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Influence of Weight on Health Status and Menopausal Problems of Rural and Urban Postmenopausal Women

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ABSTRACT

Aim of the study is to assess the influence of weight status on health status and menopausal problems of rural and urban postmenopausal women. In the study 80 rural and 80 urban postmenopausal women belonged to 40-55 years age were randomly selected from 8 villages and 2 cities of Dharwad and Bagalkote District. The postmenopausal symptoms were measured using Menopause Rating Scale (MRS) by Berlin (1992). Health status was measured using PGI-N_2 questionnaire by Wig and Verma (1978). The Results revealed that average age of menopause was 47 years in the present study. 42.50 Per cent of the rural women had ideal body weight and 50 Per cent of urban women belonged to overweight category in Dharwad district and similar trend was observed in Bagalkote district. 60 Per cent of rural women had moderate and 27.50 Per cent of them expressed severe menopausal symptoms. While in urban, 50 Per cent, 37.50 Per cent of the women suffered from moderate and mild menopausal symptoms respectively. In health status, 60 Per cent of the rural women had moderately affected and 25 Per cent severely affected health status. Where as in urban, 47.50 Per cent and 37.50 Per cent of them indicated moderately and mildly affected health status respectively. There was significant difference between rural and urban women in health status and menopausal symptoms. It revealed that rural women suffered more from health problems and menopausal symptoms compared to urban women. There was significant association observed between weight status (BMI) and menopausal symptoms among rural and urban women of both districts indicating increase in body weight increased menopausal symptoms. There was significant association reported between health status and weight status in rural women of Dharwad and rural and urban women of Bagalkote district. This indicated that women who had heavy body weight suffered more from health problems. Concluded that Weight status was significantly influencing on health problems and menopausal symptoms. Hence there is a need of educational empowerment of women with regard to weight control, healthy and nutritious diet during menopausal period.

***Key words:** Weight status, Health status, Menopausal symptoms*

INTRODUCTION

Menopause is the transient period of declining ovarian function and hormones as a part of ageing and it has an impact on health and sense of wellbeing. Menopause is unique in mammals and only human beings have a longer life span after menopause. The declining ovarian function starts as early as 40 years of age but it is insidious and asymptomatic often but abrupt and symptomatic. As estrogen acts as a shield of protection, women are protected from cardiovascular dysfunction during reproductive phase and the chances are equal after menopause due to structural and functional changes involving cardiac muscles and valves. Prevalence of obesity in women rises in each decade but 20 Per cent weight gain occurs within 3years of menopause. Obesity in Post menopausal women are multi factorial like reduced physical activity, resting metabolic rate, stress. The body mass index is commonly used as an index to assess the degree of body fat and various studies shown that with normal body BMI with increased waist hip ratio have two fold increases in cardiovascular dysfunction[5].The midlife is associated with a gradual decline in muscle strength, lung capacity, cardiac output and other physiological capacities. It is also time of adverse somatic changes, such as an increase in body weight, especially in adipose tissue, and a decrease in stature resulting in altered body proportion. Significant changes in the weight status, body composition and fat distribution patterns and increase in body weight status associated with menopausal symptoms and health status[6].

MATERIAL AND METHODS

The present study was conducted among women who attained menopause and belonging to 40-55 years age range were randomly selected from 8 villages and 2 cities of Dharwad and Bagalkote District.The tools for the study were the self-structured questionnaire to elicit the information regarding general and family information. Menopausal symptoms were assessed by using Menopause rating scale developed by Berlin.1992 to know the age related decline of physical and mental capacity. It consists of 11 questions divided into 3 sub scale such as Psychological subscale (4 to 7), Somatic Subscale (1, 2, 3 and 11) and Urogenital Subscale (8 to 10). The respondent has to indicate her problems with intensity of each are by using 5 point likart scale. Then the responses on each item was scored as 0-4 as none to very severe. The total score was categorized as low (0-14), medium (15-29) and high (30-44) further it was divided into somatic, psychological and urinary symptoms. PGI-N2 questionnaire developed by Wig and Verma,[9] To know the general health status of the respondents. This questionnaire has 50 statements. Score '1' is given for 'yes' and '0' given for 'no'. The number of right answers indicates the number of health problems, which can be than added to get their total responses. If the respondents are illiterate, read to her each question slowly and record responses. A high score indicate more number of health problems. Further is divided into mildly affected (0-17), moderately affected (18-34) and severely affected (35-50).

