

Health status of menopausal women and correlates

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Abstract

The health status of menopause and its correlates among middle aged 160 rural and urban women was studied during 2015. The women who attained menopause and belonging to 40-55 years age range were selected from 8 villages of 4 talukas of Dharwad and Bagalkot Districts. The health status of women was evaluated by using standardized questionnaire, Post Graduate Institute of Medical Education and Research (PGI). The structured interview schedule was used to collect personal information like name of the family members with their age, relationship with respondent. The Socio Economic Status (SES) of family was assessed by using Socio Economic Status scale developed by Agarwal (2005). The results revealed that 53.75 per cent respondents shown moderately affected followed by 26.25 per cent mildly affected and 20 per cent of women indicated severely affected health status. The mean value of health status in rural women is higher (23.67 ± 7.02) than mean value of (21.50 ± 6.89) urban women means the rural women had more health problems than urban women. Health status were high negatively significantly related with SES, education and occupation means women belonged to better SES category, literate and working women experienced less health problems compared to women who had poor SES, illiterate and non-working.

Keywords: Menopause, Health Problems, Socio-Economic Status.

1. Introduction

Women's health has been a global concern for many decades. The focus of women's health researchers and health policy planners has also shifted towards post-menopausal women since recent trends suggest an increase in their number and life expectancy. Under current demographic trends, menopausal and post menopausal health has emerged as an important public health concern in India owing to improved economic conditions, rapid lifestyle changes and increased longevity. Generally, women have more complex and stressful ageing process as men do, as a consequence of hormonal changes that during menopausal transition. The onset of these physiological developments not only marks the end women's reproductive function but makes them more vulnerable to new set of health problems including cardiovascular diseases, Osteoporosis and so on. Menopause is the time in women's life when her period stops (Amruthavall, B. N. and VenkataRamana, G., 2015). It happens because the women's ovary stops producing estrogen and progesterone hormones. It occurs often after the age of 45 years with the general increase in

life expectancy, many women are likely to live for more than 20 years after menopause, spending about one quarter of their lives or more in a state of estrogen deficiency. Some of menopausal symptoms experienced by these women can be severe enough, affect their normal daily activities. Unfortunately majority of these women are not aware of the changes brought about by menopause (Kannur,D and Itagi, S., 2017). The menopause is emerged has an issue owing to rapid globalization, urbanization awareness of increased longevity in urban middle aged Indian women are evolving as homogenous group. Improved economic condition and education may cause the attitude of women to be more positive towards the menopause (Kannur,D. and Itagi, S., 2018). The aim of this study is to assess health status of menopausal women and to identify the factors influencing for health status of women.

2. Methods and Materials

2.1. Subjects

The study was conducted on women who attained menopause and belonged to 35-55 years of age selected from 8 villages of 4 Talukas of Dharwad and Bagalkot districts of Karnataka state. The criteria for inclusion in the study were: the women who attend menopause at least before one year of the study conducted, no history of chronic illness, not had any history of cancer and the women attend surgical menopause excluded from the study.

2.2. Assessments

The structured interview schedule was used to collect personal information like name of the family members with their age, relationship with respondent. The Socio- Economic Status scale consists of 22 statements which assess caste, education, occupation, and monthly per capita income from all sources, type of house and location, family possessions and possessions of earning members in the family, number of children and possessions of agricultural and nonagricultural land along with animals and social status of the family. One score was given for each item of different dimensions and added to obtain total score.

The health status of women was evaluated by using standardized questionnaire, Post Graduate Institute of Medical Education and Research (PGI) health questionnaire developed by Wig and Verma (1978). 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 added to get their total responses. If the respondents are illiterate the statements are read to them each question slowly, and responses are recorded. A high score indicates more number of health problems.

