

Original research article

Epidemiological Profile of Postmenopausal Women: A Cross Sectional Study

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Abstract

Introduction:

Women form the most important part of the family and society, and community health is dependent on the health status of the women. Menopause is biological event occurring in women that indicates the end of reproductive stage to non-reproductive stage. According to WHO, Natural menopause is defined as the permanent cessation of menstruation resulting from the cessation of ovarian follicular activity.

Objectives:

To observe epidemiological profile of post-menopausal women in urban and rural area.

To describe symptomatology of post-menopausal women.

Material & Methods:

A descriptive community based cross-sectional study conducted in the urban and rural field practice area of Prathima Institute of Medical Sciences, Karimnagar for period of 18 months (April 2018 - October 2019). 300 study participants were selected for the study. Women of age group 45-60 years, who attained natural menopause were included and Induced Menopause were excluded from the study.

Results:

Majority of the study population of menopausal women in rural area experienced vasomotor symptoms (65.3%), psychosocial symptoms (82%), physical symptoms (93.3%) and sexual symptoms (27.3%) compared to the menopausal women in urban area, who experienced vasomotor symptoms (52%), psychosocial symptoms (36%), physical symptoms (53.3%) and sexual symptoms (6%). Significant statistical difference was observed between the residing area with the vasomotor symptoms ($p=0.01$), psychosocial symptoms ($p<0.001$), physical symptoms ($p<0.001$) and sexual symptoms ($p<0.001$).

Conclusion:

Majority of the menopausal women experienced mild degree of vasomotor, psychosocial, physical, and sexual symptoms. Vasomotor symptoms were commonly observed in the initial duration after attaining menopause whereas psychosocial, physical, and sexual symptoms were common in the later stages of menopause.

Key words: Postmenopausal women, vasomotor symptoms, psychosocial symptoms, physical symptoms

Introduction

Women form the most important part of the family and society, and community health is dependent on the health status of the women.⁽¹⁾ Menopause is biological event occurring in women that indicates the end of reproductive stage to non-reproductive stage.⁽²⁾ According to WHO, Natural menopause is defined as the permanent cessation of menstruation resulting from the cessation of ovarian follicular activity. Natural menopause is established after 12 consecutive months of amenorrhea. The word "menopause" is derived from the Greek words, "meno" which means month, and "pause" which means to end.⁽³⁾ The age at which the natural menopause occurs is between the ages of 45 and 55 years for women worldwide. The onset of menopause not only marks the end of women's reproductive function but also introduces them to a new phase of life.⁽⁴⁾

According to World Health Statistics 2016, globally the female life expectancy at birth is 73.8 years, while that in developed countries like USA and Great Britain is 79.9 years and 80.2 years respectively. The average life expectancy at birth for females in India is 69.9 years.⁽⁵⁾ The Population Projections Survey in India reveals that the number of women aged 45 years and above is expected to reach 401 million in 2026 from 96 million at present. These huge numbers of women are expected to spend nearly 30 years in a post reproductive period of life.⁽⁶⁾

The average age at menopause ranges from 45 - 53 years both in the developed as well as developing countries.⁽⁷⁻¹⁰⁾ This implies that women now live approximately more than one third of their life after cessation of ovarian function. WHO report shows that during the last decade of the 20th century, 40% of postmenopausal women lived in the world's industrialized regions while 60% lived in developing countries. By the year 2030, however, although overall numbers will have increased, the projected proportion of postmenopausal women living in the industrialized regions will have declined to 24%, and 76% will be living in developing countries.⁽⁴⁾ The proportion of women aged 45-59 years is 15.3 per cent (Sample Registration System 2014) which is a significant proportion of the population.⁽¹¹⁾

In India, however this phase of life is generally ignored, and the women chooses to suffer silently. A woman is given adequate care from teenage till reproduction and over the past decades policy makers have become concerned with the issue of protecting the rights of the senior citizens. However there exists a glaring gap in health issues for women in their forties and fifties or the so called middle- aged women. Menopause does not cause any life-threatening conditions, but it affects the quality of life of the women in the Middle Ages.

Material & Methods:

Objectives:

To observe epidemiological profile of post-menopausal women in urban and rural area.

To describe symptomatology of post-menopausal women.

A descriptive community based cross-sectional study conducted in the urban and rural field practice area of Prathima Institute of Medical Sciences, Karimnagar for period of 18 months (April 2018 - October 2019). 300 study participants were selected for the study. Women of age group 45-60 years, who attained natural menopause were included and Induced Menopause were excluded from the study.

A list of all the houses in the study area were obtained from the household survey registers maintained at the urban and rural health center. Out of the total houses, 300 houses were selected by simple random sampling technique using random number table. Only one woman of age group between 45 - 60 years, who attained natural menopause from each of the selected houses was included in the study. In case if more than one woman was found in the house belonging to the same age group then the women was selected randomly by lottery method. If the selected house was found to be locked or the woman was unavailable due to any reason, then immediate next house was selected. Out of total 300 study participants, 150 were studied in urban slum area and another 150 were studied in rural field practice area. A predesigned and pretested semi structured proforma was used for data collection. The data was collected by verbal interview technique after taking the informed written consent.

