The International Journal of
INDIAN PSYCHOLOGY

Research Paper

Stress a hidden problem in the life of menopausal women

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ABSTRACT

Menopause is a normal stage in the life process of a woman but many women find the time around menopause stressful. This study *aims* to evaluate the impact of stress on the health status of menopausal women. *Methods:* A cross-sectional study was conducted in selected areas in Jharsuguda district of Western Odisha. Purposive sampling technique was adopted to select the study participants. The total 330 samples were collected from women who were in pre, peri and post-menopausal stage. Assessment of stress was made by Sheldon Cohen's, the Perceived Stress Scale for assessing the stress level of menopausal women. *Results:* Results of the study revealed that the level of stress is dominant on overall health of a woman during onset of menopause. It was observed that most of the respondents had moderate level of stress i.e. 43.93% followed by low level and high-level stress i.e. 29.09% and 26.96% respectively. PSS scores were significantly related to the prevalence of number of menopausal symptoms. There was a moderate positive correlation found between stress and experience of menopausal symptoms among the women i.e. between physical & physiological ($r = 0.407$, $P < 0.00001$) and physical and psychological ($r = 0.432$, $P < 0.00001$). It was interestingly noted that, when the stress was increased, the women experienced more health problems. *Conclusion:* It can be concluded that the health status of menopausal women is related to onset of level of stress during menopause.

Keywords: Stress, Symptoms, Health Status, Menopausal Women

Menopause and menarche are the turning points in women's life cycle. It is a phage in life of a woman which ceases her reproductive capacity. Menopause occurs in a woman at the age of late 40s to early 50s. Menopause defined as a woman having not any vaginal bleeding over 12 months. It may also be defined as a decrease in hormone production by the ovaries. The symptoms of menopause typically occur earlier, at an average of 45 years of age. During this time, women often experience vasomotor symptoms like hot flashes and night sweats as the most common symptoms. Other symptoms like dryness of vagina, sleeping problems and mood changes. The severity of symptoms differ among women. Many women find the time around menopause stressful. Approaching middle age often brings increased stress, anxiety, and fear. This may be partially due to hormonal changes such as decreasing levels of estrogen and progesterone. Some emotional changes also be found such as worries about getting older, losing family members, or

children leaving home. There may also be include family and personal issues such as the demands of growing children & adolescent, elderly parents, midlife spouses, and career changes often burden on women during these years. For some women, menopause may be a time of isolation or frustration. Family and friends may not always understand what a woman is going through, or provide the support they need. Trouble in coping up with the situation leads to development of anxiety or depression which is not good for anyone's health which leads to increased blood pressure and heart attack, headaches, digestive problems, depression/anxiety etc. Stress affects not only our health but also our relationships, work performance, general sense of well-being, and quality of life. Psychological stress can also disrupt normal menstrual cycles and experienced early menopause which hinder their health status to a large extent. Stress is now considered a significant contributor to poor health and important factor in the development of heart diseases, cancer, and many chronic and acute diseases. It is a broad concept act as a hurdle in persons' physical health, psychological state, social relationships, personal issues, relationships to their immediate environment and refers to a subjective evaluation, which is bind with a cultural, social, and environmental context. **[Abedzadeh Kalarhoudi M, Taebi M, Sadat Z, Saberi F, 2011]** In actual sense menopause does not really need medical treatment as it is a natural biological process in women's life cycle. The menopause treatments help in managing symptoms and preventing chronic problems that occur during this period. Some women experience menopause negatively but the degree of experiencing symptoms vary from mild to very severe. Proper management such as exercise, proper diet and reduction of stress are effective methods to make menopause as productive. Strategies for managing stress can help women to cope not only with menopause, but also with life and also aging in general **[NAMS].**