RESULTS

Table 1: Demographic characteristics of postmenopausal women of Dharwad and Bagalkote

The demographic characteristics of the respondents included age, education, occupation, caste, number of children and socio-economic status of postmenopausal women are presented in Table 1. In the rural women of Dharwad 50 per cent belonged to 51-55 years, while 30 per cent belonged to 46-50 years and 20 per cent were to aged between 40-45 years. Among urban women of Dharwad district similar trend was observed i.e. majority (52.50 %) belonged to 51-55 years, while 25 per cent in 46-50 years and 22.50 per cent belonged to 40-45 years.In case of rural women of Bagalkote, 45 per cent belonged to 51-55 years, while 42.50 per cent belonged to 46-50 years and 15 per cent in 40-45 years. In case of urban, 45 per cent, 42.50

per cent and 12.50 per cent women belonged to 51-55, 46-50 and 40-45 years respectively. Totally 49.37 per cent belonged to 51-55 years, while 33.12 per cent of women aged between 46-50 years and 17.50 per cent in 40-45 years of aged. With respect to occupation 80 per cent of rural women of Dharwad were found to be housewives, while 12.50 per cent of the women involved in farm activities, 5 per cent working in government jobs and only 2.50 per cent of women were working in private jobs. Whereas in urban area, 37.50 per cent women found to be housewife, while 52.50 per cent working in government employee and 12.50 per cent working in private employee. In case of Bagalkote, 22.50 per cent, 27.50 per cent women were involved in household and farm activities respectively, and 50 per cent working in private sectors, whereas in urban women 60 per cent women were found to be housewife, while 30 per cent working in government sectors and 10 per cent of women working in private sectors. Totally 50 per cent women were housewife, 10 per cent involved in farm activities, 21.25 per cent were working in government sectors and 18.75 per cent were working in private sectors in Bagalkote district. In case of respondent's education rural women of Dharwad, 62.50 per cent found to illiterate, 27.50 per cent respondents completed their primary level of education, 5 per cent high school as well as college education. Whereas 20 per cent of urban women were illiterate, 12.50 per cent of respondent completed primary school, 7.50 per cent had their high school, while 20 per cent of respondents completed their college and 40 per cent possessed graduation or post graduation Whereas in Bagalk, 77.50 per cent of rural respondents found illiterate, while 20 per cent completed primary school and only 2.50 per cent the women had their high school level of education. Among urban women, 25 per cent found illiterate, 30 per cent of women were had primary school education, 15 per cent of respondents completed their high school, while 7.50 per cent college and 22.50 per cent of the women possessed degree or post graduation level of education. Overall 46.25 per cent

found illiterate, 22.50 per cent were had their primary school, 7.50 per cent college and 8.31 per cent were completed college level of education. The respondents among Dharwad district, 35 per cent rural women belonged to upper caste, while 45 per cent belonged to OBC caste, 12.50 per cent dalits and 7.50 per cent tribals. Similarly in Dharwad district urban women, 72.50 per cent belonged to OBC caste, while 20 per cent belonged to upper caste, 5 per cent dalits and only 2,50 per cent tribal caste. Incase of Bagalkote district, 50 per cent of rural women belonged to OBC caste followed by 27 per cent dalits caste, while 12.50 per cent belonged to upper caste and 10 per cent tribals caste. Similar trend was seen in urban women of Bagalkote. On the whole 55 per cent women belonged to OBC followed by 26.25 per cent in upper caste, 13 per cent in dalits and 5.65 per cent in tribals category. It is clearly pointed out that 52.50 per cent of the Dharwad rural women possessed 3-4 children followed by 20 per cent with 5-6 children, 15 per cent had 1-2 children and 12.50 per cent possessed more than six children. Whereas in Dharwad urban, 47.50 per cent women possessed 1-2 children followed by 35 per cent with 3-4 children, 12.50 per cent with 5-6 children and only 5 per cent possessed more than 6 children in case of Bagalkote rural women, 47.50 per cent of the women possessed 3-4 children followed by 30 per cent with more than six children, 15 per cent with 5-6 children and 7.50 per cent of respondents possessed 1-2 children. Whereas in Bagalkote urban women, 40 per cent possessed 3-4 children followed by 35 per cent with 1-2 children, 15 per cent and 10 per cent possessed more than six and 5-6 children respectively. Overall 43.75 per cent women possessed 3-4 children followed by 26.25 per cent had 1-2 children, 15.63 per cent with 5-6 children and 14.38 per cent possessed more than 6 children. With respect to Socio-Economic Status in Dharwad district, 70 per cent of rural women belonged to middle class of SES followed by 27.50 per cent to poor and 2.50 per cent to high class of SES. Whereas among urban women, 75 per cent belonged to

middle class SES category followed by 17.50 per cent to high SES and 7.50 per cent of them belonged to poor SES. In case of Bagalkote district, 52.40 per cent of rural postmenopausal women belonged to middle SES followed by 47.50 per cent belonged to poor SES and none of the respondents belonged to high SES category. Among urban women, 65 per cent belonged to middle SES category followed by 25 per cent and 10 per cent of women belonged poor and high SES category respectively.