2.3. Statistical Analyses

Frequency and percentages were calculated to interpret the demographic characteristics of women. t-test was used for comparison between two locality i.e., rural and urban both in Dharwad and Bagalkote area. Modified Chi-Square, A non parametric test of independence was applied to determine the association between health status and demographic variables, wherever the frequency was less than five using the formula by Lawal and Upton (1984) test of independence was applied to determine the association between health status and demographic variables. Karl Pearson's correlation coefficient analysis was carried out to assess the degree of relationship between health status and socioeconomic status among menopausal women.

3. Results and Discussion

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.

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 Bagalke, 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.

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.

Table 1: Demographic characteristics of postmenopausal women of Dharwad and Bagalkote(N=160)

SI 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

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 Incase 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.

The response related to know the effect of menopause is presented in Table 2. With respect to health problems during menopause multiple responses were given by postmenopausal women. 47.50 per cent of rural women suffered from abdominal pain followed by 20 per cent constipation, while 15 per cent of them reported heavy weight and only 2.5 per cent women felt weakness during and after attainment of menopause.

While in case of urban women, 32 per cent of them suffered from abdominal pain followed by 12.50 per cent of them had heavy weight, while 10 per cent constipation and only 2.50 per cent suffer from piles as well as white discharge.

Whereas from Bagalkote, 52.50 per cent of women suffered from abdominal pain followed by 32.50 per cent of them had constipation and 22.50 per cent had weakness, while 10 per cent of them indicated heavy weight and 7.50 per cent pointed out that they suffered from white discharge.

While from urban women, 37.50 per cent of them had abdominal pain followed by 32.50 per cent heavy weight, while 12.50 per cent, 7.50 per cent of women suffered from constipation and piles respectively and only 2.50 per cent of women were pointed out having weakness as well as white discharge.

In Dharwad rural women, 52.50 per cent of them reported that they had no medical problems followed by 22.50 per cent showed having both BP and diabetics, while 17.50 per cent of them had high blood pressure. From urban women 47.50 per cent of them had no problems, while 25 per cent of women indicated having high blood pressure as well as both BP and diabetics and only 2.50 per cent had low blood pressure.

In Dharwad only 2.50 per cent of rural women had taken HRT and 97.50 per cent not had any treatment. Among urban women, 12.50 per cent of the women undergone HRT treatment. In case of Bagalkote, none of rural women had any treatment during menopause.

In urban only 2.5 per cent of the women taking HRT treatment, while majority (97.50 %) of them not taken any treatment. When asked about feeling irritable or unhappy during menopause. In Dharwad, rural women 17.50 per cent of them felt irritable during menopause. In urban, 27.50 per cent of the women reported irritable mood, while 72.50 per cent of them reported no change in mood. Whereas in Bagalkote, 12.50 per cent of them pointed out irritable mood during menopause.

In urban women 80 per cent of them indicated no change in mood, while 20 per cent of them expressed irritable mood during menopause. Silambuselvi and Valavan (2016) results highlighted that prevalence of hypertension and diabetics was more among urban postmenopausal women than their rural counterpart.

Hamid *et al.* (2014) reported that there was poor knowledge about HRT among rural and urban women. Davis *et al.* (2015) results revealed that abdominal obesity and feeling heaviness were found more among postmenopausal women compared to pre and perimenopausal women.

Table 2: Effects of menopause on health status of women and treatment(N=160)