LITERATURE REVIEW

Low level of emotional intelligence was related to worse menopause symptoms and a negative attitude to menopause. **(Bauld & Brown, 2009).** PSS scores was negatively correlated with age and positively with MRS psychological and urogenital scores. **(Cauders et al, 2012).** The intensity of symptoms was related to income, perceived stress and attitude towards menopause and aging. Positive attitude towards aging was more in European and African Americans compared to Maxican/Central Americans. **(Nosek,2010).** The scores of PSS was positively correlated with the physical and psychological symptoms and health behaviors of the women. The principal component analysis explained 52% variance consist of two factors with internal consistency 0.81.**(Yu et al,2010).5**- The most frequent symptoms reported by the participants were 77% complained muscles and joint pain, 74.6% had depressive mood, sexual problems (69.6%), hot flushes (65.5%) and sleeping problems (45.6%). It was also observed that menopausal symptoms were significantly higher in peri and post-menopausal women than premenopausal women. The MRS scores were significantly increased with age and the menopausal stage. The risk factors which predicting the severity of menopausal symptoms were educational status and sexual inactivity. **(Chedraui. P, 2007)**

Objectives
- To study the stress level of the participants.
- To evaluate the influence of stress on health status of menopausal women.

METHODOLOGY

Study area and population
A cross-sectional study was conducted with the aims to evaluate the level of stress and its influence on health status of menopausal women in selected areas in Jharsuguda district of

Western Odisha. The study samples were selected from urban, rural and tribal population resides in Jharsuguda and Kolabira blocks in the Jharsuguda district of Odisha, India. The sample size was calculated on the basis of the results of pilot study. The estimated sample size was 330 selected by purposive sampling method, a descriptive cum exploratory research design was followed to conduct the study.

The **inclusion criteria** for sample selection include (a) women with the age group of 35-55 years, and (b) women who are willing to give their consent for collection of information.

The **exclusion criteria** include (a) women with age of below 35 years and above 55 years of age. (b) who are not present at the time of data collection. Women were requested to participate voluntarily in the study. The objectives of the study were explained to the participants in the consent form.

Instruments

The questionnaire for the present research study comprises three sections. Section I pertained information regarding socio-economic condition such as age, educational status, occupation, marital status, type of family, socio- economic status, dietary habit, age of menarche, parity, age of marriage, age at menopause. Section II assessed the level of stress of menopausal women by Sheldon Cohen's Perceived Stress Scale (PSS) [Cohen and Williamson 1988]. PSS is the most commonly used to measure the perception of stress. The scale consists of 10 items pertaining to stress of menopausal women with a severity ranging from 0 to 4 (0 - Never, 1 - Almost never, 2 - Sometimes, 3 - Fairly often, 4 - Very often). The participants were asked to indicate the level of severity of stress in the scale provided. The reliability of the tool was obtained by test-retest method and a reliability coefficient of 0.80 was found to be statistically significant. The total score of stress level ranges from 0 to 40 and categories as 0 to 13 score as low level, 14 to 26 as moderate level and 27 to 40 score as high-level stress. Section III was related to assessment of different menopausal symptoms available in other studies and grouped it as physical and physiological problems, vasomotor problems, collagen problems, bone problems and psychological problems by the researcher herself.

Statistical analysis

Factor analysis of perceived stress scale (PSS) was performed using a principal component analysis method with varimax rotation. Correlation analyses, the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were used for its reliability and validity. One-way ANOVA and t-test were carried out to know the mean differences in PSS score and socio-demographic variables. The data were interpreted by MS Excel 19 and Statistical Package for the social sciences (SPSS) version 16, IBM. The results are presented as percentages, mean, and standard deviation. Pearson correlation coefficient was used for assessing the relationship between stress and menopausal symptoms. The statistical significance level was set as $p<0.05$

RESULTS

1. Characteristics of study population

The mean age of the participants was 46.22±2.71. At the same time illiteracy rate was 28.48%. Maximum numbers of women 49.69% were housewives. 23.93% of respondents had monthly family income above 30,000 where as 34.24% had less than 10,000 income per month and 48.18% were belong to middle socio-economic group. Regarding the marital

status of women 93.33% were married and 6.66% women were single, widow, divorced or separate. The mean age of attaining menopause was 46.22±4.36.

