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Original Article

Psychiatry/Mental Health Section

Depressive Symptoms and Bio-psychosocial Problems among Postmenopausal Women of Udupi District, Karnataka, India

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ABSTRACT

Introduction: Menopause is the transition period in women's life. Though it is a normal phenomenon, it has challenging situations. Many women shift to menopause without facing psychiatric problems; however, there is evidence that 20% of them are experiencing depressive symptoms during this crucial period.

Aim: To identify the depressive symptoms and bio-psychosocial problems of postmenopausal women.

Materials and Methods: A descriptive survey was conducted in three Gram Panchayaths of Udupi district, Karnataka, India. Convenient sampling technique was used to select 290 postmenopausal women between 1-5-years of menopause. Inventory of Depressive Symptomatology-Self Report (IDS-SR) scale was used to assess the depressive symptoms and rating scale on bio-psychosocial problems of postmenopausal women was used to assess the bio-psychosocial problems. Descriptive (frequency and percentage) and inferential statistics (Fisher's-exact test and one way ANOVA test) were used to analyse the data.

Results: The results showed that 20.7% of women had a mild level of depressive symptoms. Commonly reported bio-psychosocial problem were leg cramps (89.7%), joint and muscle pain (87.6%), backache (87.2%), hot flushes (85.2%), fatigue (79.3%), numbness in extremities (75.9%), night sweating (67.2%), sleep disturbance (66.5%), sexual problems (49.7%), forgetting (31%) and irritation (39.6%). It was also found that there was a significant association between depressive symptoms and age ($p \leq 0.001$), number of living children ($p=0.003$), duration after attaining menopause ($p=0.012$) and age at menopause ($p \leq 0.001$).

Conclusion: Menopause is one of the most significant events in women's life. Hence, nurses working in public sector need to identify problems related to postmenopausal women and provide adequate health services.

Keywords: Gram panchayaths, Menopause, Reproductive life

INTRODUCTION

Change is the very essence of life. The most important physiological changes which occur in the women's life are the commencement of menstruation at the puberty with the beginning of the reproductive life and other is cessation of menstruation where her reproductive life comes to an end [1]. There is an increased risk for depression during the pre- and post-menopausal period due to change in hormonal levels. During menopause, the body experiences great changes. Oestrogen acts as a hormonal antidepressant and with menopause, the oestrogen level in a woman's body significantly declines. Menopause causes mood swings which are proved by various scientific studies. It also suggests that women are at risk for major depression during and after menopause [2].

The population of India has crossed one billion, in which 71 million are above 60 years of age and about 43 million are menopausal women. According to the third consensus meeting of Indian Menopause Society, the expected population in India will be 1.4 billion, of which 173 million will be people above 60 years, with 103 million menopausal women by 2026 [3].

There is no existing health-related program that emphasises the explicit health needs of postmenopausal women in India. The missions like Reproductive Child Health-II and National Rural Health Mission represents women who were in the reproductive age group, ignoring those have passed their reproductive stage. A majority of Indian population be located in rural areas, there is an essential need to focus on health facilities to postmenopausal women living in rural areas [4]. Finding the factors associated with the early and late menopause is essential because age and other factors at menopause have been related to the risk of onset of several chronic diseases [5].

There are several studies across the country that has proved the presence of depressive symptoms among menopausal women [1,2,4-6]. However, a little is known about the incidences of depressive symptoms in the rural areas of Udupi District of Karnataka, India. So the investigator intended to assess the depressive symptoms and bio-psychosocial problems in postmenopausal women. Research hypothesis was formulated to test the relationship between depressive symptoms and bio-psychosocial problems.

MATERIALS AND METHODS

The present study used a quantitative approach and descriptive survey design. The study was conducted in different villages of Udupi district, Karnataka, India, from December 2017 to January 2018. Three Gram Panchayaths (Udyavara, Athradi and Bommarabettu) were selected through simple random sampling and convenient sampling technique was used to select women between 1-5 years of menopause. House to house survey was conducted to identify women and in some areas, Help was obtained from ASHA workers of the respective area. Postmenopausal women with psychiatric disorder, any other major medical problem and who were on hormonal therapy were excluded from the study.