Results:

The mean age of the total study population was 54.21 ± 4.02 (SD) years. The mean age of study population in urban area and rural area was 53.45 ± 4.09 (SD) years and 54.97 ± 3.83 (SD) years respectively. Out of total 300 menopausal women surveyed, majority, 120 (40%) were of the age group of 51-55 yrs. Majority of the study population in urban area were of the age group of 51- 55yrs, 58 (38.7%) and in rural area were of the age group of 56-60yrs, 64 (42.7%). Majority were Hindus, 269 (89.7%) both in urban, 124 (82.7%) and rural, 145 (96.7%) areas. it was observed that most of the study population, 181 (60.3%) were illiterates both in urban, 71 (47.3%) and rural, 110 (73.3%) areas. Majority of the study population in urban area were having Primary, 44(29.3%), secondary, 0(6.7%) and Intermediate and above education, 25(16.7%) compared to rural area, 23(15.3%), 7(4.7%) and 10(6.7%) respectively. majority of the study population, 268(89.3%) were housewives both in urban area, 133(88.7%) and rural area, 135(90%). Very few Professionals were in rural area, 1(0.7%) compared to urban area, 8(5.3%) whereas laborers were few in urban area, 7(4.7%) compared to rural area, 11 (7.3%).

The socio- economic status was assessed by modified B.G.Prasad Classification and it was found that out of total 300 menopausal women, majority of the study population belonged to the Class II,89 (29.7%) followed by Class IV, 73(24.3%). Majority of the study population in urban area belonged to Class II, 61(40.7%) whereas in rural area, they belonged to Class IV, 51(34%).

Majority of the study population, 139(46.3%) were having the duration of menopause of 1 - 5 yrs since FMP followed by 112 (37.3%) and 49(16.4%) of 6-10 yrs and >10 yrs respectively. Majority of the study population in urban area were having the duration of 1-5 yrs since FMP, 88 (58.7%) whereas in rural area were having the duration of 6-10 yrs since FMP, 58(38.7%). Majority of the study population, 226 (75.3%) attained natural menopause at the age group of 46-50 yrs followed by 30 (10%) and 38 (12.7%) attained menopause at age above 50 yrs and age group of 41-45 yrs respectively. Very few, 6 (2%) attained natural menopause at the age group of 36- 40 yrs. Majority of the study population attained natural menopause at the age group of 46-50 yrs both in urban area, 116(77.3%) and rural area, 110(73.3%). Mean age at natural menopause of total study participants was found to be 47.93 ± 2.59 (SD) years. The mean age at natural menopause of study population in urban area and rural area was observed to be 48.89 ± 2.18 (SD) years and 46.97 ± 2.63 (SD) years respectively.

out of total study population, the prevalent symptom was tiredness, 180(60%) followed by muscle and joint ache, 178 (59.3%); sweating, 172 (57.3%); decrease in physical strength, 168(56%) and ache behind neck and head, 157 (52.4%). The prevalent symptom in urban area is sleep disturbances, 32 (88%) followed by hot flushes,76 (50.7%) and sweating, 76 (50.7%) whereas in rural area the prevalent symptom is ache behind neck and head, 131 (87.3%)

followed by muscle and joint ache, 128 (85.3%) and decrease in physical strength, 122 (81.3%). Majority of the study population experienced mild symptoms of hot flushes, 138 (46%) and sweating, 141 (47%).

Majority of the study population of menopausal women in rural area experienced vasomotor symptoms (65.3%), psychosocial symptoms (82%), physical symptoms (93.3%) and sexual symptoms (27.3%) compared to the menopausal women in urban area, who experienced vasomotor symptoms (52%), psychosocial symptoms (36%), physical symptoms (53.3%) and sexual symptoms (6%). Significant statistical difference was observed between the residing area with the vasomotor symptoms ($p=0.01$), psychosocial symptoms ($p<0.001$), physical symptoms ($p<0.001$) and sexual symptoms ($p<0.001$). Table 1 describes above symptoms.