Sl No	Particulars of effects of menopause (*Multiple responses)	Dharwad		Bagalkote	
		Rural (n=40)	Urban (n=40)	Rural (n=40)	Urban (n=40)
A	Health problems experienced				
	Weakness	2 (5.00)	5 (12.50)	9 (22.50)	2 (5.00)
	Heaviness feeling	6 (15.00)	11(27.50)	4 (10.00)	13 (32.50)
	Constipation	8 (20.00)	4 (10.00)	13 (32.50)	5 (12.50)
	Piles	-	1 (2.50)	-	3 (7.50)
	White discharge	-	1 (2.50)	3 (7.50)	1 (2.50)
	Abdominal pain	19(47.50)	13 (32.50)	21(52.50)	15 (37.50)
B	Metabolic Report				
	High Blood Pressure (BP)	7 (17.50)	10 (25.00)	8 (20.00)	12 (30.00)
	Low Blood Pressure (BP)	3 (7.50)	1 (2.50)	9 (22.50)	4 (10.00)
	BP + Diabetics	9 (22.50)	10 (25.00)	7 (17.50)	9 (22.50)
	No BP and Diabetics	13 (32.50)	19 (47.50)	11 (40.00)	15 (37.50)
	Not diagnosed	8 (20.00)	-	5 (12.50)	2 (5.00)
C	Treatment taken for menopausal problems				
	Yes (HRT)	1 (2.50)	5 (12.50)	-	1 (2.50)
	No	39(97.50)	35 (87.50)	40 (100)	39 (95.50)
D	Feeling irritable/ unhappy during menopause				
	Yes	7 (17.50)	11 (27.50)	5 (12.50)	8 (20.00)
	No	33 (82.50)	29 (72.50)	35 (87.50)	32 (80.00)

Figures in the parenthesis indicates percentage

Health status of middle aged women was categorized into three groups, mildly affected (0-17) indicator of mildly affected health status, moderately (18-34) indicator of moderately affected and severely (35-50) indicator of severely affected health status. Health status of postmenopausal women of two districts is shown in Figure 1.

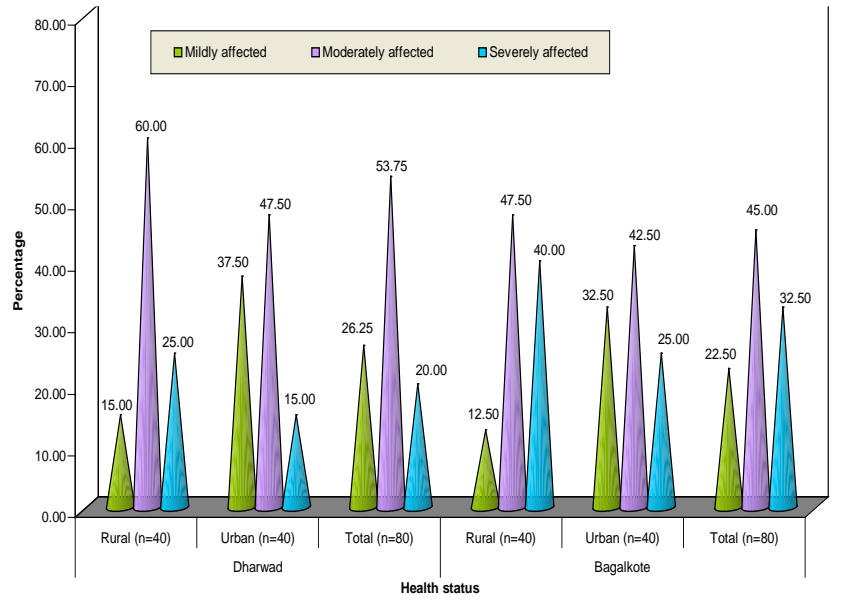


Figure 1: Frequency distribution of health status of postmenopausal women

In Dharwad, 60 per cent of rural women had moderately affected health status, while 25 per cent severely and 15 per cent of the women were having mildly affected health status. Among urban women, 47.50 per cent of them indicated moderately affected health status, while 37.50 per cent and 15 per cent of them shown mildly and severely affected health status respectively. Totally 53.75 per cent respondents shown moderately affected followed by 26.25 per cent mildly affected and 20 per cent of women indicated severely affected health status. There was significant difference and significant association found between rural and urban women in health status. In case of Bagalkote district, 47.50 per cent rural women had moderately affected health status, while 40 per cent and 12.50 per cent indicated severely and mildly affected health status respectively. Whereas from urban area, 42.50 per cent of the women moderately affected, while 32.50 per cent of them showed severely affected and 22.50 per cent of the women mildly affected health status. Totally 45 per cent of women exhibited moderately affected and 32.50 per cent of women had severely affected and 22.50 per cent reported mildly affected health status. The study supported by Ueda *et al.*, 2009 reported that rural middle aged women experienced severe health problems while urban middle aged women experienced mild and moderate level of health problems.