Table 2: Percentage distribution of postmenopausal women by weight status of rural and urban women

Body Mass Index (BMI) stands for a numerical value of weight in relation to height. BMI's are good indicators of healthy weights for adult women, regardless of body frame size. Higher BMI's (25+) are associated with increased health risks. Nutritional status of postmenopausal women interms of Body Mass Index (BMI) of rural and urban is indicated in Table 2. Among rural women, majority of them (42.50 %) in over weight category, followed by 40 percent in ideal body weight category, only 10 percent of the women found in obese category and 7.5 percent underweight category. In case of urban postmenopausal women, half of them (50 %) had overweight, followed by 26.25 per cent in ideal body weight category, 22.50 per cent in obese and only 1.25 per cent of women found in underweight category. Totally 46.25 per cent fell in overweight category, followed by 33.13 per cent had ideal body weight, 16.26 per cent of women had obese and only 4.38 per cent of them having underweight category. A study conducted by Rathi *et al.*[7] stated that Obesity is a growing problem even in developing regions like India and is more common in females and in urban population.

Table 3: Association between weight status and menopausal symptoms

The association of weight status of postmenopausal women with menopausal symptoms is presented in Table 3. Among rural women, majority of them (57.14%) had ideal body weight, 14.28 percent of them had

overweight and 28.57 percent of the women belonged to obese category experienced mild menopausal symptoms. It was observed that 54.16 percent of them had overweight, 33.33 percent of women had ideal body weight and 12.50 percent of them belonged to obese category expressed moderate level of menopausal symptoms. Women who reported severe menopausal symptoms among them, 44.44 percent of them and 22.22 percent of them belonged to obese and ideal body weight. There was significant association observed between menopausal symptoms and weight status of postmenopausal women.Whereas in urban women, who experienced mild menopausal symptoms, 45.45 percent of them belonged to overweight as well as ideal body weight category and 9.09 percent of them belonged to obese category. Among women who reported moderate menopausal symptoms, 61.11 percent belonged to overweight, 22.22 percent possessed ideal body weight and 16.63 percent of them belonged to obese category. Among women with severe menopausal symptoms, 54.54 percent belonged to overweight, 27.27 percent and 18.18 percent of them belonged to ideal body weight and obsess category.In case of Bagalkote, 57.14 percent of rural women had ideal body weight, while 28.57 percent and 14.28 percent of them belonged to overweight and obese category respectively who reported moderate menopausal symptoms. Among women who reported moderate menopausal symptoms, 61.11 percent of the women belonged to ideal body weight and 44.44 percent of them belonged to overweight. 53.33 percent, 40 percent and 6.67 percent of the women belonged to obese, overweight and ideal body weight category respectively who experienced severe menopausal symptoms. Whereas among urban, 41.66 percent of the women belonged to ideal body weight, 33.33 percent and 16.67 percent of them belonged to overweight and obese category respectively who reported mild menopausal symptoms. Among women who experienced moderate menopausal symptoms, 44.44 percent, 33.33 percent and 22.22 percent of the women

belonged to overweight, ideal body weight and obese category respectively. Among women who reported severe menopausal symptoms, 50 percent of them belonged to obese category, followed by 40 percent overweight and 10 percent of them in ideal body weight category. There was significant association found between menopausal symptoms and weight status of rural women of Dharwad and Bagalkote districts and there was non-significant association observed between menopausal symptoms and weight status among urban women of Dharwad and Bagalkote. The study supported by Rao *et al.*[8] found that women weight status was significantly associated with menopausal symptoms.

