

Anxiety among Perimenopausal Women: Prevalence and Associated Factors in a Rural Area of Delhi

Thiyam Manjeeta¹, Manish Kumar Goel², Tapas K. Ray³, Prerna Kukreti⁴

¹Post Graduate, Department of Community Medicine, Lady Hardinge Medical College, New Delhi

^{2,3}Director Professor, Department of Community Medicine, Lady Hardinge Medical College, New Delhi

⁴Professor, Department of Psychiatry & Drug De-addiction Centre, Lady Hardinge Medical College, New Delhi, 110001

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Corresponding author: Dr. Thiyam Manjeeta

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Abstract

Background: Perimenopause is the transitional phase preceding menopause and extending up to one year after the final menstrual period. Anxiety is one of the common psychological problems experienced during this period, along with other symptoms such as mood changes and irritability, in addition to vasomotor symptoms like hot flushes and night sweats. Despite its impact on women's well-being and quality of life, anxiety often remains under-recognized and undertreated in India. Therefore, the present study was undertaken to estimate the prevalence of anxiety disorders and examine the factors associated with anxiety disorders among perimenopausal women.

Method: The study was a cross-sectional study conducted in a rural community of Delhi from May 2023 to October 2024. A total of 378 women were enrolled in the study using systemic random sampling technique. A well validated Mini International Neuropsychiatric Interview (M.I.N.I) version 6.0.0 was administered as a diagnostic tool for the study.

Result: Generalised anxiety disorder (GAD) was present in 11.11% of perimenopausal women in the study. The prevalence of other anxiety related disorders namely panic disorder, agoraphobia, and social phobia among the study participants was 4.23%, 2.38%, and 2.38%, respectively. GAD was significantly associated with higher parity, not living with children despite having children, and past history of psychiatric morbidity. Homemakers were significantly more affected by panic disorder and agoraphobia.

Conclusion: The present study highlights the substantial burden of anxiety during perimenopause and the need to increase awareness among general public and women who are at higher risk of anxiety disorders.

Keywords: Perimenopause, Women's Mental Health, Generalised Anxiety Disorder, Panic Disorder, Agoraphobia, Social Phobia.

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Introduction

Perimenopause is the transitional phase preceding menopause and extending up to one year after the final menstrual period. It is characterized by marked hormonal fluctuations, particularly in oestrogen and progesterone levels, resulting in various physical and psychological changes. The average age of perimenopause among Indian women is approximately 44.69 ± 3.79 years, which is earlier than that reported in many Western populations. [1]

Hormonal changes during this period, along with social and environmental stressors, make women particularly vulnerable to psychological problems, including anxiety. Anxiety is one of the common psychiatric morbidities affecting women during

perimenopause. Fluctuating oestrogen levels influence neurotransmitter systems involved in mood regulation, while concurrent life events such as caregiving responsibilities, children leaving home, financial stress, and declining social support may further increase the risk of anxiety. Women with a past history of psychiatric illness or chronic medical conditions are especially susceptible.

Anxiety during perimenopause can adversely affect sleep, daily functioning, interpersonal relationships, and overall quality of life. Despite its significant impact, mental health problems in perimenopausal women often remain under-recognized and undertreated because of stigma, lack of awareness, and limited access to mental health services. There

is a paucity of community-based studies on anxiety among perimenopausal women in India. Therefore, the present study was undertaken to estimate the prevalence of anxiety disorders and examine the factors associated with anxiety disorders among perimenopausal women in a rural community of Delhi.

Material and Method

The present study was a community based, cross-sectional study conducted in a southwest area of Delhi from May 2023 to October 2024. The study enrolled women 41 years of age and above whose last menstrual cycle was within last 12 months at the time of the study. Women who were unable to communicate and post-menopausal were excluded from the study. The study included a total of 378 women and the sample size was calculated using the formula [2] $N = \frac{Z^2 \cdot p \cdot q}{d^2}$, taking into consideration 95% confidence level, 6% absolute error, design effect as 1.3, non-response rate of 10%, and a prevalence of 45% for common psychiatric morbidities, based on findings from a previous study [3]. The Common psychiatric morbidities in the study [3] included conditions such as anxiety and depression. The present article is a secondary analysis of the same study population, focusing specifically on anxiety disorders namely generalised anxiety disorder, panic disorder, agoraphobia and social phobia. Systematic random sampling technique was applied as the sampling technique. A self-designed and semi structured interview assisted questionnaire was used to collect the socio-demographic profile, menstrual, obstetric and other relevant clinical history. A well-validated Mini International Neuropsychiatric Interview (M.I.N.I) version 6.0.0 [4] was administered as a diagnostic tool to assess the prevalence of common psychiatric morbidities which include major depressive episode, suicidality, and anxiety disorders. SPSS statistics