The difference in health status of menopause between rural and urban women is given in Table 3. The mean scores of health status of rural women were higher (22.45 ± 5.67) than mean scores of urban women (19.20 ± 3.59).

Table 3: Comparison of mean scores of health status among postmenopausal women(N=160)

Area	Locality	N	Mean	SD	t-value
Dharwad(n=80)	Rural	40	22.45	5.67	5.68**
	Urban	40	19.20	3.59	
Bagalkote(n=80)	Rural	40	23.67	7.02	7.77**
	Urban	40	21.50	6.89	

Figures in the parenthesis indicates percentage ** significant at 0.01 level

The ‘t’ value 5.68 was found to be highly significant hence there was highly significant difference in health status between rural and urban women of Dharwad. In case of Bagalkote, there was highly significant difference in ‘t’ value of 7.77 in health status of rural and urban women. The mean value of health status in rural women is higher (23.67±7.02) than mean value of (21.50±6.89) urban women. The study conducted by Jyotsana (2015) pointed out that accessibility of health services, class and social participation contributed for better health of urban women compared to rural women. Another study conducted by Donald *et al.* (2012) reported that rural postmenopausal women suffer from variety of health problems than urban women.

Relationship of health status of postmenopausal women belonging to different SES category is indicated in Table 4. In case of Dharwad, 20.68 per cent of them found mildly affected, 55.17 per cent showed moderately affected and 24.13 per cent of women expressed severely affected health status belonged to middle SES category. Among urban women, 57.14 per cent, 28.57 per cent and 14.28 per cent of the women were having mildly affected, moderately and severely affected health status belonged to high SES class respectively.

While from middle SES category, 23.33 per cent of them reported mildly affected as well as severely affected, while 53.34 per cent had moderately affected. In poor SES category, 66.67 per cent and 33.33 per cent of the women had severely affected and moderately affected health status respectively.

In Bagalkote, 19.04 per cent rural women had mildly affected, while 66.66 per cent expressed moderately affected and 14.28 per cent of them reported severely affected health status belonged to middle SES category. In poor SES category, 5.26 per cent, 52.63 per cent and 42.21 per cent of the women were showed mildly affected, moderately affected and severely affected health status respectively.

While from urban women, in high SES families, 50 per cent of women reported mildly as well as moderately affected health status. 30.76 per cent of women had mildly, while 61.55 per cent of them showed moderately affected and 7.69 per cent of the women were having severely affected health status belonged to middle SES group.

Table 4: Association between health status and socio economic status among rural and urban women of Dharwad and Bagalkote(N=160)

Area	Locality	SES	n	Health status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	Rural (n=40)	Middle	29	6 (20.68)	16 (55.17)	7 (24.13)	7.708*	-0.27*
		Poor	11	2 (18.18)	3 (27.27)	6 (54.54)		
	Urban (n=40)	High	7	4 (57.14)	2 (28.57)	1 (14.28)	14.054*	-0.35*
		Middle	30	7 (23.33)	16 (53.34)	7 (23.33)		
		Poor	3	-	1 (33.33)	2 (66.67)		
Bagalkote (n=80)	Rural (n=40)	Middle	21	4(19.04)	14 (66.66)	3 (14.28)	6.984*	-0.31*
		Poor	19	1 (5.26)	10 (52.63)	8 (42.21)		
	Urban (n=40)	High	4	2 (50.00)	2 (50.00)	-	11.077*	-0.37*
		Middle	26	8 (30.76)	16 (61.55)	2 (7.69)		
		Poor	10	3 (30.00)	2 (20.00)	5 (50.00)		

Figures in the parenthesis indicates percentage *significant at 0.05 level

In poor SES category, 30 per cent of women expressed mildly affected, while 20 per cent of them indicated moderately affected and 50 per cent of them reported severely affected health status. There was negatively significant relationship between SES and health status of the rural and urban women of Bagalkote as well as Dharwad district. There was significant association found between SES and health status of rural and urban women of Bharwad as well as Bagalkote district. Badami *et al.* (2013) observed that negatively significant relationship between health, stress and socio-economic status of both rural and urban women.