The sample size was estimated based on the following formula:

$$n = \frac{Z1-\alpha^2/2pq}{(\epsilon p)2} \times 2$$

that is, p=0.4 anticipated prevalence, q=0.6 1-p, $Z_{1-\alpha/2}$=1.96 at 5% confidence level, ϵ=20% relative precision, 2=design effect. Total sample size was 290.

Three tools were used to collect the data. A demographic proforma was used to collect the background information of the postmenopausal women which consisted of 14 items. The IDS-SR [7] had 30 items and was used for assessing the depressive symptom. Since IDS-

SR was a standardised scale, only Kannada version of the tool was validated (Content validity index=0.91) and reliability (a=0.75) was obtained (The content validity was established by five experts from the field of psychiatry). Each item to be marked based on last week's experience. The total score ranged from 0 to 84. Based on total score, depressive symptoms were divided into "Mild" (14-25), "Moderate" (26-38), "Severe" (39-48) and "Very severe" (49-84). Categories and scoring system was given by the authors.

The bio-psychosocial problems of women were assessed by a four point rating scale on bio-psychosocial problems which were prepared by the investigator and validated (Content validity index=0.98) and reliability (α=0.78) was obtained. This tool had three subareas like biological problems, psychological problems and social problems. Tool consisted of 31-items which were translated into Kannada by the language experts. Ethical clearance (IEC: 729/2017) was obtained from institutional ethics committee of Kasturba Hospital, Manipal. CTRI registration (CTRI/2018/01/011200) was also done prior to the study. Subject information sheet was given to all the study participants. Informed consent was obtained from all the study participants after assuring the confidentiality of the information. Women responded well to the researchers' approach and none of the women refused to provide the information.

Administrative permission from president of Grama panchayaths and ethical permission from Kasturba Hospital, Manipal was taken before collecting the data. House to house survey was conducted to select the 290 study participants. The data was collected by self-administering the questionnaires to the participants. Interpretation of IDS-SR scale was done immediately after collecting the information and referral services were planned for those with severe depressive symptoms.

STATISTICAL ANALYSIS

Descriptive and inferential statistics were used for analysing the data. Frequency and percentage distribution was used to describe the sample characteristics, depressive symptoms and bio-psychosocial problems. Fisher's-exact test was used to find the association between depressive symptoms and bio-psychosocial problems, depressive symptoms and selected demographic variables. One-way ANOVA test was used to find the association between bio-psychosocial problems and selected demographic variables. The data were tested at 0.05 level of significance.

RESULTS

A total of 290 postmenopausal women, who met the inclusion criteria were included in the study. Mean age at menopause in present study was observed as 51.68±4.254 years.

A 43.4% of study participants belonged to the age group of 51-55 year and most (84%) of them was married. Majority (77.9%) of the women were housewives. Literacy status showed that most (40.3%) had a middle school education. Maximum proportion of postmenopausal women (85.9%) had natural menopause and half of the women (50.3%) attained menopause between the ages of 46-50 years [Table/Fig-1]. More than 50% of women (225) had no depressive symptoms as per IDS-SR score for depressive symptoms. Mild depressive symptoms were present in 20.7% and moderate depressive symptoms were present in 1.7% of the women. None of the postmenopausal women was found to be suffering from severe or very severe depressive symptoms [Table/Fig-2].

The most common complaints of postmenopausal women were leg cramps (89.7%), joint and muscle pain (87.6%), backache (87.2%), hot flushes (85.2%), fatigue (79.3%), numbness in extremities (75.9%), night sweating (67.2%), sleep disturbance 193 (66.5%), sexual problems (49.7%), forgetting (31%), crying spells (29.7%), easily getting irritated with family member (39.6%), feels decreased interaction with others (24.1%), and feels decreased family support (20.4%). Biological problems were expressed more than the psychological and social problems [Table/Fig-3].

