religion, occupation, and type of family. Lower level of education was associated with higher psychiatric morbidity in perimenopausal women. Perimenopausal women living in rural areas, having family history of psychiatric illness, later age of menarche, and late perimenopause showed significantly higher psychiatric morbidity. While evaluating women in the 45–55 years age group presenting with depression or anxiety symptoms, the clinician should inquire regarding recent changes in menstrual characteristics and perimenopause-related somatic symptoms.

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Conflicts of interest
There are no conflicts of interest.

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