Relationship between health status of postmenopausal women and age is shown in Table 5. In case of Dharwad, the respondents belonging to 40-45 years, 62.50 per cent of them had moderately affected health status followed by 37.50 per cent of them had mildly affected health status respectively. Majority of them (58.33%) reported moderately affected health status, while 25 per cent and 16.67 per cent of the women indicated mildly and severely affected health status belonged to 46-50 years.

In 51-55 years age group, 50 per cent of the women exhibited moderately affected health status, while 30 per cent of the women reported severely affected and 20 per cent of the women were showed mildly affected health status.

There was positively significant correlation found between age and health status. In case of urban women 77.78 per cent expressed moderately affected health status, 11.11 per cent of the women exhibited mildly affected health status as well as severely affected health status, belonged to 40-45 age group.

In 46-50 years age group 50 per cent showed moderately affected, while 30 per cent of them had severely and 20 per cent of women reported mildly affected health status. 28.57 per cent exhibited moderately affected, 17.04 per cent of them mildly affected and 52.38 per cent of women reported severely affected health status.

Table 5: Correlation coefficient between health status and age among rural and urban women of Dharwad and Bagalkote (N=160)

Area	Locality	Age (years)	n	Health Status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	Rural (n=40)	40-45	8	3 (37.50)	5 (62.50)	-	3.564*	-0.26*
		46-50	12	3 (25.00)	7 (58.33)	2 (16.67)		
		51-55	20	4 (20.00)	10 (50.00)	6 (30.00)		
	Urban (n=40)	40-45	9	1 (11.11)	7 (77.78)	1 (11.11)	5.057*	-0.73**
		46-50	10	2 (20.00)	5 (50.00)	3 (30.00)		
		51-55	21	4 (19.04)	6 (28.57)	11 (52.38)		
Bagalkote (n=80)	Rural (n=40)	40-45	6	1 (16.67)	5 (83.33)	-	5.326*	-0.33*
		46-50	14	4 (28.57)	8 (57.14)	2 (14.28)		
		51-55	20	3 (15.00)	11 (55.00)	6 (30.00)		
	Urban (n=40)	40-45	5	3 (60.00)	2 (40.00)	-	2.336 ^{NS}	-0.56**
		46-50	17	5 (29.66)	9 (52.94)	3 (17.64)		
		51-55	18	3 (16.67)	10 (55.55)	5 (27.78)		

Figures in the parenthesis indicates percentage level

*significant at 0.05 level
NS- non significant

** significant at 0.01

There was a highly significant relationship found between age and health status. In case of Bagalkote, 83.33 per cent of rural women showed moderately affected and 16.67 per cent exhibited mildly affected health status belonged to 40-45 years age group.

In 46-50 years age group, 57.14 per cent of them showed moderately affected, 28.57 per cent mildly affected, while 14.28 per cent of the women reported severely affected health status. 55 per cent of women exhibited moderately affected, while 30 per cent severely and 15 per cent of them reported mildly affected health status belonged to 51-55 years age group.

There was positively significant relationship between age and health status. Among urban, 60 per cent of women showed mildly affected and 40 per cent of them reported moderately affected health status belonged to 40-45 years age group. In 46-50 years age group, 52.94 per cent of the women exhibited moderately affected, while 29.66 per cent showed mildly affected and 17.64 per cent of the women reported severely affected health status. 55 per cent, 27.78 per cent and 16.67 per cent of the women were reported moderately, severely and mildly affected health status respectively belonged to 51-55 years age group.

There was highly significant relationship and found between age and health status of postmenopausal women. There was significant association found between age and health status in rural and urban women of Dharwad and rural women of Bagalkote but there was non-significant association observed between age and health status of urban women of Bagalkote. A study supported by Esra and Sylvia (2008) reported that the degree of general health status severity was significantly associated with age.

