Indian Journal of Health, Sexuality & Culture
Volume (9), Issue (2), December 2023
ISSN 2581-575X
https://www.iisb.org

Original Article

Impact of menopausal symptoms on sexual functioning among Indian women

Prathibha M.V.[1], Sudeshna Das[2], Payel Dutta Chowdhury[3]
[1]Associate Professor, [2]Assistant Professor, [3]Professor, School of Arts, Humanities & Social Sciences, REVA University, Bangalore, Karnataka, India

Date of Submission:
17 October 2023
Date of Acceptance:
21 November 2023

Abstract

The present study aims to analyze the impact of menopausal symptoms on the sexual functioning of Indian women. A purposive sampling method was adopted, and the sample included 163 women who were aged 42 to 63 years. Through Google Forms the data was collected using International Versions of the Menopause Rating Scale (MRS) by Heinemann, Potthoff, and Schneider and The Female Sexual Function Index (FSFI) developed by Rosen, Brown, Heiman et al. Descriptive statistics such as frequency, percentage, and mean were computed, and Pearson correlation and simple linear regression were used to test hypotheses. The findings of the study suggest that Indian women have a moderate level of menopausal symptoms and have sexual dysfunction. Age was found to have a positive correlation with menopausal symptoms and a negative relationship with the sexual functioning of women. Menopausal symptoms are found to have a significant negative correlation with sexual functioning. Menopausal symptoms significantly predict female sexual functioning among Indian women.

Keywords:
Sexual functioning, Menopausal symptoms, Female reproductive health, Indian women

Corresponding author: Dr. Payel Dutta Chowdhury
Email: payeldutta.c@gmail.com
How to cite the article: Prathibha, M. V., Das, S., Dutta Chowdhury, P. (2023). Impact of menopausal symptoms on sexual functioning among Indian women. Indian Journal of Health, Sexuality and Culture, 9(2), 39–52.
DOI: 10.5281/zenodo.10434247

Introduction

The menopausal transition is a part of the normal ageing process for women. It is the period after one year of the last menstrual cycle and results in permanent cessation of ovarian function. Menopausal transition usually begins between the age of 45 years and 55 years and can last for about seven to fourteen years. This transition period and the experiences are not universal and depend on

various physiological, psychological, and environmental factors. Some women experience a smooth and comfortable transition, but for some, this transition gets difficult due to hot flashes, sleeping disturbances, pain during sexual intercourse, irritable mood, mood swings, depression, and so on. The transitional changes are also due to hormonal fluctuations, which are associated with changes in sexual functioning and psychological changes for most women. Menopausal symptoms vary across the world and by race and ethnicity as well. Most common changes are noticed during middle age and may not be because of menopause but rather due to age factors.[1] In a conservative society like India, where issues and concerns about menopause is hardly discussed openly even in today's time, it is shrouded in mystery and treated as a disease. Menopause is also the time wherein most women are still occupied with familial responsibilities, such as taking care of growing children and providing care for aging in-laws. For a working woman, career responsibilities are an add-on. Amidst sociocultural inhibitions and various duties of life, women generally do not seek medical and psychological help to deal with transitional issues. Gender role responsibilities, along with the issues related to menopausal transition, make women more vulnerable. Problems related to sexual functioning are identified as one of the menopausal symptoms, and aging also tends to impact adversely on female sexual functioning. Empirical studies on sexual functioning are very limited in the Indian context, and those limited studies focus on male sexual functioning and the sexual functioning of women is not well explored. Changes in the sexual functioning of women tend to start from middle age itself, and the sociocultural context influences the women's thought process around sexual behaviour as undignified and disgraceful. Many times, the health of the women related to menopausal changes tends to have an impact on their overall sexual functioning. Hence, the present study focuses on the impact of menopausal symptoms on the sexual functioning of women who are in the age range of perimenopausal stage to postmenopausal stage. The findings of the study will provide insights on the level of menopausal symptoms and sexual functioning among women and will shed light on the impact of menopausal symptoms on sexual functioning. The findings provide the need for intervention to improve the treatment of menopausal symptoms, which can open the alleys for better sexual life of Indian Women.

Review of literature

A review study conducted to estimate the menopause age in India analyzed 202 studies on age at menopause conducted between 2009 and 2020, sourced from both the PubMed database and Google.[2] The selection criteria for inclusion in this study required that the data be obtained from comprehensive surveys. The findings indicated that the mean menopause age of Indian women was found to be 46.6 years.