Table 1: Menopausal symptoms with rural and urban areas

Menopausal Symptoms		Area of residence		Total	Statistical Significance
		Urban (n=150) (%)	Rural (n=150) (%)		
Vasomotor Symptoms	Yes	78 (52%)	98 (65.3%)	176	$\chi^2 = 5.49$ df=1 p=0.01
	No	72 (48%)	52 (34.7%)	124	
Psychosocial Symptoms	Yes	54 (36%)	123 (82%)	177	$\chi^2 = 65.60$ df=1 p<0.001
	No	96 (64%)	27 (18%)	123	
Physical Symptoms	Yes	80 (53.3%)	140 (93.3%)	220	$\chi^2 = 61.36$ df=1 p<0.001
	No	70 (46.7%)	10 (6.7%)	80	
Sexual Symptoms	Yes	9 (6%)	41 (27.3%)	50	$\chi^2 = 24.58$ df=1 p<0.001
	No	141 (94%)	109 (72.7%)	250	

Discussion:

In the present study, the mean age at natural menopause of total study population was found to be 47.93 ± 2.59 (SD) years and the mean age at natural menopause of study population in urban area and rural area was observed to be 48.89 ± 2.18 (SD) years and 46.97 ± 2.63 (SD) years respectively. This infers that rural woman attained menopause at early age compared to urban women. Findings similar to present study was reported by Kakkar V et al where the average age at menopause amongst the women under study was found to be 48.7 ± 2.3 years.⁽¹²⁾ Similarly, Christian D et al reported mean age of menopause to be 47.74 years.⁽⁹⁾

In contrast to the present study, the mean age at natural menopause was observed to be 47 ± 3.831 years in urban area and 48 ± 3.649 years in rural area in the study conducted by Devi B et al⁽¹³⁾ and Dasgupta et al⁽¹⁴⁾ also observed that rural and urban differences in the age of attaining menopause. Dutta R et al reported the mean age at menopause was 44.49 years⁽¹⁵⁾ which is lower to the mean age at menopause of present study. This might be because of regional, cultural and lifestyle factors.

Mazhar S B et al conducted a cross-sectional study in Islamabad, Pakistan where mean age at menopause was reported to be 48.5 years.⁽¹⁶⁾ Likewise, Ashrafi M et al reported the mean age at natural menopause to be 47.71 years.⁽¹⁷⁾ The similarity in the mean age at natural menopause could be due to similar socio-cultural, racial, genetic, climatic and geographical factors which

India shares with countries like Pakistan, Bangladesh etc. On the contrary, higher age at natural menopause was reported by studies conducted in developed countries such as USA and UK. Bromberger JT et al reported the median age at menopause to be 51.5 years.⁽⁷⁾ Similarly, Gold EB et al reported median age at natural menopause to be 51.4 years.⁽¹⁸⁾ The probable reason for relatively higher age at menopause in developed countries could be contrasting socio-cultural, climatic and geographical factors. Also racial and genetic differences could be a contributing factor in deciding the average age at menopause.

It was observed in the present study that out of total study population, the most prevalent symptoms were tiredness, 180(60%) followed by muscle and joint ache, 178 (59.3%); sweating, 172 (57.3%); decrease in physical strength, 168(56%) and ache in back of neck and head, 157 (52.4%).

Similar findings were observed in a study done by Vijayalakshmi et al in which the most prevalent symptoms were feeling tired (92.90%), followed by headache (88.8%), joint and muscular discomfort (76.20%), physical and mental exhaustion (60.1%), sleeplessness (54.40%).⁽¹⁹⁾

The findings in the present study were similar to a study conducted in Malaysia in which the prevalence of menopausal symptoms were tiredness (79.1%), reduced level of concentration (77.5%), musculo-skeletal aches (70.6%) and backache (67.7%), night sweats (53%), headache (49.4%) and hot flushes (44.8%) were reported.⁽²⁰⁾ However, Rahman SA et al in 2010 reported that the most prevalent symptoms to be joint and muscular discomfort (80.1%); physical and mental exhaustion (67.1%); and sleeping problems (52.2%), hot flushes and sweating (41.6%).⁽²¹⁾

The findings of current study were in accordance with Rahman S et al where he observed the most prevalent symptoms to be feeling tired (92.9%); headache (88.8%); joint and muscular discomfort (76.2%); physical and mental exhaustion (60.9%) and sleeplessness (54.4%) which are followed by depressive mood (37.30%); irritability(36%).⁽²²⁾

Dutta R et al reported that the vasomotor symptoms (60.9%) were the most frequent, followed by sleep related symptoms (40.1%) and anxiety (35.4%).⁽¹⁵⁾

Joshi M and Nair S observed that the pain in hands or legs as the most prevalent symptom (73.6%), followed by anxiety (67.4%), physical and mental exhaustion (66.8%).⁽²³⁾

It was observed in a study conducted by Surender et al that Joint pain (79.2%) was found to have higher prevalence.⁽²⁴⁾

Among the urban and rural study population, it was observed in the present study that the most prevalent symptoms in urban area were sleep disturbances, (88%) followed by hot flushes, (50.7%) and sweating, (50.7%) whereas in rural area the prevalent symptoms were ache in back of neck and head, (87.3%) followed by muscle and joint ache, (85.3%) and decrease in physical strength, (81.3%).