In another study the women <45 years of age group experienced less severe health problems than >45 ye women and age was significantly associated with health status among postmenopausal women (Stepania *et al.*, 2013).

Table 6: Correlation coefficient between health status and education among rural and urban women of Dharwad and Bagalkote(N=160)

Area	Locality	Education	n	Health status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	Rural (n=40)	Illiterate	25	1(4.00)	15(60.00)	9(36.00)	16.07*	-0.48*
		Primary	11	4(36.36)	4(36.36)	3(27.28)		
		High school	2	1(50.00)	-	1(50.00)		
		College	2	2(100)	-	-		
	Urban (n=40)	Illiterate	8	1(12.50)	3(37.50)	4(50.00)	20.47*	-0.51**
		Primary	5	1(20.00)	2(40.00)	2(40.00)		
		High school	3	-	2(66.67)	1(33.33)		
		College	8	2 (25.00)	4(50.00)	2(25.00)		
	>Degree/ PG	16	6(37.50)	9(56.25)	1(6.25)			
Bagalkote (n=80)	Rural (n=40)	Illiterate	31	2(6.45)	21(67.74)	8(25.80)	10.87*	-0.33*
		Primary	8	2(25.00)	3(37.50)	3(37.50)		
		High school	1	1(100)	-	-		
	Urban (n=40)	Illiterate	10	1(10.00)	5(50.00)	4(40.00)	13.35*	-0.41*
		Primary	12	2(16.67)	6 (50.00)	4(33.33)		
		High school	6	3(50.00)	2(33.33)	1(16.67)		
		College	3	2(66.67)	1(33.33)	-		
	>Degree/ PG	9	5(55.56)	3(33.33)	1(11.11)			

Figures in the parenthesis indicates percentage level

*significant at 0.05 level

** significant at 0.01

The relationship between health status and education is shown in Table 6. In Dharwad, among rural illiterate women, 60 per cent of respondents having moderately affected health status, while 36 per cent severely affected and only 4 per cent of them had mildly affected health status. Women who completed primary school education, 36 per cent of them exhibited mildly as well as moderately affected health status. 50 per cent of respondents indicated mildly as well as severely affected health status who were studied till high school education. Women who completed college education, 100 per cent of them reported mildly affected health status. Whereas in urban illiterate women, 50 per cent of them severely affected health status followed by 37.50 per cent of women reported moderately affected and only 12.50 per cent had mildly affected health status.

In case of women studied primary education, 40 per cent of them had severely as well as moderately affected health status followed by only 20 per cent of the women expressed mildly affected health status. Among women who educated till high school education, 66.67 per cent of them indicated moderately affected and only 33.33 per cent of them showed severely affected health status. Among women educated college level, 50 per cent of them reported moderately and 25 per cent showed mildly as well as severely affected health status. 56.25 per cent of respondents showed moderately affected followed by 37.50 per cent mildly affected and only 6.25 per cent of them had severely affected health status from women studied >degree/PG. There was negatively significant relationship observed between education and health status among rural and urban women of Dharwad. In case of Bagalkote illiterate women, majority (67.74%) of them reported moderately affected health status, while 25.74 per cent of the women showed severely affected and only 6.45 per cent of them showed mildly affected health status.

37.50 per cent of women moderately affected as well as severely affected health status and 25 per cent of them mildly affected health status who educated primary school education. Women who educated till high school, 100 per cent of them showed mildly affected health status. Whereas among urban illiterate women, 50 per cent, 40 per cent and only 10 per cent of women reported moderately, severely and mildly affected health status. Women who educated till primary school, 50 per cent of them had moderately affected health status followed by 33.33 per cent of them reported severely and 16.67 per cent of the women mildly affected health status. While 50 per cent, 33.33 per cent and 16.67 per cent of the women indicated mildly affected, moderately and severely affected health status respectively belonged to high school education group.