A study aimed to assess variations in menopausal symptoms among a North Indian subpopulation based on "age, education, and working/non-working status"using the "Menopause Rating Scale (MRS)".[3] The research found that the average menopausal age in the cohort was 48.7 years. Participants were divided into perimenopausal, menopausal /early menopausal, and postmenopausal groups based on age. Perimenopausal women had higher psychological symptoms, while postmenopausal women had more somatic and urogenital symptoms. In conclusion, this study suggests that age, education, and working status can influence variations in menopausal symptoms among women with a similar sociocultural background.

A study was conducted on 500 obstetrics and gynecology (OBG) outpatients of Ahmedabad to explore sexual dysfunction and factors contributing to it.[4] The women were

categorized into five age groups. FSFI scale was used for sexual functioning. The comparison analysis was done between women with and without sexual dysfunction. The findings of the study revealed that 55.6% of the sample exhibited sexual dysfunction. Analysis of data based on the sub scale of sexual functioning revealed that 91.7% of dysfunction was related to attaining orgasm, followed by lubrication issues with 89.2%. Findings also revealed that dysfunction increases with age.

A cross-sectional hospital-based investigation focused on perimenopausal and menopausal women.[5] Data collection involved employing the case report method and the McCoy female sexuality questionnaire. The study also explored potential associations between sociodemographic characteristics and sexual function. A total of 129 women were enrolled in the menopausal group (with a sexual dysfunction score of -3.26), while 112 were included in the premenopausal group (with a sexual dysfunction score of -6.01). The study found that sociodemographic factors did not remarkably influence the scores of sexual functions in either group. Overall, the general realm of sexual function scored notably less in menopausal women compared to perimenopausal women, with a p-value of <0.001. When examining individual areas of sexual function, including interest in sexual activity, sexual satisfaction, vaginal lubrication, and orgasm, perimenopausal participants demonstrated significantly higher mean scores than menopausal women.

The above-presented literature indicates that there are studies to understand the difference in menopausal symptoms, identifying the average menopausal age of Indian women the sexual functioning of women with gynaecological issues. There is a lacuna of studies on healthy women in their middle age and old age, and sexual functioning during the stages of beginning and post-menopause in the Indian context is not well explored. This study, therefore, will delve into menopausal symptoms and their association with sexual functioning among non-clinical Indian women.

Methodology

Objectives

1. To explore the level of symptoms of menopause and sexual functioning among Indian women.
2. To study the correlation between symptoms of menopause, age, and sexual functioning among Indian women.
3. To find the extent to which symptoms of menopause predict sexual functioning among Indian women.

Hypotheses

i) As age increases, menopausal symptoms will increase.

ii) As age increases, sexual functioning will decrease.

iii) The higher the Menopausal symptoms, the lower the sexual functioning

iv) Menopausal symptoms are good predictors of female sexual functioning.

Variables

Independent variable: Menopausal symptoms

Dependent variable: Sexual functioning

Demographic variable: Age

Operational Definitions

Menopausal symptoms: symptoms and complaints of ageing women.

Sexual functioning: An individual's ability to react sexually and experience sexual pleasure.[6]

Sampling method: The purposive sampling method was adopted. The sample included 163 women belonging to the age group of 42-63 years. The study was open for women aged

40 - 65 years, as 40 years marks perimenopause and 65 years mark the post-menopause. The sample that responded to the study belonged to the age range from 42years to 63 years, being upper limit.

Consent and confidentiality: The study ensured adherence to the ethical principles of research by obtaining written consent from every respondent. The consent form communicated about voluntary participation and complete freedom not to respond if the respondent was uncomfortable sharing any details at any point, and complete anonymity was maintained by not asking to provide any identification information and assured confidentiality of the data. The respondents were informed that the data wouldbe presented and analyzed as group data.

Measurement Tools used: The Menopausal Rating Scale (MRS) Scale [7] has good validity with a correlation ranging from 0.7-0.9 for the total, and for the sub-scales, it ranges from 0.5-0.7. Reliability- "Cronbach's Alpha coefficients range between 0.6 and 0.9 across countries for the total score and the scores in the three domains".[7]