version 25 was used for data analysis and p-value < 0.05 was considered significant association.

Result

Table 1 highlights the burden of anxiety disorders among the study participants. The prevalence of generalized anxiety disorder (GAD), panic disorder, agoraphobia, and social phobia among the study participants was 11.11%, 4.23%, 2.38%, and 2.38%, respectively. GAD was the most prevalent anxiety disorder observed in the study population.

Table 2 shows that anxiety disorders had no statistically significant association with age, religion, education status, socio-economic status, and type of family of perimenopausal women. Type of occupation was found to be significantly associated with panic disorder and agoraphobia, with higher prevalence among homemakers.

Table 3 shows that panic disorder, agoraphobia and social phobia were not significantly associated with marital status, parity, number of children living with the participants, and past history of psychiatric morbidity among perimenopausal women.

However, panic disorder was significantly associated with a history of hysterectomy, with a higher prevalence among women who had undergone the procedure (50.0%).

Significant associations were observed between GAD and parity, the number of children living with the participants, and a past history of psychiatric morbidity ($p < 0.05$). The highest prevalence of GAD was seen among women with parity > 2 (15.3%), those not living with their children despite having children (30.0%), and those who had past history of psychiatric morbidity (37.5%). GAD was not significantly associated with marital status or history of hysterectomy.

Table 1: Burden of different anxiety disorders among perimenopausal women (N=378)

Disorder	No. of participants who had the disorder (%)	No. of participants who did not have the disorder (%)	Total (%)
Generalized anxiety disorder (GAD)	42(11.11)	336(88.89)	378(100)
Panic disorder	16(4.23)	362(95.77)	378(100)
Agoraphobia	9(2.38)	369 (97.62)	378(100)
Social phobia	9(2.38)	369 (97.62)	378(100)

Table 2: Association of anxiety disorders with sociodemographic factors among perimenopausal women (N=378)

Socio-demographic Variables		Panic disorder		Agoraphobia		Social phobia		Generalised anxiety disorder	
		Present (%)	p-value	Present (%)	p-value	Present (%)	p-value	Present (%)	p-value
Age	41-43 (n=124)	4 (3.2)	0.153	2 (1.6)	0.524	3 (2.4)	0.808	11 (8.9)	0.482
	44-46 (n=135)	4 (3.0)		4 (3.0)		2 (1.5)		19 (14.1)	
	47-49 (n=85)	5 (5.9)		2 (2.4)		3 (3.5)		9 (10.6)	
	50-52 (n=23)	1 (4.3)		0 (0)		1 (4.3)		1 (4.3)	
	53-55 (n=11)	2 (18.2)		1 (9.1)		0 (0)		2 (18.2)	
Religion	Hindu (n=353)	15 (4.2)	0.854	8 (2.3)	0.655	9 (2.5)	0.721	37 (10.5)	0.328
	Muslim (n=19)	1 (5.3)		1 (5.3)		0 (0)		4 (21.1)	
	Others (n=6)	0 (0)		0 (0)		0 (0)		1 (16.7)	
Education	Illiterate, just literate, primary school (n= 144)	8 (5.6)	0.461	5 (3.5)	0.551	6 (4.2)	0.196	20 (13.9)	0.305
	Middle school, high school, intermediate/diploma (n=176)	7 (4.0)		3 (1.7)		2 (1.1)		15 (8.5)	
	Graduate, professional (n=58)	1 (1.7)		1 (1.7)		1 (1.7)		7 (12.1)	
occupation	Homemaker (n=260)	15 (5.8)	0.028	9 (3.5)	0.041	7 (2.7)	0.556	28 (10.8)	0.754
	Working outside home (n=118)	1 (0.8)		0 (0)		2 (1.7)		14 (11.9)	
Socio-economic status*	Upper, upper middle (n=110)	3 (2.7)	0.274	1 (0.9)	0.173	1 (0.9)	0.303	10 (9.1)	0.509
	Lower middle (n=127)	4 (3.1)		2 (1.6)		5 (3.9)		13 (10.2)	
	Upper lower, lower (n= 141)	9 (6.4)		6 (4.3)		3 (2.1)		19 (13.5)	
Type of family	Nuclear (n= 260)	12 (4.6)	0.583	6 (2.3)	0.890	5 (1.9)	0.386	28 (10.8)	0.754
	Joint (n=118)	4 (3.4)		3 (2.5)		4 (3.4)		14 (11.9)	