However, Devi B et al in a study observed that menopausal women from the urban area reported symptoms like night sweats (80%), Hot flushes (83%), aches in back of neck or head (93%), Decrease in stamina (98%) and weight gain (70%) whereas menopausal women in rural area reported symptoms like hot flushes (85%), night sweat (75%), aching in muscles and joints (95%), feeling of lack of energy (92%).⁽²⁵⁾

In a study conducted by Sagdeo et al, Joint & muscular discomfort were most prevalent

symptom followed by hot flushes, night sweat and sleep problems both in urban and rural area and the percentage of all menopausal symptoms were more in urban women as compared to rural women.⁽²⁶⁾

Similar study by Avis et al found psychosomatic complaints to be more prevalent in menopausal women. The sexual problems and reproductive health awareness is very less in rural women as compared to urban.⁽²⁷⁾ This finding might be due to more awareness and literacy in urban area.

Severity of menopausal symptoms:

In the current study, with regard to the severity of menopausal symptoms, the most severe symptoms in vasomotor, psychosocial, physical and sexual domains were sweating (3.6%), impatient with other people (2%), muscle and joint ache (21%) and no severe symptoms in sexual domain was observed, while the mild symptoms in these domains were hot flushes(46%), anxiety (32%), tiredness (41.7%) and change in sexual desire (9%) was observed. This might be because of the fluctuating levels of estrogen in the blood during menopausal transition.

In a similar study by Elazim et al, it was observed that the most severe symptoms in vasomotor, psychosocial, physical and sexual domains were, hot flushes (29.2%), experiencing poor memory (48.3%), low backache (41.9%), and change in their sexual desire(36.8%), while the mild symptoms in these domains were sweating (56.3%), feeling anxious or nervous (51.7%), flatulence or gas pains (68.4%) and avoiding intimacy (23%).⁽²⁸⁾

Sociodemographic factors and menopausal symptoms:

In the current study, it was observed that majority of the menopausal women experienced vasomotor symptoms in the age group of 45-50 yrs (82.4%) followed by the age group of 51-55 yrs (57.5%) and the difference was statistically significant ($p < 0.001$). Majority of the women in the age group of 56-60 yrs experienced psychosocial symptoms (68.9%) and physical symptoms (89.6%) followed by 51-55 yrs and 45-50 yrs. Statistical significant difference was observed between the age group and psychosocial symptoms ($p = 0.01$) and physical symptoms ($p < 0.001$) respectively. Most of the menopausal women belonged to the age group of 56 -60 yrs (24.5%) experienced sexual symptoms and the difference was observed to be statistically significant ($p = 0.01$).

The findings were in accordance with the study conducted by Yisma et al in which vasomotor symptom were reported by menopausal women (84 %) majority in the age group of 45-49 yrs.⁽²⁹⁾ Gartoulla P et al in a study observed that there was a high prevalence of moderate to severe vasomotor symptoms even in women aged 60 to 65 years.⁽³⁰⁾ A Cross Sectional Study conducted by Anil K et al reported that symptoms have variable onset in relation to menopause and some women experience menopausal symptoms earlier during perimenopause while some experience them at a later time.⁽³¹⁾ Kathleen Ford et al reported that sexual and vasomotor symptoms are more related to menopause than other symptoms and the frequency of other symptoms increase with increasing age of menopausal women.⁽³²⁾

Jadhav A et al in a study found that the prevalence of all the menopausal symptoms vasomotor (56%), somatic (71.09%), urinary (60.6%) and psychological symptoms (53.9%) was higher in 40 to 45 years of age group.⁽³³⁾ Sagdeo et al in a study observed that the menopausal symptoms are at peak during 45-55 years and after 55 years, severity of menopausal symptoms decreases.⁽³⁴⁾

The current study revealed that majority of the literates (64.7%) perceived vasomotor symptoms compared to the illiterates (54.7%). Psychosocial, physical and sexual symptoms were experienced in majority by illiterates (59.7%), (75.7%), (21.5%) compared to literates (58%), (69.7%), (9.2%) respectively. No significant difference was observed between education and vasomotor, psychosocial and physical symptoms but significant difference was observed with sexual symptoms ($p=0.005$). This shows that educated women perceived vasomotor symptoms early compared to uneducated women. Findings similar to this study was also reported by Kakkar V et al that educated women showed a lower incidence of psychological and somatic symptoms.⁽¹²⁾ Katarzyna et al (2016) conducted a study in Lublin, Poland and observed that respondents with university education had less somatic and vasomotor symptoms.⁽³⁵⁾

It was observed in the present study that most of the working women (68.8%), (75%), (25%) experience vasomotor, psychosocial and sexual symptoms compared to house-wives (57.5%), (57.1%), (15.7%) respectively. However, housewives (74.6%) experienced more physical symptoms compared to working women (62.5%). Statistical significance was observed only with psychosocial symptoms and occupation ($p=0.05$).