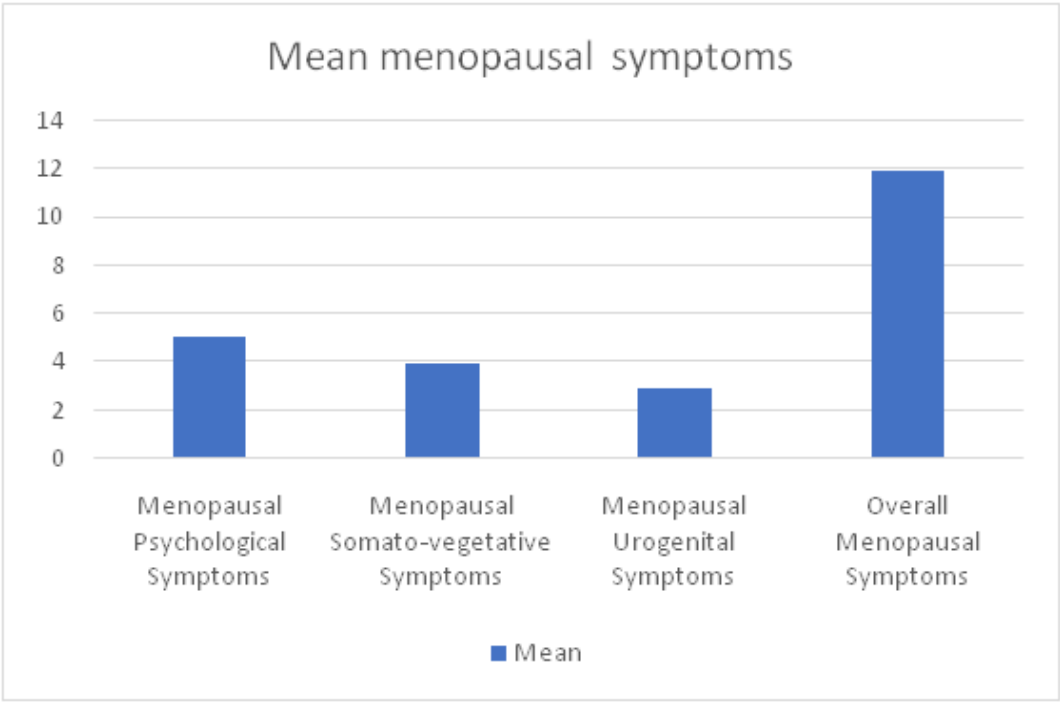
Female Sexual Function Index (FSFI) questionnaire[8]: there are six domains in the FSFI questionnaire, namely desire, subjective arousal, lubrication, orgasm, satisfaction, and pain.Internal consistency (test-retest reliability) is found to be 0.79 to 0.86, and Cronbach's alpha is 0.82. Good construct validity wasestablished between the FSAD and control groups. Additionally, divergent validity was established with the marital satisfaction scale.

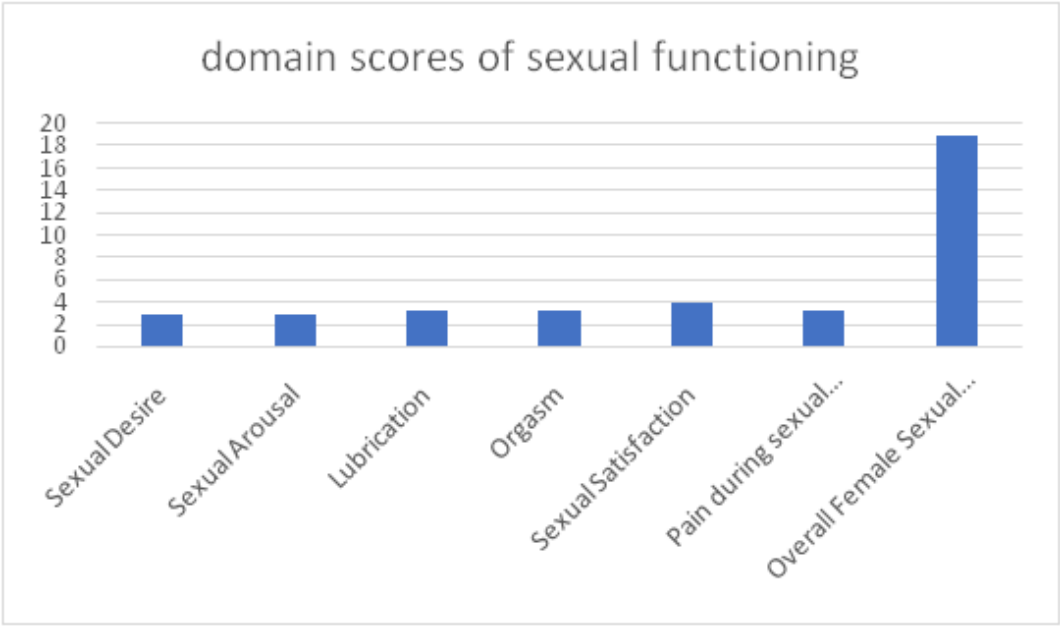
Procedure: A Google form was created to collect the data. The first section of the form included the objectives of the study, confidentiality associated with the study and consent form, followed by the demographic details and scales.

Data analysis: Descriptive statistics were computed to understand the dispersion of data. In order to find the relationship between the different variables, the study used the computation of the Pearson correlation coefficient. Linear regression was computed to find the extent to which menopausal symptoms predict sexual functioning.