Table 4: Association between health status and weight status among postmenopausal women

The association of weight status of postmenopausal women with health status is presented in Table 4. Among rural women, half of them (50 %) had ideal body weight, 33.33 percent of them had over weight and 16.67 percent of the women belonged to obese category experienced mildly affected health status. It was observed that 54.16 percent of them had overweight, 37.50 percent of the women had ideal body weight and 8.33 percent of them belonged to obese category expressed moderately affected health status. Women who reported severely affected health status among them, 40 percent of them had ideal body weight followed by 30 percent of them belonged to overweight and obese category. There was significant association observed between health status and weight status of postmenopausal women. Whereas in urban women, who experienced mildly affected health status, 46.66 percent of them belonged to overweight and 33.33 ideal body weight category and 20 percent of them belonged to obese category. Among women who reported moderately affected health status, 52.63 percent belonged to overweight, 26.31 percent of them belonged to obese category and 21.05 percent possessed ideal body weight. Among women with severely

affected health status, 5o percent belonged to obese, 33.33 percent and 16.67 percent of them belonged to overweight and ideal body weight. There was non-significant association found between weight status and health status of urban women. In case of Bagalkote, 33.33 percent of rural women had ideal body weight, while 50 percent and 16.67 percent of them belonged to overweight and obese category respectively who reported moderately affected health status. Among women who reported moderately affected health status, 68.75 percent of the women belonged to ideal body weight and 31.25 percent of them belonged to overweight. 50 percent, 27.77 percent and 22.22 percent of the women belonged to overweight, obese and ideal body weight category respectively who experienced severely affected health status. Whereas among urban, 38.46 percent of the women belonged to ideal body weight as well as overweight category and 23.07 percent of them belonged to obese category who reported mildly affected health status. Among women who experienced moderately affected health status, 70.58 percent, 23.52 percent and 5.88 percent of the women belonged to overweight, ideal body weight and obese category respectively. Among women who reported severely affected health status, 40 percent of them belonged to overweight category, followed by 30 percent belonged to obese as well as ideal body weight category. There was significant association found between health status and weight status. . A study in line with Goyal *et al.*[3] reported that weight gaining among menopausal women significantly related with health problems faced.

Table 5: Inter correlation between components

The intra correlation between components such as, health status, menopausal symptoms and weight status (BMI) are presented in Table 5. there was significant interrelationship observed between weight status and health status and non-significant interrelationship between weight status and menopausal symptoms. And there was non-significant interrelationship between menopausal

symptoms and health status. A study conducted by Karyo *et al.*[4] revealed that women menopausal symptoms, BMI and heath status of women inter related to each other.

Hence there is a need of educational empowerment of women with regard to weight control, healthy and nutritious diet during menopausal period.

Table 1: Demographic characteristics of postmenopausal women of Dharwad and Bagalkote

Sl No	Variables	Dharwad		Bagalkote		Total (N=160)
		Rural (n=40)	Urban (n=40)	Rural (n=40)	Urban (n=40)	
I	**Age (years)**					
	40 – 45	8 (20.00)	9 (22.00)	6 (15.00)	5 (12.50)	28 (17.50)
	46 – 50	12 (30.00)	10 (25.00)	14 (35.00)	17 (42.50)	53 (33.13)
	51 – 55	20 (50.00)	21 (52.00)	20 (50.00)	18 (45.00)	79 (49.37)
II	**Occupation of women**					
	Housewives	32 (80.00)	15 (37.50)	9 (22.50)	24 (60.00)	80 (80.00)
	Farm women	5 (12.50)	0 (0.00)	11 (27.50)	-	16 (10.00)
	Government employed (teachers, bank works)	2 (5.00)	21 (52.50)	-	12 (30.00)	34 (21.25)
	Private employed (hostel cooks, clerks)	1 (2.50)	5 (12.50)	20 (50.00)	4 (10.00)	30 (18.75)
III	**Education of women**					
	Illiterate	25 (62.50)	8 (20.00)	31 (77.50)	10 (25.00)	74 (46.25)
	Primary	11 (27.50)	5 (12.50)	8 (20.00)	12 (30.00)	36 (22.50)
	High school	2 (5.00)	3 (7.50)	1 (2.50)	6 (15.00)	12 (7.50)
	College	2 (5.00)	8 (20.00)	-	3 (7.50)	13 (8.13)
	>graduation and Post Graduate	-	16 (40.00)	-	9 (22.50)	25 (15.60)
IV	**Caste**					
	Upper caste	14 (35.00)	8 (20.00)	5 (12.50)	15 (37.50)	42 (26.25)
	OBC	18 (45.00)	29 (72.00)	20 (20.00)	21 (52.50)	88 (55.00)
	Dalits	5 (12.50)	2 (5.00)	11 (27.00)	3 (7.50)	21 (13.12)
	Tribals	3 (7.50)	1 (1.25)	4 (10.00)	1 (2.50)	9 (5.65)
V	**No of Children**					
	1 – 2	6 (15.00)	19 (47.50)	3 (7.50)	14 (35.00)	42 (26.25)
	3 – 4	21 (52.50)	14 (35.00)	19 (47.50)	16 (40.00)	70 (43.75)
	5 – 6	8 (20.00)	5 (12.50)	6 (15.00)	4 (10.00)	23 (14.38)
	> 6	5 (12.50)	2 (5.00)	12 (30.00)	6 (15.00)	25 (15.63)
VI	**Socio-Economic Status**					
	High	1 (2.50)	7 (17.50)	-	4 (10.00)	12 (7.50)
	Middle	28 (70.00)	30 (75.00)	21 (52.40)	26 (65.00)	105 (65.62)
	Poor	11 (27.50)	3 (7.50)	19 (47.50)	10 (25.00)	43 (26.88)