*According to Kuppuswamy scale CPI 2023 [5]

Table 3: Association of anxiety disorders with past history of psychiatric morbidity, and reproductive health among perimenopausal women (N=378)

Variables		Panic disorder		Agoraphobia		Social phobia		Generalised anxiety disorder	
		Present (%)	p-value	Present (%)	p-value	Present (%)	p-value	Present (%)	p-value
Past history of psychiatric morbidity	Present (n=8)	0(0)	0.548	0(0)	0.655	0(0)	0.655	3(37.5)	0.016
	Absent (n=370)	16(4.3)		9(2.4)		9(2.4)		39(10.5)	
Parity	0 (n=4)	0 (0)	0.186	0 (0)			0.832	0 (0)	0.045
	1 or 2 (n=198)	5 (2.5)		4 (2.0)		4 (2.0)		15 (7.6)	
	>2 (n=176)	11 (6.3)		5 (2.8)		5 (2.8)		27 (15.3)	
Number of children living with the participant (n=374) *	0** (n=10)	0 (0)	0.209	0 (0)	0.397	0 (0)	0.499	3 (30.0)	0.034
	1-2 (n=268)	9 (3.6)		5 (1.9)		8 (3.0)		24 (9.0)	
	≥3 (n=96)	7 (7.3)		4 (4.2)		1 (1.0)		15 (15.6)	
Marital status	Married (n=338)	14 (4.1)	0.711	9 (2.7)	0.580	7 (2.1)	0.302	36 (10.7)	0.055
	Widow (n=32)	2 (6.3)		0 (0)		2 (6.2)		3 (9.4)	
	Separated (n=8)	0 (0)		0 (0)		0 (0)		3 (37.5)	
Hysterectomy***	Yes (n=4)	2(50.0)	0.000	0(0)	0.754	0(0)	0.754	1(25.0)	0.374
	No (n=374)	14(3.7)		9(2.4)		9(2.4)		41(11.0)	

*Analysis included 374 participants who were parous, 4 out of the total 378 participants were nulliparous so excluded from the analysis. **for participants who had children but not living with them. *** participants who underwent hysterectomy within last 1 year at the time of study and had not attained menopause before the procedure

Discussion

The prevalence of GAD in our study was 11.11%. Studies [3,6-8] in India show a wide range of prevalence of anxiety. It was as low as 7% in a study and as high as 83% in another study. Studies in China [9,10] show prevalence of 12.62% -18%, which were slightly higher than our study. Studies in Brazil [11] and Poland [12] found prevalence of 39.3% and 40.6% respectively which were higher than our study. Panic disorder affected 4.23%, while agoraphobia and social phobia each had a prevalence of 2.38% among the study participants. Dar et al. [13] found higher prevalences of panic disorder and social phobia (56%).

This wide variation may result from several factors, including the use of different assessment tools, some employed screening instruments, while others utilized diagnostic tools. Furthermore, the studies were conducted across diverse settings, such as in hospital or community, urban slums and various regions, each characterized by distinct geographic, socioeconomic, and political conditions, further contributing to the wide variation in reported prevalence of anxiety disorders.

Age: No statistically significant association was found between age and anxiety disorders. Jagtap et al. [3] and Nagda et al. [14] found that there was no significant association with psychiatric morbidity and age. However, in studies by Siddiqui et al. [6] and Tangen et al. [15] age was significantly associated with psychiatric morbidities.