Table 1: Descriptive statistics of menopausal symptoms and female sexual functioning among Indian women

	Mean	S. D	Interpretation
Menopausal Psychological Symptoms	5.06	3.25	Moderate
Menopausal Somato-vegetative Symptoms	3.93	2.96	Mild
Menopausal Urogenital Symptoms	2.92	2.38	Moderate
Overall Menopausal Symptoms	11.92	7.22	Moderate
	Mean-4.75(2.85-domain score)	1.85	Sexual dysfunction
Sexual Arousal	9.32(2.79)	6.25	
Lubrication	10.39(3.11)	7.30	
Orgasm	7.79(3.11)	5.57	
Sexual Satisfaction	9.76(3.90)	4.02	
Pain during sexual intercourse	8.11(3.24)	5.97	
Overall Female Sexual Functioning	50.15(19)	28.18	





Ethical clearance: The REVA Institutional Ethical Committee has given the ethical clearance to the study vide application number: REVAA00001 and study code: REVASOAHSS01.

Results and discussion

The study was conducted on 163 women in the age range of 42 to 63 years, and mean age of the sample is 48.90 with the S.D of 4.57.

The above table depicts the mean and SD on the variables.The menopausal symptoms scale has 3 subscales, namely psychological symptoms, somato-vegetative symptoms, and Urogenital symptoms. The interpretation of the mean scores indicates that the study samplewas found to have mild levels of Somato-vegetative symptoms and reports the mild level of muscular and joint discomfort, Sleep issues, hot flushes, sweating and Heart discomfort. The interpretation of menopausal psychological symptoms is found to be moderate, indicating a moderate level of Depressive mood (feeling low, sorrowful, feeling like crying, lack of motivation, mood swings), Physical and mental exhaustion (general decrease in performance, impaired memory, decrease in concentration, forget fulness), Sense of Irritation (nervousness, feeling tensed, aggressiveness) and Anxiousness (restlessness and sense of panic). The interpretation of Urogenital symptoms is found to be moderate, indicating a moderate level of problems in sexual life (sexual desire, sexual activity, and sexual satisfaction have changed), problems in the bladder (various problems in passing urine, urge to urinate frequently, incontinence in the bladder) and vaginal dryness (sensation of vaginal dryness or vaginal burning, associated problems with sexual intercourse). Moderate level of Urogenital and Psychological symptoms contributes to moderate level of Menopausal symptoms.

The sexual functioning of the sample was measured using the Female Sexual Functioning Index scale. The scale has six subscales which measure the specific aspect of sexual functioning such as sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction, and pain during intercourse. The above table depicts that the sample has the domain score for sexual desire as 2.85, which is interpreted as dysfunction in having sexual desire. This indicates that the sample has a low level of interest or feels sexual desire and grades their sexual desire or interest as moderate. The sample has a less frequent wish to engage in a sexual experience and is moderately receptive towards sexual initiation.

The domain score on sexual arousal is found to be 2.79, which is interpreted as dysfunctional, indicating issues in being sexually aroused during sexual activity, confidence in becoming sexually aroused during intercourse and lack of satisfaction with the level of arousal during sexual activity.

The domain score for the sub scale lubrication is found to be 3.11, which is interpreted as dysfunctional lubrication during sexual activity. The sample as a whole has reported that about half the time only they get lubricated during sexual intercourse, it was difficult to become lubricated during the sexual activity, could maintain the lubrication until completion of sexual activity for about half the time of sexual intercourse they had. It was slightly difficult to maintain the lubrication until the completion of sexual intercourse.

In the orgasm sub scale, the domain score obtained is 3.11, which is interpreted as dysfunctional orgasm. The sample as a whole had reported that only sometimes, when they had sexual stimulation, they did reach orgasm, had difficulty reaching climax, and were about equally satisfied and dissatisfied with their ability to reach orgasm during sexual activity.

The domain score in the sexual satisfaction sub scale is 3.90, which is interpreted as dysfunctional sexual satisfaction, indicating that the sample was about equally satisfied and dissatisfied with the extent of mental proximity with the companion at the time of physical intercourse, about equally satisfied and dissatisfied with the partner about physical relationship and moderately satisfied about overall sexual life.

In the pain sub scale, the domain score obtained is 3.24, which is interpreted as dysfunctional in this subscale, indicating that sometimes the sample as a whole experienced

discomfort or pain during vaginal penetration and rates their discomfort or pain during or following vaginal penetration as moderate.

The overall sexual dysfunction index domain score is 19, which is interpreted as sexual dysfunction. As per the norms, the overall domain score below 26.55 indicates female sexual dysfunction.