Similar to the present study, Kakkar V et al reported that working women suffered more from psychological symptoms whereas nonworking women showed a greater incidence of somatic symptoms.⁽¹²⁾ Aarthi et al also stated that the overall reporting of the symptoms was lesser among the nonworking women (housewives) than among the working women (76 vs 85%).⁽³⁶⁾ This was perhaps because of the stress and the burden faced by the working women in their daily lives.

According to modified B.G.Prasad classification, the current study revealed that majority of the women of Class IV and Class V experienced menopausal symptoms (vasomotor, psychosocial, physical and sexual symptoms) compared to the women of Class I, II and III. Statistical significant difference was observed between socioeconomic status and menopausal symptoms [vasomotor ($p=0.01$), psychosocial ($p<0.001$), physical ($p<0.001$) and sexual ($p=0.03$) symptoms].

In a study done in Aurangabad, it was found that vasomotor symptoms were more in lower socioeconomic class (16.5%) than the upper lower class (11.5%). Somatic and psychological symptoms were also more in lower socioeconomic class than Lower middle and upper lower class.⁽³³⁾

Chowta et al found that the vasomotor symptoms were more common in the lower socioeconomic group and Genitourinary and psychological symptoms were common in the middle socioeconomic group when compared to the lower socioeconomic group.⁽³⁷⁾

Aarthi K et al observed that the high-income group had reported more vasomotor symptoms and the psychological symptoms were reported more (70%) among the low-income group than the high-income group (59%).⁽³⁶⁾ This could be because of the several other stressors which were present in their living environment.

The Study of Women's Health across the Nation (SWAN) results showed that most of the indicators of the low socioeconomic status, particularly the low educational level and the difficulty in paying for the basic necessities, were associated with a significantly increased

reporting of almost all the postmenopausal symptoms.⁽³⁸⁾

Regarding marital status, it was observed in the current study that majority of the married women (59.4%) experienced vasomotor symptoms compared to widowed (42.9%) whereas majority of the widowed [(85.7%), (85.7%) and (100%)] experienced psychosocial, physical and sexual symptoms compared to the married women [(57.7%), (72.7%) and (12.6%) respectively. Significant statistical difference was observed between marital status and psychosocial ($p=0.03$) and sexual symptoms ($p<0.001$) respectively.

Similar were the findings in a study conducted by Jadhav et al, women who were married had more vasomotor symptoms (12.6%) than widowed or divorced (11.1%). The somatic (76.7%) symptoms and urinary symptoms (8.5%) were also more common in married woman. Statistically significant difference was observed between somatic complaints and marital status ($p<0.05$). But the study also found that those women who were either divorced or separated had more (88.9%) psychological complaints than who were married (68.9%) ($p<0.05$).⁽³³⁾

Menopausal symptoms were significantly related to socio demographic characteristics and other health problems and these factors have a direct and modifiable effect on prevalence of menopause related symptoms.⁽³⁹⁾⁽⁴⁰⁾ The factors contributing severity of menopause related symptoms are low income, low educational status, divorce, higher parity, and presence of chronic diseases.⁽⁴¹⁾

In this study, majority of the study population of menopausal women in rural area experienced vasomotor symptoms (65.3%), psychosocial symptoms (82%), physical symptoms (93.3%) and sexual symptoms (27.3%) compared to the menopausal women in urban area, who experienced vasomotor symptoms (52%), psychosocial symptoms (36%), physical symptoms (53.3%) and sexual symptoms (6%). Significant statistical difference was observed between the residing area with the vasomotor symptoms ($p=0.01$), psychosocial symptoms ($p<0.001$), physical symptoms ($p<0.001$) and sexual symptoms ($p<0.001$).

Similarly, in a study done by Doyel and Subha, it was revealed that almost all the menopausal symptoms were significantly higher in the rural population than in the urban population.⁽⁴²⁾ The higher prevalence of the symptoms among the rural women than the urban women was observed because the rural women of this study group were mostly illiterate, so they were less likely to be aware of managing or preventing the menopausal problems compared to urban women.

On the contrary, in the study conducted by Shilpa K and Ugargol AR reported that the prevalence of postmenopausal symptoms are higher in urban women compared to the rural population.⁽⁴³⁾

A study on rural women by Poomalar et al showed that the physical symptoms were more prevalent than the other menopausal symptoms.⁽³⁸⁾

Sevil Hakimi et al found significant differences between the urban and rural women in terms of the severity of physical and psychological symptoms of menopause and the urban women were found to experience the physical and psychological symptoms more commonly and experienced more hot flashes and night sweats compared to the rural women. In terms of sexual symptoms, the urban women reported lower sexual desires compared to the other group.⁽⁴⁴⁾

Bernis et al reported that rural women had significantly higher levels of hot flashes (rural, 56%; semi urban, 43%; urban, 46%; $\chi^2=6.717$, $P=0.035$) or loss of sexual desire (rural, 51%; semi

urban, 44%; urban, 41%; $\chi^2=24.934$, $P=0.001$). Conversely, the urban women were found to suffer more from psychological symptoms in their study.⁽⁴⁵⁾

It was observed in the present study that majority of the study population who had menopause since 1-5 years (79.1%) suffered from vasomotor symptoms compared to only 42.9 % and 36.7% of those who had menopause since 6-10 yrs and >10 yrs respectively. The difference was observed to be statistically significant ($p<0.001$). This signifies that vasomotor symptoms were common in the initial period of menopause.