Religion: There was no significant association between anxiety and religion. Jagtap et al. [3] and Archana et al. [16] showed no significant associations between psychiatric morbidity and religion.

Education: No significant associations were found between anxiety and education status. Jagtap et al. [3], Grochans et al. [12], Archana et al. [16], Aziz et al. [17], Opperman et al. [18] and Bromberger et al. [19] found that lack of education was significantly associated with psychiatric morbidity in perimenopause and showed higher education levels as protective factor. However, Nagda et al. [14] reported no significant association of education and psychiatric morbidity.

Occupation: Panic disorder (5.8%, p=0.028) and agoraphobia (3.5%, p=0.041) were significantly

higher in homemakers possibly reflecting the added emotional and psychological burdens of homemaking and limited social interaction outside the home. Other anxiety disorders showed no significant differences. Aziz et al. [17] found significant association with occupation and psychiatric morbidity, higher among homemakers. Grochans et al. [12] found that employment was a protective factor. Freeman [20] in his review showed that unemployment was a risk factor. Jagtap et al. [3], Nagda et al. [14], and Archana et al. [16] showed no significant associations between psychiatric morbidity and occupation.

Socio-economic status (SES): Anxiety disorders showed no significant associations with SES. Aziz et al. [17] showed significant association of psychiatric morbidity with lower socio-economic status. Archana et al. [16] showed no significant association between psychiatric morbidity and SES.

Type of family: Anxiety disorders showed no significant differences based on family type. Jagtap et al. [3] and Nagda et al. [14] showed no significant associations between psychiatric morbidity and type of family.

Past history of psychiatric morbidity: GAD was found to be significantly higher among women with past history. Other anxiety disorders were not significantly associated with past history.

Marital status: Anxiety disorders were not associated with marital status of the participants. Jagtap et al. [3] also showed similar findings.

Parity: Women with more than two children had significantly higher GAD prevalence (15.3%, $p=0.045$). This may be due to the increased responsibilities and stress associated with raising multiple children, which can lead to higher emotional and psychological strain. Aziz et al. [17] found psychiatric morbidity was significantly associated with having more than two children. Panic disorder, agoraphobia and social phobia showed no significant associations with parity. Jagtap et al. [3] also showed no significant association between psychiatric morbidity and parity.

Number of children living with the participants: The prevalence of GAD was significantly higher among women who were not living with their children despite having children (30.0%, $p=0.034$). Other anxiety disorders showed no significant association. The increased prevalence among women who were not living with their children can be explained by the phenomenon "Empty-nest syndrome". Mothers often face heightened emotional challenges when their children leave home. This includes feelings of loneliness and an identity crisis resulting from the loss of their primary caretaking role. Their distress is further

intensified by concerns for their children's safety and well-being as they adjust to independent living. This "role loss" can make it difficult for mothers, especially those with limited professional or social roles, to redefine their sense of purpose and fulfilment. [21]

Hysterectomy: Panic disorder was significantly higher among women who had undergone hysterectomy (50%, $p=0.000$). Several studies support these observations, emphasizing the mental health challenges that follow hysterectomy. A study by Ferhi et al. [22] found that hysterectomy is associated with a higher prevalence of mood disorders and anxiety.

Limitations: As our study was a cross-sectional study, the temporal relationship between anxiety and the associated factors could not be established. Some information was self-reported and may be affected by recall or social desirability bias.

Conclusion

Generalised anxiety disorder (GAD) was present in 11.11% of perimenopausal women in the study. The prevalence of panic disorder, agoraphobia, and social phobia among the study participants was 4.23%, 2.38%, and 2.38%, respectively. GAD was significantly associated with higher parity, not living with children despite having children, and past history of psychiatric morbidity. Homemakers were significantly more affected by panic disorder and agoraphobia. These findings highlight the importance of identifying women at increased risk of anxiety disorders during the perimenopausal period.

Recommendation: Routine screening for anxiety should be considered during the perimenopausal period, particularly among women with higher parity, those living away from their children, those who are homemakers, and those who have past history of psychiatric morbidity. Early identification and timely referral for appropriate mental health care may help improve their psychological well-being.

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