Table 2: Percentage of sample in different levels of menopausal psychological symptoms

	Frequency	Percent	Cumulative Percent
No, little symptoms	24	14.7	14.7
Mild symptoms	33	20.2	35.0
Moderate symptoms	53	32.5	67.5
Severe symptoms	53	32.5	100.0

The above table 2 depicts the percentage of sample and frequency in different levels of menopausal psychological symptoms. Out of 163 samples, 24 (14.7%) were found to have no or little menopause-related psychological symptoms, 33 (20.2%) samples were found to have mild symptoms, 53 (32.5%) of the samples reported moderate symptoms and 53 (32.5%) reported severe symptoms. The table 2 indicates that 65% of the sample comprises moderate to severe symptoms and very few reported no or little symptoms.

Table 3: Percentage of sample in different levels of menopausal somato-vegetative symptoms

Menopausal Somato-vegetative Symptoms	Frequency	Percent	Cumulative Percent
No, little symptoms	62	38.0	38.0
Mild symptoms	39	23.9	62.0
Moderate symptoms	45	27.6	89.6
Severe symptoms	17	10.4	100.0

The above table 3 depicts the percentage of sample and frequency at different levels of menopausal somato-vegetative symptoms. Out of 163 samples, 62 (38%) were found to have no or little menopause-related psychological symptoms, 39 (23.9%) samples were found to have mild symptoms, 45 (27.6%) of the samples reported moderate symptoms and 17 (10.4%) reported severe symptoms. The table 3 indicates that 40% of the samples comprises moderate to severe level symptoms and 61% has reported no or little to mild symptoms

Table 4: Percentage of sample in different levels of menopausal urogenital symptoms

Menopausal Urogenital Symptoms	Frequency	Percent	Cumulative Percent
No, little symptoms	32	19.6	19.6
Mild symptoms	19	11.7	31.3
Moderate symptoms	51	31.3	62.6
Severe symptoms	61	37.4	100

The above table 4 depicts the percentage of sample and frequency at different levels of menopausal Urogenital symptoms. Out of 163 samples, 32(19.6%) were found to have no or little menopause-related psychological symptoms, 19 (11.7%) sample were found to have mild symptoms, 51 (31.3%) of the sample reported moderate symptoms, and 61 (37.4%) reported severe symptoms. The table 4 indicates that 68% of the sample comprises moderate to severe level symptoms and about 31 percentage has reported no or little symptoms.

Table 5: Percentage of sample in different levels of overall menopausal symptoms

Menopausal overall interpretation	Frequency	Percent	Cumulative Percent
No, little symptoms	27	16.6	16.6
Mild symptoms	25	15.3	31.9
Moderate symptoms	70	42.9	74.8
Severe symptoms	41	25.2	100.0

The above table depicts the percentage of sample and frequency at different levels of menopausal symptoms. Out of 163 samples, 27 (16.6%) were found to have no or little menopausal symptoms, 25 (15.3%) samples were found to have mild symptoms, 70 (42.9%) of the sample reported moderate symptoms, and 41 (25.2%) reported severe symptoms. The table indicates that 68% of the sample comprises moderate to severe level symptoms, and about 31 percentage have reported no or little symptoms, it emphasizes that 68% of the sample is suffering from menopausal symptoms, specifically Urogenital symptoms being more frequent followed by psychological symptoms and comparatively lower percentage of sampling suffering Somato-vegetative symptoms. A higher percentage of the sample suffering from Urogenital symptoms hints at issues in sexual functioning.

Table 6: Correlation between age and menopausal symptoms

	MRS psychological	MRS somatic	MRS urinogenital	MRS total
Pearson Correlation	-.01	.21**	.11	.11
Sig. (2-tailed)	.84	.00	.15	.13

The table presents correlations between age and various menopause-related symptoms. A statistically non-significant negative correlation between symptoms of menopause-related mental issues and age (r = -.01, p = .84) was found, indicating that age and psychological symptoms were not significantly related. A study conducted found that "women in the perimenopausal stage tend to have more psychological symptoms, which supports the findings of the present study that as women grow older, psychological symptoms tend to cease".[2] In contrast, a statistically significant positive correlation between menopause-related somatic symptoms and age (r = .21, p = .00) could be seen, suggesting that as age

increased, somatic symptoms tended to increase as well. Additionally, there was a statistically non-significant positive correlation between menopause-related urinogenital symptoms and age (r = .11, p = .15), implying a weak relationship. Study conducted found that women in the postmenopausal stage have higher levels of somatic and Uro-genital symptoms, and thereby supports the findings of the present study.[2] Age was also positively correlated with the overall menopause-related symptoms total score (r = .11, p = .13), indicating a slight association between age and the total symptom burden.