Freeman et al in a study reported that the median duration of moderate/severe hot flushes was 10.2 years.⁽⁴⁶⁾ The median total vasomotor symptom duration was observed to be 7.4 years in a study conducted by Avis et al.⁽⁴⁷⁾

In the current study, it was observed that majority of the study population who had menopause more than 10 yrs (73.5%) experienced psychosocial symptoms compared to only 64.3 % and 49.6 % of those who had menopause since 6-10 yrs and 1-5 yrs respectively. The difference was observed to be statistically significant ($p<0.005$).

The present study also revealed that majority of the study population who had menopause since more than 10 yrs (89.8%) experienced physical symptoms compared to only 83.9% and 59% of those who had menopause since 6 -10 yrs and 1-5 yrs respectively. The difference was observed to be statistically significant ($p<0.001$).

In contrast to the present study, Liu et al in a study observed that physical symptoms occur in women within the first five years of menopause.⁽⁴⁸⁾

A study conducted in an urban population in West Bengal shows that as age since menopause increases, vasomotor symptoms decrease, while physical and psychosocial symptoms increase.⁽⁴⁹⁾ This is also consistent with a study conducted Shukla et al in Gujarat.⁽⁵⁰⁾

It was observed in the present study that majority of the study population who had menopause from more than 10 yrs (40.8 %) experienced sexual symptoms compared to only 17 % and 7.9 % of those who had menopause since 6-10 yrs and 1-5 yrs respectively. The difference was observed to be statistically significant ($p<0.001$).

It is similar to the study by Dennerstein et al, where 31% of respondents reported a decrease in sexual activity with nearly two-third reported no change in sexual symptoms after attaining menopause.⁽⁵¹⁾ However, in a study conducted by Omidvar et al, 70.3% of subjects reported a decrease in sexual activity after menopause.⁽⁵²⁾ The reason for the difference from present study may be related to the age range of the study population.

Conclusion:

the most prevalent menopausal symptom reported was tiredness whereas in urban area and rural area, the most prevalent menopausal symptom reported were sleep disturbances and aches behind neck and head respectively. Majority of the menopausal women experienced mild degree of vasomotor, psychosocial, physical, and sexual symptoms. Vasomotor symptoms were commonly observed in the initial duration after attaining menopause whereas psychosocial, physical, and sexual symptoms were common in the later stages of menopause.

References:

1. Forouhari S, Khajehei M, Moattari M, Mohit M, Rad MS, Ghaem H. The effect of education and awareness on the Quality-of-Life in postmenopausal women. *Indian J Community Med.* 2010 Jan 1;35(1):109–14.
2. Bener A, Falah A. A measurement-specific quality-of-life satisfaction during premenopause, perimenopause and postmenopause in Arabian Qatari women. *J Midlife Health.* 2014;5(3):126.
3. Paulose B, Kamath N. Quality of Life of Postmenopausal Women in Urban and Rural Communities. *J Menopausal Med.* 2018;24(2):87.
4. Research on the menopause in the 1990s. Report of a WHO Scientific Group. *World Health Organ Tech Rep Ser.* 1996;
5. WHO | World Health Statistics 2016: Monitoring health for the SDGs. WHO. 2017;
6. Gov.in/Data_Products/Library/Provisional_Population. Population Projections for India and States 2001-2026. New Delhi; 2006.
7. Bromberger JT, Matthews KA, Kuller LH, Wing RR, Meilahn EN, Plantinga P. Prospective study of the determinants of age at menopause. *Am J Epidemiol.* 1997;145(2):124–33.
8. Tasnim S, Haque MA, Nazmeen S. Experience of menopause and menopausal transition among middle aged women attending a periurban hospital. *Bangladesh J Obstet Gynecol.* 2016;31(1):10–5.
9. Christian D, Kathad M, Bhavsar B. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF POST-MENOPAUSAL WOMEN OF RURAL AREA OF VADODARA DISTRICT, GUJARAT. Vol. 2, *National Journal of Community Medicine.*
10. Abdullah B, Moize B, Ismail BA, Zamri M, Farhah N, Nasir M. Prevalence of menopausal symptoms, its effect on quality of life among Malaysian women and their treatment seeking behaviour. 2017;72(2):94–9.
11. 2014 BS. Sample Registration System Baseline Survey 2014. *Regist Gen India.* 2014;22.
12. Kakkar V, Kaur D, Chopra K, Kaur A, Kaur IP. Assessment of the variation in menopausal symptoms with age, education and working/non-working status in north-Indian sub population using menopause rating scale (MRS). *Maturitas.* 2007 Jul 20;57(3):306–14.
13. Devi B, Karki P, Chhetry R, Sharma N, Niroula M, Lepcha PC, et al. Quality of life of post-menopausal women residing in rural and urban areas of Sikkim, India. *Int J Reprod Contraception, Obstet Gynecol.* 2018;7(12):5125.
14. Ray S, Dasgupta D. Menopausal Problems Among Rural and Urban Women From Eastern India. *J Soc Behav Heal Sci.* 2009;3(1):20–33.
15. Dutta R, Dcruze L, Anuradha R, Rao S RM. A population based study on the menopausal symptoms in a rural area of Tamil nadu, India. *J Clin diagnostic Res.* 2012;6(4):597–601.
16. Batool Mazhar S, Rasheed S. Menopause Rating Scale (MRS) Syeda Batool Mazhar and Sabeena Rasheed *Ann. Vol. 5, Pak. Inst. Med. Sci.* 2009.
17. Ashrafi M, Kazemi Ashtiani S, Malekzadeh F, Amirchaghmaghi E, Kashfi F, Eshrati B, et al. Symptoms of natural menopause among Iranian women living in Tehran, Iran. Vol. 8, *Iranian Journal of Reproductive Medicine.* 2010.
18. Gold EB, Bromberger J, Crawford S, Samuels S, Greendale GA, Harlow SD, et al. Factors associated with age at natural menopause in a multiethnic sample of midlife women. *Am J Epidemiol.* 2001 May 1;153(9):865–74.
19. Vijayalakshmi S, Chandrababu R EVL. Menopausal transition among Northern Indian women. *Nitte Univ J Heal Sci.* 2013;3(2):73–9.
20. Sharma S, Mahajan N. Menopausal symptoms and its effect on quality of life in urban versus rural women : A cross-sectional study. 2017;6(1):16–20.
21. Rahman S, Zainudin S, Mun V. Assessment of menopausal symptoms using modified Menopause Rating Scale (MRS) among middle age women in Kuching, Sarawak, Malaysia. *Asia Pac Fam Med.* 2010;9(1):5.

22. Rahman S, Salehin F, Iqbal A. Menopausal symptoms assessment among middle age women in Kushtia, Bangladesh. *BMC Res Notes*. 2011;4.
23. Joshi M, Nair S. Epidemiological Study to Assess the Menopausal Problems during Menopausal Transition in Middle Age Women of Vadodara, Gujarat, India Mital. *Indian J Obstet Gynaecol Res*. 2015;2(3):163–8.
24. Surendar R, Durgapriya G, Arthi M, Srikanth S. Quality of life among post - menopausal women in rural Puducherry. 2019;6(3):112–8.
25. Devi B, Karki P, Chhetry R, Sharma N, Niroula M, Lepcha PC, et al. Quality of life of post-menopausal women residing in rural and urban areas of Sikkim, India. *Int J Reprod Contraception, Obstet Gynecol*. 2018;7(12):5125.
26. Salve KP, Sagdeo MM, Arora D. Menopausal Symptoms:A Comparative Study in Rural and Urban Women. *JK Sci [Internet]*. 2011 [cited 2019 Oct 15];13(1):23–6. Available from: www.jkscience.org
27. N.E. A, R. S, S. C, J. B, P. G, V. C, et al. Is there a menopausal syndrome? Menopausal status and symptoms across racial/ethnic groups. *Soc Sci Med [Internet]*.2001 [cited 2019 Oct 15];52(3):345–56. Available from: [http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L30979056%5Cnhttp://dx.doi.org/10.1016/S0277-9536\(00\)00147-7%5Cnhttp://rug.on.worldcat.org/atoztitles/link/?sid=EMBASE&issn=02779536&id=doi:10.1016%2FS0277-9536%2800%2900147-7&atitle](http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L30979056%5Cnhttp://dx.doi.org/10.1016/S0277-9536(00)00147-7%5Cnhttp://rug.on.worldcat.org/atoztitles/link/?sid=EMBASE&issn=02779536&id=doi:10.1016%2FS0277-9536%2800%2900147-7&atitle)
28. Elazim HA, Lamadah SM, Al Zamil LG. Quality of life among of menopausal women in Saudi Arabia. *Jordan Med J [Internet]*. 2014;48(4):227–42. Available from: www.iiste.org
29. Yisma E, Eshetu N, Ly S, Dessalegn B. Prevalence and severity of menopause symptoms among perimenopausal and postmenopausal women aged 30- 49 years in Gulele sub-city of Addis Ababa, Ethiopia. *BMC Womens Health*. 2017 Dec 8;17(1):124
30. Gartoulla P, Worsley R, Bell RJ DS. Moderate to severe vasomotor and sexual symptoms remain problematic for women aged 60 to 65 years. *Menopause*. 2015;22:694–701.
31. Agarwal AK, Kiron N, Gupta R, Sengar A. A Cross Sectional Study for Assessment of Menopausal Symptoms and Coping Strategies among the Women of 40-60 Years Age Group Attending Outpatient Clinic of Gynaecology. *Int J Med Public Heal [Internet]*. 2019 [cited 2019 Oct 21];9(1):13–9. Available from: www.ijmedph.org%7Cwww.journalonweb.com/ijmedphhttp://www.ijmedph.org/v9/i1
32. Ford K, Sowers MF, Crutchfield M, Wilson A, Jannausch M. A longitudinal study of the predictors of prevalence and severity of symptoms commonly associated with menopause. *Menopause*. 2005;12(3):308–17.
33. Jadhav A, Bavaskar Y. An epidemiological study of the perimenopausal and menopausal health problems in women living in an urban area of Mumbai, Maharashtra. *Int J Community Med Public Heal*. 2017 Aug 23;4(9):3088.
34. Salve KP, Sagdeo MM, Arora D. Menopausal Symptoms:A Comparative Study in Rural and Urban Women. *JK Sci [Internet]*. 2011 [cited 2019 Oct 15];13(1):23–6. Available from: www.jkscience.org
35. Kanadys K, Wiktor-Stoma A, Lewicka M, Sulima M, Wiktor H. Predictors of the quality of life of women in peri-menopausal period. *Ann Agric Environ Med*. 2016;23(4):641–8.
36. Aarti K. Age of Menopause and Menopausal Symptoms among Urban Women in Pune , Maharashtra. *J Obstet Gynecol India*. 2011;(June):323–6.
37. K CN, N CM. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH Comparative Study Of Menopausal Symptoms In Post Menopausal And Perimenopausal Women [Internet]. *Journal of Clinical and Diagnostic Research*. 2008 [cited 2019 Oct21]. Availablefrom:http://www.jcdr.net/back_issues.asp?issn=0973709x&year=2008&month=
38. Poomalar GK, Arounassalame B. The quality of life during and after menopause among