*Figures in the parenthesis indicates percentage

Table 2: Percentage distribution of postmenopausal women by weight status of rural and urban women

Categories	Rural (n=80)	Urban (n=80)	Total (N=160)
Underweight (BMI<18.5)	6 (7.50)	1 (1.25)	7 (4.37)
Ideal body weight (18.5-22.9)	32 (40.00)	21 (26.25)	53 (33.13)
Overweight (BMI>23)	34 (42.50)	40 (50.00)	74 (46.25)
Obese (>25 BMI)	8 (10.00)	18 (22.50)	26 (16.25)

Figures in the parenthesis indicates percentage

Table 3: Association between weight status and menopausal symptoms

Area	Locality	Menopausal symptoms	N	Ideal weight (18.5-22.9)	Overweight (BMI>23)	Obese (>25 BMI)	Modified X^2
Dharwad (n=80)	Rural (n=40)	Mild	7	4(57.15)	1(14.28)	2(28.57)	5.73*
		Moderate	24	8(33.36)	13 (54.16)	3(12.50)	
		Severe	9	2(22.22)	4(44.45)	3(33.33)	
	Urban (n=40)	Mild	11	5(45.45)	5(45.45)	1(9.0)	0.96 NS
		Moderate	19	5(26.32)	11(57.89)	3 (15.79)	
		Severe	10	3(27.73)	5(54.54)	2(18.18)	
Bagalkote (n=80)	Rural (n=40)	Mild	7	4(57.14)	2(28.57)	1(14.28)	7.94*
		Moderate	15	1(6.67)	6(40.00)	8(53.33)	
		Severe	18	11 (61.12)	7 (38.88)		
	Urban (n=40)	Mild	12	7(58.33)	3(25.00)	2 (16.67)	0.69 NS
		Moderate	18	6(33.33)	8(44.45)	4(22.22)	
		Severe	10	1(10.00)	4(40.00)	5(50.00)	

Figures in the parenthesis indicates percentage

*significant at 0.05 level   NS - not significant

Table 4: Association between health status and weight status among postmenopausal women

Area	Locality	Health status	n	Ideal weight (18.5-22.9)	Overweight (BMI>23)	Obese (>25 BMI)	Modified X^2
Dharwad (n=80)	Rural (n=40)	Mildly affected	6	3 (50.00)	2 (33.33)	1(16.67)	5.38*
		Moderately affected	24	9 (37.50)	13 (54.16)	2 (8.33)	
		Severely affected	10	4 (40.00)	3 (30.00)	3 (30.00)	
	Urban (n=40)	Mildly affected	15	5 (33.33)	7 (46.66)	3 (20.00)	2.81 NS
		Moderately affected	19	4 (21.05)	10 (52.63)	5 (26.31)	
		Severely affected	6	1 (16.67)	2 (33.33)	3 (50.00)	
Bagalkote (n=80)	Rural (n=40)	Mildly affected	6	2 (33.33)	3 (50.00)	1 (16.67)	4.21*
		Moderately affected	16	11 (68.75)	5 (31.25)	-	
		Severely affected	18	4 (22.22)	9 (50.00)	5 (27.77)	
	Urban (n=40)	Mildly affected	13	5 (38.46)	5 (38.46)	3 (23.07)	6.52*
		Moderately affected	17	4 (23.52)	12 (70.58)	1 (5.88)	
		Severely affected	10	3 (30.00)	4 (40.00)	3(30.00)	

Figures in the parenthesis indicates percentage

*significant at 0.05 level   NS - not significant

Table 5: Inter correlation between components

	Weight status	Menopausal symptoms	Health status
Weight status	1	0.16^{NS}	0.22*
Menopausal symptoms		1	0.11^{NS}
Health status			1

NS- Non-significant   *- Significant at 0.05 level

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