Table 7: Relationship between age and female sexual functioning

	FSFI desire	FSFI arousal	FSFI lubrication	FSFI orgasm	FSFI satisfaction	FSFI pain	FSFI total
Pearson Correlation	-.22**	-.22**	-.23**	-.19*	-.18*	-.22**	-.23**
Sig. (2-tailed)	.00	.00	.00	.01	.01	.00	.00

The table 7 presents correlations between age and various aspects of female sexual function, as measured by the Female Sexual Function Index (FSFI), in a sample of 163 participants. On FSFI lower, the higher is sexual dysfunction and vice versa. The correlations between subscales of FSFI, overall sexual functioning and age and their significance levels are as follows:

A statistically significant negative correlation between sexual desire and age (r = -.221, p = .005), sexual arousal (r = -.220, p = .005), lubrication (r = -.230, p = .003), orgasm (r = -.197, p = .012), sexual satisfaction (r = -.183, p = .019), sexual pain (r = -.222, p = .004) and overall sexual functioning (r = -.235, p = .002) indicates that as women's age increased their desire for sexual activity, sexual arousal, vaginal lubrication, achieving orgasm, sexual satisfaction, and overall sexual functioning tend to decrease and experiencing pain during intercourse tend to increase.

A study conducted on Asia women shows a low level of desire for sexual activity, which implies that culture has a role to play in the expression of sexual desire among women, supports the findings of the present study.[9] Study conducted on an Indian sample supports that age is an important determinant of the sexual functioning of women.[10]

These results are in line with previous research in the field of sexual health and aging. It's well-documented that sexual function can change with age. Older age is often associated with hormonal changes, medical conditions, and psychological factors, cultural and social factors that can impact sexual desire, arousal, lubrication, orgasm, and overall satisfaction.[9] However, it's important to note that individual experiences may vary, and these correlations represent general trends observed in the sample. Ageing is just one of the several intricate and interconnected factors that influence sexual health. Further research and clinical assessments are needed to understand the specific factors contributing to these correlations in individual cases.

In summary, these findings suggest that older participants tended to report more menopause-related symptoms, as well as lower sexual desire and arousal.

Table 8: Relationship between menopausal symptoms and female sexual functioning

		Sexual Desire	Sexual arousal	lubrication	Orgasm	Sexual satisfaction	Pain during intercourse	Overall sexual functioning
Menopausal psychological symptoms	Pearson Correlation	-.153	-.137	-.179*	-.171*	-.180*	-.172*	-.183*
	Sig. (2-tailed)	.052	.081	.022	.030	.022	.028	.020
Menopausal Somato-vegetative symptoms	Pearson Correlation	-.195*	-.191*	-.200*	-.193*	-.202**	-.246**	-.226**
	Sig. (2-tailed)	.012	.015	.010	.014	.010	.002	.004
Menopausal Urinogenital symptoms	Pearson Correlation	-.239**	-.175*	-.220**	-.183*	-.314**	-.247**	-.245**
	Sig. (2-tailed)	.002	.025	.005	.019	.000	.001	.002
Overall menopausal symptoms	Pearson Correlation	-.228**	-.198*	-.236**	-.216**	-.267**	-.260**	-.256**
	Sig. (2-tailed)	.003	.011	.002	.006	.001	.001	.001

The above table 8 depicts the associations between symptoms of menopause and different aspects of sexual functioning in women. These relationships were assessed using the Pearson correlation coefficients.

Relationship between menopausal psychological symptoms and sexual functioning in women

A modest negative correlation was observed between menopausal psychological symptoms and sexual desire ($r = -0.153$, $p = 0.052$). While this correlation is marginally significant, it suggests that women experiencing more psychological symptoms during menopause may tend to have lower sexual desire. A similar modest negative correlation emerged between menopausal psychological symptoms and sexual arousal ($r = -0.137$, $p = 0.081$). This finding indicates that psychological symptoms may be associated with reduced sexual arousal, although the association is not highly robust.

A statistically significant negative correlation was observed between menopausal psychological symptoms and vaginal lubrication ($r = -0.179$, $p = 0.022$), achieving orgasm ($r = -0.171$, $p = 0.030$), sexual satisfaction ($r = -0.180$, $p = 0.022$), pain during intercourse ($r = -0.172$, $p = 0.028$) and overall sexual functioning ($r = -0.183$, $p = 0.020$). This suggests that psychological symptoms may contribute to difficulties in achieving proper lubrication, challenges in achieving orgasm, reduced sexual satisfaction, increased pain during sexual activity and are linked to overall sexual dysfunction.