2. Level of Stress
Table-I. Perceived stress scores of the respondents

ITEMS	SCORE N (%)				
	Never	Almost Never	Sometimes	Fairly Often	Very Often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	25(7.5)	46(13.9)	150(45.4)	71(21.5)	38(11.5)
2. In the last month, how often have you felt that you were unable to control the important things in your life?	47(14.2)	61(18.4)	140(42.4)	56(16.9)	26(7.8)
3. In the last month, how often have you felt nervous and "stressed"?	35(10.6)	45(13.6)	155(46.9)	65(19.6)	30(9.0)
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	43(13.0)	99(30)	115(34.8)	37(11.2)	36(10.9)
5. In the last month, how often have you felt that things were going your way?	29(8.7)	97(29.3)	128(38.7)	46(13.9)	30(9.0)
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	40(12.1)	67(20.3)	138(41.8)	62(18.7)	23(6.9)
7. In the last month, how often have you been able to control irritations in your life?	21(6.3)	96(29.0)	136(41.2)	47(14.2)	30(9.0)
8. In the last month, how often have you felt that you were on top of things?	27(8.1)	62(18.7)	142(43.0)	64(19.3)	35(10.6)
9. In the last month, how often have you been angered because of things that were outside of your control?	41(12.4)	85(25.7)	116(35.1)	52(15.7)	36(10.9)
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	50(15.1)	66(20)	112(33.9)	53(16.0)	49(14.8)

 # Values in parentheses indicate percentages
The table shows that 7.5% respondents never been upset, whereas 45.4% had been upset sometimes and 11.5% had been upset usually.42.5% women reported that they had unable to control things sometimes and 7.8% reported very often. 14.2% women were able to control things in their life. Most of the subjects i.e. 46.9% had felt stressed and nervous sometimes whereas 10.6% women never felt stressed. 43% women never or almost never able to handled their personal problems, 34.8% able to handled sometimes, 11.2% were fairly able to handled and 10.9% very often able to control their personal problems. Only 9% women were felt that things were going on their ways but 8.7% respondents never felt it.41.8% women could not cope with the things they do sometimes, 18.7% fairly and 6.9% very often could not cope with things whereas 32.4% women could cope with the things they had do. 6.3% participants never able to control irritation in their life. Sometimes 41.2% women able to control and 9% women very often able to control irritation.10.6% respondents felt that they were on the top of the things whereas 87.1% never felt it.12.4% participants reported that they had never been angered whereas 15.7% and 10.9% been angered fairly and very often respectively. 33.9% women felt that sometimes they could not overcome difficulties,

16% and 14.8% felt it fairly and very often respectively.15.1% and 20% respondents were never or almost never felt difficulties to overcome problems.

Table-II. Level of Stress of the respondents during onset of menopause

PSS scoring	No.	%
Low stress (0-13)	96	29.09
Moderate stress (14-26)	145	43.93
High perceived stress (27-40)	89	26.96

Results of table revealed that out of 330 respondents 29.09% were reported low level of stress, and 26.96% of women were in high level of stress. However moderate level of stress was found in majority of respondents i.e. 43.93%.

Stress and sociodemographic characteristics
Table III. Mean PSS scores and standard deviations for sociodemographic characteristics

	N	PSS score, mean ± SD	P-value
Overall	330	13.3 ± 6.6	
Age, years			
35-40	119	12.45 ± 6.3	0.39
40-45	82	11.44 ± 6.6	
45-50	75	13.03 ± 7.7	
50-55	54	11.6±6.2	
menopausal status			
Pre	119	10.91± 6.7	0
Peri	95	12.15 ± 7.4	
Post	116	13.2 ± 6.6	
Household income			
<10,000	113	10.56 ± 7.6	0
10,000-19,999	82	11.96 ± 6.8	
20,000-29,999	56	11.33 ± 6.5	
30,000 & above	79	12.09 ± 7.9	
Education			
Illiterate	94	8.55 ± 6.2	2.45
Primary	31	11.15 ± 7.5	
Middle	31	11.74 ± 6.8	
High school	64	12.66 ± 6.9	
Intermediate	65	13.78±6.6	
graduation & above	45	14.7±7.2	
Work status			
Housewife	164	11.54 ± 6.9	0.01
Employed	166	13.28 ± 7.2	
Marital status			
Single, widow, divorced or separated	22	12.95 ± 7.1	0.13