Demographical characteristics	Frequency (f)	Percentage (%)
Age (in years)		
≤50	121	41.7
51-55	126	43.4
>55	42	14.5
Marital status		
Single	3	1
Married	244	84.1
Widow	43	14.8
Education		
Primary school	66	22.8
Middle school	117	40.3
High school	67	23.1
Pre University College	25	8.6
Undergraduates	10	3.4
Postgraduates	2	.7
Others (diploma in nursing, diploma in telecommunication, TCH)	3	1
Occupation		
Housewife	226	77.9
Employed	65	22.4
Type of menopause		
Natural	249	85.9
Surgical	41	14.1
Menarche (in years)		
11-15	217	74.8
16-20	73	25.2
Age at menopause (in years)		
≤45	69	23.8
46-50	146	50.3
>50	75	25.9

[Table/Fig-1]: Frequency and percentage distribution of demographic characteristics. n=290

Depressive symptoms	Frequency (f)	Percentage (%)
No depressive symptoms	225	77.6
Mild depressive symptoms	60	20.7
Moderate depressive symptoms	5	1.7

[Table/Fig-2]: IDS-SR scoring for assessment of depressive symptoms.

Fisher's-exact test was used to find the association between depressive symptoms and bio-psychosocial problems. Bio-psychosocial problems like hot flushes, night sweats, fatigue, sleep disturbance, leg cramps, joint and muscle pain, low back pain, crying spells, decreased concentration, forgetting, feels nervous, reduced interest in sexual activity, easily getting irritated with family members, feeling decreased family support, and decreased interaction with others were significantly associated with depressive symptoms [Table/Fig-4].

Association between Depressive Symptoms and Demographic Characteristics

Fisher's-exact test was used to find the association between depressive symptoms and demographic variables. Demographic variables such as age (χ^2=24.204, p<0.001), number of living children (χ^2=17.704, p=0.003), duration after attaining menopause (χ^2=16.811, p=0.012), and age at menopause (χ^2=19.914, p=<0.001) were significantly associated with depressive symptoms.

Association between Biological Problems and Demographic Characteristics

The result of One-way ANOVA test to find the association between biological problems and demographic variables showed that

Bio-psychosocial problems	No. of women (%)	Always	Often	Rarely
Biological				
Leg cramps	260 (89.7%)	40 (13.8%)	85 (29.3%)	135 (46.6%)
Joint and muscle pain	254 (87.6%)	46 (15.9%)	96 (33.1%)	112 (38.6%)
Back ache	253 (87.2%)	39 (13.4%)	89 (30.7%)	125 (43.1%)
Hot flushes	247 (85.2%)	13 (4.5%)	60 (20.7%)	174 (60%)
Fatigue	230 (79.3%)	8 (2.8%)	50 (17.2%)	172 (59.3%)
Numbness in extremities	220 (75.9%)	4 (1.4%)	25 (8.6%)	191 (65.9%)
Night sweating	247 (67.2%)	12 (4.1%)	61 (21%)	174 (60%)
Sleep disturbance	193 (66.5%)	14 (4.8%)	59 (20.3%)	120 (41.4%)
Psychological				
Sexual problems	144 (49.7%)	54 (18.6%)	26 (9%)	64 (22.1%)
Forgetting	90 (31%)	0	14 (4.8%)	76 (26.2%)
Decreased concentration	87 (30%)	2 (0.7%)	9 (3.1%)	76 (26.2%)
Crying spells	86 (29.7%)	0	4 (1.4%)	82 (28.3%)
Feeling nervous	31 (10.7%)	7 (2.4%)	7 (2.4%)	17 (5.9%)
Social				
Easily getting irritate with family member	112 (39.6%)	5 (1.7%)	8 (2.8%)	99 (34.1%)
Feels Decreased interaction with others	70 (24.1%)	1 (0.3%)	4 (1.4%)	65 (22.4%)
Feels decreased family support	59 (20.4%)	0	4 (1.4%)	55 (19%)

[Table/Fig-3]: Frequency and percentage distribution of bio-psychosocial problems.

demographical variables such as age (p<0.001), marital status (p=0.001), education (p<0.001), occupation (p=0.045), duration after attaining the menopause (p<0.001) and age at menopause (p<0.001) were associated with biological problems.