Correlations between menopausal somato-vegetative symptoms and sexual functioning in women

A statistically significant negative correlation was observed between Menopausal Somato-vegetative symptoms and sexual desire ($r = -0.195$, $p = 0.012$), sexual arousal ($r = -0.191$, p

= 0.015), vaginal lubrication (r = -0.200, p = 0.010), achieve orgasm (r = -0.193, p = 0.014), sexual satisfaction (r = -0.202, p = 0.010). pain during intercourse (r = -0.246, p = 0.002) and overall sexual functioning (r = -0.226, p = 0.004). This suggests that women experiencing more pronounced somato-vegetative symptoms during menopause tend to report lower sexual desire, reduced sexual arousal, difficulties in achieving adequate lubrication, encounter challenges in achieving orgasm, decline in overall sexual satisfaction, more likely to experience pain and discomfort during sexual intercourse and decrease in sexual functioning. These findings emphasise the potential impact of somato-vegetative symptoms on the sexual well-being of women during the menopausal transition.

Correlations between menopausal urinogenital symptoms and sexual functioning in women

A statistically noteworthy negative correlation between sexual desire and Menopausal Urinogenital symptoms (r = -0.239, p = 0.002), sexual arousal (r = -0.175, p = 0.025), vaginal lubrication (r = -0.220, p = 0.005), orgasm (r = -0.183, p = 0.019), sexual satisfaction (r = -0.314, p < 0.001), pain during intercourse (r = -0.247, p = 0.001) and overall sexual functioning (r = -0.245, p = 0.002) is noticed. This indicates that women experiencing more severe urinogenital symptoms during menopause tend to report lower sexual desire, reduced sexual arousal, experience difficulties in achieving adequate lubrication, encounter challenges in achieving orgasm, decline in overall sexual satisfaction, experience pain and discomfort during sexual intercourse and fall in sexual functioning. These findings underscore the substantial impact of urinogenital symptoms on the sexual well-being of women during the menopausal transition.

Correlations between overall menopausal symptoms and sexual functioning in women

A statistically noteworthy negative correlation between sexual desire and overall symptoms of menopause (r = -0.228, p = 0.003), sexual arousal (r = -0.198, p = 0.011), vaginal lubrication (r = -0.236, p = 0.002), orgasm (r = -0.216, p = 0.006), sexual satisfaction (r = -0.267, p = 0.001), pain during intercourse (r = -0.260, p = 0.001), and overall sexual functioning (r = -0.256, p = 0.001) is noticed. This suggests that women with more severe overall menopausal symptoms are more likely to report lower sexual desire, reduced sexual arousal, experience difficulties in achieving proper lubrication, encounter challenges in achieving orgasm, decline in overall sexual satisfaction, experience pain and discomfort in sexual intercourse and fall in sexual functioning. These results highlight the substantial impact of overall menopausal symptoms on the sexual well-being of women undergoing the menopausal transition. An earlier study conducted on an Indian sample supports the findings of the present study.[5]

Simple linear regression analysis: Predicting sexual functioning from menopausal symptoms

Table 9: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.256[a]	.066	.060	27.32995

a. Predictors: (Constant), Overall menopausal symptoms.

Table 10: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8438.057	1	8438.057	11.297	.001[b]
	Residual	120255.109	161	746.926		
	Total	128693.166	162			

a. Dependent Variable: Overall sexual functioning

b. Predictors: (Constant), Overall menopausal symptoms

Table 11: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	62.062	4.140		14.992	.000
	Overall menopausal symptoms	-.999	.297	-.256	-3.361	.001

a. Dependent Variable: Overall sexual functioning

The above regression analysis examines the relationship between Overall menopausal symptoms (a predictor variable) and overall sexual functioning (the dependent variable).

Model summary

The above table shows that the correlation coefficient (R) is 0.256. This indicates a moderate positive relationship between the predictor variable - overall menopausal symptoms and the dependent variable- overall female sexual functioning. The coefficient of determination (R Square) is approximately 0.066. This represents the proportion of the variance in the sexual functioning that the menopausal symptoms can explain. In this case, about 6.6% of the variance in Overall sexual functioning is explained by Menopausal symptoms. The adjusted R Square takes into account the number of predictors in the model and adjusts the R Square accordingly. Here, it's approximately 0.060, suggesting that Menopausal symptoms contribute to explaining the variance in Female sexual functioning after accounting for the number of predictors.

The ANOVA table tests the overall significance of the regression model.

In this case, the F-statistic is 11.297, and the associated p-value is 0.001 (Sig.). A p-value less than 0.05 (common significance threshold) suggests that the regression model is statistically significant. This means that menopausal symptoms have a significant impact on sexual functioning in this analysis.