Among women educated till degree/PG, 55.56 per cent reported mildly affected health status, while 33.33 per cent had moderately and only 11.11 per cent of them showed severely affected health status. There was negatively significant relationship found between education and health status in rural and urban women of Bagalkote.

There was significant association found between education and health status of rural and urban women of Bagalkote and Dharwad. A study conducted by Omoyemi *et al.* (2012) results revealed that education level was having direct negatively significant association with perceived health status.

Relationship between health status and occupation of women is represented in Table 7.

In Dharwad, 75 per cent of working women reported moderately affected health status followed by 25 per cent of them had mildly affected health status. Among non-working women, 56.25 per cent of them exhibited moderately affected health status, while 28.12 per cent of the women severely affected and 15 per cent of them mildly affected health status.

Whereas in urban, 60 per cent of working women reported moderately affected health status followed by 28 per cent mildly affected and 12 per cent of them severely affected health status. Among non-working women 53.34 per cent of them reported moderately affected health status, while 33.33 per cent and 13.33 per cent of them had severely and mildly affected health status respectively.

There was negatively significant relationship found between occupation and health status in rural and urban women of Dharwad. In case of Bagalkote, 54.84 per cent of working women reported moderately affected health status followed by 25.81 per cent of them had mildly affected and 19.35 per cent of the women severely affected health status.

Among non-working women, 55.56 per cent of them had moderately affected, while 33.33 per cent and 11.11 per cent of the women indicated severely and mildly affected health status respectively. Whereas in urban, 62.50 per

cent of working women showed moderately affected health status followed by 18.75 per cent of them had mildly as well as severely affected health status. Among non-working women, 66.67 per cent of them reported moderately affected followed by 25 per cent of the women reported severely affected and only 8.33 per cent of them had mildly affected health status.

Table 7: Correlation coefficient between health status and occupation among rural and urban women of Dharwad and Bagalkote (N=160)

Area	Locality	Occupation	N	Health status			Modified χ^2	r-value
				Mildly affected	Moderately affected	Severely affected		
Dharwad (n=80)	Rural (n=40)	Working	8	2 (25.00)	6 (75.00)	-	10.889*	-0.327*
		Non-working	32	5 (15.62)	18 (56.25)	9 (28.12)		
	Urban (n=40)	Working	25	7 (28.00)	15 (60.00)	3 (12.00)	3.985 ^{NS}	-0.295*
		Non-working	15	2 (13.33)	8 (53.34)	5 (33.33)		
Bagalkote (n=80)	Rural (n=40)	Working	31	8 (25.81)	17 (54.84)	6 (19.35)	11.089*	-0.41*
		Non-working	9	1 (11.11)	5 (55.56)	3(33.33)		
	Urban (n=40)	Working	16	3 (18.75)	10 (62.50)	3 (18.75)	6.154*	-0.372*
		Non-working	24	2 (8.33)	16 (66.67)	6 (25.00)		

Figures in the parenthesis indicates percentage

*significant at 0.05 level

NS – Non-significant

There was negatively significant relationship was observed between occupation and health status among rural and urban women of Bagalkote. There was significant association found between health status and occupation among rural and urban women of Bagalkote and rural women of Dharwad. There was non-significant association observed in urban women of Dharwad. The study supported by Keramat *et al.* (2014) found strong association of literacy and occupation with osteoporosis among menopausal women.

Table 8: Inter-correlation among different health status and demographic characteristics of menopausal women of Dharwad and Bagalkot districts(N=160)

	SES	Age	Education	Occupation
Health status	-0.53**	0.24*	-0.41**	-0.21*

*significant at 0.05 level

** significant at 0.01 level

Inter-correlations among components are presented in Table 8. Health status were high negatively significantly related with SES, education and occupation means women belonged to better SES category, literate and working women experienced less health problems compared to women who had poor SES, illiterate and non-working. It also indicated that advance in aging increase of health problems. A study conducted by Amruthavall and Venkataramana (2015) reported that SES of the family plays a important role and it facilitate to access health related facilities. Educated and women who were working exposed to environment which make them lead comfortable life with good health.

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