Association between Psychological Problems and Demographic Characteristics

The result of One-way ANOVA test to find the association between psychological problems and demographic variables showed that age (p<0.001), marital status (p<0.001), education (p<0.001), occupation (p=0.027), year of first menstruation (p=0.034), duration after attaining the menopause (p<0.001) and age at menopause (p<0.001) were significantly associated with psychological problems.

Association between Social Problems and Demographic Characteristics

The result of One-way ANOVA test to find the association between social problems and demographic variables showed that education (p=0.041) and number of living children (p=0.034) were significantly associated with social problems.

DISCUSSION

Mean age at menopause in present study was observed as 51.68±4.254 years. The similar findings were also seen in other studies in Indian women as mentioned in [Table/Fig-5] [1,4,8-14].

The present study found only 60(20.7%) had mild depressive symptoms. This may be due to good family support. The similar findings were also seen in other studies in Indian women as mentioned in [Table/Fig-6]. The prevalence rate of depressive symptoms as observed in various study ranged from 12% to 54% [2,6,15-19].

The common bio-psychosocial problems reported by postmenopausal women were comparable with the other studies reported across India as mentioned in [Table/Fig-7] [8,11-15,20-22].

Significant association was found between age, number of children, duration after attaining menopause, age at menopause with depressive symptoms. A study conducted in China depicted that age, family income, and menopause status were also found to be significantly associated with depression but education level and the state of being married were not [19]. A study conducted in Bangladesh showed the inverse relationship between age and relationship with spouse to the level of depression [18].

Significant association was found between hot flushes, night sweats, fatigue, sleep disturbance, leg cramps, joints and muscle pain, low back pain, crying spells, decreased concentration, forgetting, feels nervous, reduced interest in sexual activity, easily getting irritated with family members, feels decreased family support, and decreased interaction with others with depressive symptoms. A study conducted in Bangladesh (2017) showed that there was a significant association between difficulty in concentration and fatigue with depression. Significant correlation was found between menopausal symptoms (concentration problem, osteoporosis, heart beating, fatigue, headaches and tingling sensation) and depression [18]. A study conducted in Korea revealed that there was a significant positive correlation between menopausal symptoms and depression [23].

Bio-psychosocial problems	IDS category												χ^2 / fisher's exact test value	p-value
	0-13 (None)				14-45 (Mild)				26-38 (Moderate)					
	Never	Rarely	Often	Always	Never	Rarely	Often	Always	Never	Rarely	Often	Always		
Hot flushes	37	145	37	6	6	27	20	7	0	2	3	0	21.269	0.001
Night sweats	37	145	38	5	6	27	20	7	0	2	3	0	21.996	<0.001
Fatigue	58	140	21	5	1	32	24	3	0	0	5	0	58.765	<0.001
Sleep disturbance	94	99	30	2	3	21	25	11	0	0	4	1	78.757	<0.001
Leg cramps	28	117	57	23	2	18	24	16	0	0	4	1	27.335	<0.001
Joints and muscle pain	35	99	64	27	1	13	28	18	0	0	4	1	33.718	<0.001
Low back pain	36	107	58	24	1	7	27	15	0	0	4	1	34.760	<0.001
Crying spells	172	52	1	0	32	25	3	0	0	5	0	0	26.727	<0.001
Decreased concentration	181	40	3	1	22	31	6	1	0	5	0	0	56.854	<0.001
Forgetting	174	44	7	0	25	28	7	0	1	4	0	0	33.878	<0.001
Feels nervous	209	8	5	3	46	8	2	4	4	1	0	0	17.040	0.006
Reduced interest in sexual activity	139	48	17	21	7	15	9	21	0	1	0	4	75.373	<0.001
Easily getting irritated with family members and others	148	69	4	4	30	27	2	1	0	3	0	2	20.862	<0.001
Feels decreased family support	187	38	0	0	44	14	2	0	0	3	2	0	28.929	<0.001
Decreased interaction with others	174	50	0	1	46	13	1	0	0	2	3	0	32.595	<0.001