Coefficients: The coefficients table provides information about the intercept (constant) and the predictor variable-menopausal symptoms. The intercept (constant) is 62.062. This is the estimated value of female sexual functioning when the Menopausal symptoms score is zero. The coefficient for Menopausal symptoms is -0.999. This represents the change in female sexual functioning for each one-unit change in Menopausal symptoms. It has a negative sign, indicating that as Menopausal symptom increases, Female sexual functioning tends to decrease.

The t-statistic for Menopausal symptoms is -3.361, and the associated p-value is 0.001. This suggests that Menopausal symptoms are statistically significant in predicting Female sexual functioning.

Overall, based on these results, it appears that Menopausal symptoms have a statistically significant impact on Female sexual functioning, as indicated by the significant p-value and the moderate R Square value. It has been found that a surge in symptoms of menopause is related to a decline in female sexual functioning, which is suggested by the negative coefficient. Research conducted found that the menopausal status of women could predict sexual dysfunction in a better way. It was also found that the "menopausal women reported sexual problems such as lack of sexual interest, poor lubrication, failure to experience orgasm, thereby supporting the findings of the present study".[11]

Conclusions

- Indian women were found to have moderate levels of menopausal symptoms and sexual dysfunction.
- Age was found to havea positive correlation with menopausal symptoms.
- As the women grow older, the sexual dysfunction tends to increase.
- The menopausal symptom has a significantly negative correlation with sexual functioning.
- About 6.6% of the variance in overall sexual functioning is explained by Menopausal symptoms.
- Menopausal symptoms are statistically significant in predicting female sexual functioning.

Limitations: Small sample of people above 55 years contributing to the mean age of the sample being 48 years. The menopausal stage of the sample was not taken into consideration.

Implications: Healthcare professionals should consider addressing both psychological and physical aspects of menopause when addressing sexual health concerns of women. There is a need for psychological counselling and intervention to educate women about sexual desires in middle-age and old age.

In gynaecological departments, healthcare professionals need to provide comfortable space to express the sexual functioning of middle and old-age women and create awareness of available treatment.

Suggestion for further study: An in-depth study can be planned to explore the factors that influence female sexual functioning. Studies on the attitude of middle and old-age men towards sexual activity can be conducted in order to understand its impact on women's sexual pleasure.

Acknowledgements : The study was carried out at REVA University, Bangalore, and the authors are grateful for the support received during the research. The authors acknowledge the support of the respondents in providing the necessary inputs required for the study.

Conflict of interest: None

References

1. What Is Menopause? | National Institute on Aging. [cited 2023 Sep 25]. Available from: https://www.nia. nih. gov / health / what-menopause.
2. Prasad, JB, Tyagi, NK, Verma, P. Age at menopause in India: A systematic review. Diabetes Metab Syndr. 2021 Jan-Feb;15(1):373-7.
3. Kakkar V, Kaur D, Chopra K, Kaur A, Kaur IP. Assessment of the variation in menopausal symptoms with age, education and working/non-working status in north-Indian sub population using menopause rating scale (MRS). Maturitas. 2007 Jul 20; 57(3):306-14.
4. Aggarwal RS, Mishra VV, Panchal NA, Patel NH, Deshchougule VV, Jasani AF. Sexual dysfunction in women: an overview of risk factors and prevalence in Indian women. JSAFOG. 2012;4(3):134-6.
5. Meeta M, Majumdar S, Tanvir T, Sharma S,

Shah J, Aggarwal N, Olayi R, Ahuja M, Joshi SA. Effects of menopause on sexual function in Indian women: A McCoy's questionnaire-based assessment. J Midlife Health. 2021;12(2):144-54.

6. Komlenac N, Hochleitner M. Associations between pornography consumption, sexual flexibility, and sexual functioning among Austrian adults. Archives of Sexual Behavior. 2022:1-14.

7. Heinemann LAJ, Potthoff P, Schneider HPG. International versions of the Menopause Rating Scale (MRS) Health Qual Life Outcomes. 2003;1:28.

8. Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D'Agostino R Jr. J Sex Marital Ther. 2000 Apr-Jun;26(2):191-208.

9. Huang AJ, Subak LL, Thom DH, Van Den Eeden SK, Ragins AI, Kuppermann M, Shen H, Brown JS. Sexual function and aging in racially and ethnically diverse women. J Am Geriatr Soc. 2009 Aug;57(8):1362-8.

10. Jain N, Mehra R, Goel P, Chavan B S. Sexual health of postmenopausal women in North India. J Midlife Health. 2019 Apr-Jun;10(2):70-4.

11. Deeks AA, McCabe MP. Sexual function and the menopausal woman: The importance of age and partner's sexual functioning. Journal of Sex Research, 2001;38(3):219-25.