It is observed from table-3 that the mean scores of the PSS was 13.3, with standard deviation of 6.6 (range 0-40). The level of stress was higher in 45-50 years of age 13.03 with standard deviation of 7.7 and found to decrease with increase age but statistically it was not significant.

With regard to menopausal status it was observed that stress level was more for post-menopausal women i.e. 13.2 ± 6.6 in comparison to others and the difference in prevalence

of stress score was found to be highly significant (P<0.00001) according to menopausal status.

The result also revealed that when PSS scores were classified by level of household income, the scores declined as household income decreased. Women with household incomes of < 10,000 had low stress level and income above 30,000 had reported high stress level. However, the comparisons between income group means in relation to level of stress was found to be statistically significant (P<0.05). This may be due to with increase in income workload and responsibility increase in the workplace which ultimately affects the level of stress in menopausal women.

Women with educational status beyond tertiary education reported more perceived stress than did all those with less than a tertiary education, but the difference was not statistically significant (P = 2.45).

Women who were housewives had level of stress significantly lower than did those in paid employment (P < 0.05). No significant differences between the level of stress and marital status and residential status (p=0.13, p=3.42) of the respondents found in this study respectively.

Stress was also related to socio-economic status. With higher the economic status more the level of stress observed in this study. The mean score of stress was 14.0 and 14.7 found in high and middle socio-economic group respectively and 12.0 found in low socio-economic group and the result was statistically significant (p=0.01) with regard to socioeconomic class and level of stress.

Stress and Menopausal Symptoms
Table IV. Correlations between PSS scores and menopausal symptoms

menopausal symptoms	Pearson correlation coefficient	p value
physical & physiological	0.407	000
Vasomotor	0.322	000
Urogenital	0.223	000
Collagen changes	0.02	0.84
Bone Problems	-0.03	0.65
Psychological problems	0.432	000

The table shows that PSS scores were significantly related to the number of menopausal symptoms. PSS scores were moderately correlated with physical & physiological symptoms (r = 0.407, P < 0.00001), psychological symptoms (r = 0.432, P < 0.00001) whereas a lesser extent to vasomotor symptoms (r = 0.322, p <0.00001) and urogenital problems (r = 0.22, p= 0.002). There was a moderate positive correlation found between level of stress and experience of menopausal symptoms among the women. Thus, it can be concluded that with increased stress, poor quality of life was experienced by the menopausal women in this study.

Factor structure for PSS
Table V. Rotated Factor Loading PSS Items

Item	Factor 1	Factor 2
1	0.758	-0.242
2	0.524	-0.319
3	0.812	0.073
6	0.613	-0.205

Item	Factor 1	Factor 2
9	0.508	0.265
10	0.605	0.499
4	-0.009	0.772
5	1.281	0.815
7	0.027	0.604
8	-0.065	0.622
Eigenvalue	2.974	1.986
Variance accounted for %	29.74	19.86

Total % variance 49.6

The principal component analysis revealed 2 factors that gives values accounted for 49.6% of the variance in the items (Table 5). The first factor 'negative perception', accounting for 29.74% of the variance, was made up of 6 negatively worded items representing stress (items-1, 2,3,6,9 &10). Factor loadings ranged from 0.508 to 0.812, and none of these items loaded onto the second factor. The second factor 'positive perception' accounted for 19.86% of variance and was composed of 4 positively worded items representing control (items-4,5,7&8) with factor loading ranging from 0.604 to 0.815. The Kaiser- Meyer-Olkin measure of sampling adequacy tests (KMO) and Bartlett's Test of Sphericity were 0.57 and Bartlett's Test of Sphericity was significant ($P < 0.05$). It was noted from the table that in the present study the occurrence of stress was found higher i.e. 29.74% whereas only 19.86% of women had able to manage stress in proper ways.