[Table/Fig-4]: Association between depressive symptoms and bio-psychosocial problems.

Studies	Place of study	Mean age at menopause
Present study	Udupi	51.68±4.254 years
Avin Alva BR et al [1]	Mangalore	45.32±2.79 years
Singh A et al [4]	Delhi	46.24±3.38 years
Borker SA et al [8]	Kerala	48.26 years±4.86 years
G Ganitha et al [9]	Tamilnadu	45.75±3.83 years
Khatoon F et al [10]	North India	50.33±5.25 years
Alakananda et al [11]	Assam	46.35±4.07 years
Nitin Joseph et al [12]	South Canara, Mangalore	48.4±4.5 years
Leena AJ et al [13]	Kerala	45.69±4.35 years
Aaron R et al [14]	Tamil Nadu	46.6±2.2 years

[Table/Fig-5]: Comparison of mean age of menopause.

Studies	Place of study	Depressive symptoms
Present study	Udupi	20.7%
Anjana W et al [2]	Uttarakhand	54% (major depressive disorder)
Dalal PK et al [6]	NA (Review)	20%
Christian DS et al [15]	Gujarat	13.6%
Afshari A et al [16]	Iran	39.8%
Tamaria A et al [17]	North India	41.5%
Neela MM et al [18]	Bangladesh	35%
Zang H et al [19]	China	11.4%

[Table/Fig-6]: Comparison of depressive symptoms.

Studies	Place of study	Menopausal symptoms
Present study	Udupi	Leg cramps (89.7%), joint and muscle pain (87.6%), fatigue (79.3%)
Borker SA et al [8]	Kerala	Fatigue (49.7%), easily get irritated (41.1%), muscle or joint pain (35.9%)
Alakananda et al [11]	Assam	Muscle and joint pain (63%), fatigue (55.5%), hot flushes (52.5%)
Joseph N et al [12]	South Canara, Mangalore	Joint and muscle ache (86.2%)
Leena AJ et al [13]	Kerala	Hot flushes (58%), excessive sweating (42%)
Aaron R et al [14]	Tamil Nadu	Aches and pain (52%), back ache (46%)
Christian DS et al [15]	Gujarat	Tiredness/ Easy Fatigue (88.4%), Headache (74.8%), Insomnia (57.1%)
Goyal A et al [20]	Uttar Pradesh	Visual problems (93.5%), joint pain (57%)
Devangamath MR et al [21]	Dharwad, Karnataka	Joint and muscle discomfort (86%), hot flushes and sweating (36%)
Siji VM et al [22]	Udupi	Aches and pain -joint, legs and back (68.25%), painful intercourse (67.75%), increase in frequency of urination (66.75%)

[Table/Fig-7]: Comparison of bio-psychosocial problems.

LIMITATION

The study is confined only to three Gram panchayaths of Udupi district and those who were able to read and write Kannada (language).

CONCLUSION

The present study identified depressive symptoms and psychosocial problems among menopausal women. The findings of the study revealed that 20.7% of these women experiencing depressive symptoms which cannot be ignored. Further, it suggests for need-based referral services to minimise the depressive symptoms of postmenopausal women. Community health centres can play a major role in identifying and referring women for better services.

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