DISCUSSION

Menopause is a bridge by which a women enter to a new phase of life in which she had lost her reproductive capacity. The onset of menopause is a time of loss of estrogen exposure, which may have both acute and chronic effect on health status of a woman. The majority of women report hot flushes and sweating developing with increasing severity in the menopausal transition and continuing in the years following last menstrual period. Available literature reported that as many as 75% of women experienced hot flashes after menopause. Most of the women left it untreated and gradually decline after some year but some women continue to experiencing symptoms for more than 30 years. [Sengupta BS,Chattopadhyay SK, Varma TR,2007].

The current study showed that 43.93% women had moderate level of stress whereas 26.96% women experienced high level of stress. Level of stress able to distinguish the studied samples on the basis of their age, occupation, and marital status hence proved its construct validity.

In the current study, younger women had experienced higher PSS scores. The results are congruent with those of [Cohen in 1988] who reported an inverse association of age with PSS scores. Compared with housewives, employed women had higher level of stress was observed in his study. [Ho et al.2003] also reported that employment status in mid-life was a source of stress resulting from perceived job uncertainty, interpersonal conflicts and financial difficulties. Thus, our data are consistent with the result that employed women experiencing greater stress because of the demands of their life and working environments. Women who were single had generally higher stress level than those who were married. [Cohen S, Kamarck T, Mermelstien R., 1983] had also noted a significant difference

between mean PSS scores of singled and married women. The PSS was also found to correlate significantly with other psychological measures (CES-D and STAI) commonly used to measure similar psychological constructs, and health behaviour thus the construct validity of the PSS was confirmed [Yu, R,2010].

There was moderate positive correlation found between stress and menopausal symptoms experienced by the women. It shows that, when the stress was increased, there was a detorioation of health status experienced by menopausal women. The study findings were consistent with the study conducted by Chen, et al. conducted a study to assess the impact of menopause, age, and other factors on quality of life. [Chen et al, 2008].

More stress negatively correlated with age of the women and positively with psychological and urogenital symptoms and the symptoms were more intense with stress level [Cuadros et al, 2012 and Bauld, R., & Brown, 2009]. The intensity of symptoms were related to the attitude towards aging, menopause, perceived stress and income. [Nosek et al, 2010].

A worse quality of life in vasomotor, psychosocial, and physical domains were reported by the women who had experienced menopause in early years. The gradually declining sexual life was related to the advancement of menopause [Chen et al, 2008]. Adequate correlations found between the number of menopausal symptoms including psychological, musculoskeletal and gastrointestinal, non-specific somatic complaints, respiratory, and vasomotor symptoms with the PSS scores. (M. S, Hunter, 1993). Our results are consistent with the studies presented above and a possible explanation for this association is that the effect of stress was moderately correlated with onset of menopause among women and affect their overall health status.

CONCLUSION

The present research aimed to investigate the influence of stress on the life of women who are going through menopause and those who have gone through this phase. The results suggested that the stress level was higher in younger age group with higher educational level and higher income group. Working women had high stress as compared to non-working women in the menopausal phase. Working women have to perform their dual role both at work place and home which resulted more stress. The post menopause stage indicated more stressful period. In this study mid-aged perceived stress was positively correlates with different physical, vasomotor, urogenital and psychological symptoms associated with menopause. The results of this study suggest that the PSS is an instrument with adequate psychometric properties (consistent internal structure, high reliability, and high construct validity). Therefore, the PSS can be a very useful tool to detect psychological stress and its influence among early and post- menopausal population. Stress is an important factor in every phase of life which causes both psychological as well as physical problems in life span. Women in midlife passes through different stressful condition which adversely affect their quality of life. The level of stress may also be used predict adverse health outcomes like different degenerative diseases in women in midlife.

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