- rural women. *J Clin Diagnostic Res.* 2013 Jan 1;7(1):135–9.
39. Li C, Samsioe G, Borgfeldt C, Lidfeldt J, Agardh CD, Nerbrand C. Menopause- related symptoms: What are the background factors? A prospective population- based cohort study of Swedish women (the Women’s Health in Lund Area study). *Am J Obstet Gynecol.* 2003;189(6):1646–53.
 40. Ishizuka B, Kudo Y, Tango T. Cross-sectional community survey of menopause symptoms among Japanese women. *Maturitas* [Internet]. 2008 Nov 20 [cited 2019 Oct 22];61(3):260–7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/18799275>
 41. Li L, Wu J, Pu D, Zhao Y, Wan C, Sun L, et al. Factors associated with the age of natural menopause and menopausal symptoms in Chinese women. *Maturitas* [Internet]. 2012 Dec [cited 2019 Oct 22];73(4):354–60. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/23026018>
 42. Ray S, Dasgupta D. Menopausal Problems Among Rural and Urban Women From Eastern India. *J Soc Behav Heal Sci.* 2009;3(1):20–33.
 43. K Shilpa U. AR. A comparative study on postmenopausal symptoms in rural and urban women. *Int J Community Med Public Heal* [Internet]. 2015 [cited 2019 Oct 22];2(4):604–9. Available from: <http://www.ijcmph.com>
 45. Hakimi S, Haggi HB, Shojai SK, Farahbakhsh M, Farhan F. Comparing the Pattern of Menopausal Symptoms, Concern and Attitudes in Urban and Rural Postmenopausal Iranian Women. *J Menopausal Med.* 2018;24(1):50.
 46. Bernis C, Reher DS. Environmental contexts of menopause in Spain: comparative results from recent research. *Menopause* [Internet]. [cited 2019 Oct 21];14(4):777–87. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17679148>
 47. Freeman EW, Sammel MD, Lin H, Liu Z, Gracia CR. Duration of Menopausal Hot Flashes and Associated Risk Factors. *Obs Gynecol.* 2011;117(5):1095–104.
 48. Avis NE, Crawford SL, Greendale G, Bromberger JT, Everson-Rose SA, Gold EB, et al. Duration of menopausal vasomotor symptoms over the menopause transition. *JAMA Intern Med.* 2015 Apr 1;175(4):531–9.
 49. Liu K, He L, Tang X, Wang J, Li N, Wu Y, et al. Relationship between menopause and health-related quality of life in middle-aged Chinese women: A cross- sectional study. *BMC Womens Health.* 2014 Jan 10;14(1).
 50. Som N, Ray S. Menopause-specific quality of life of urban women in West Bengal, India. *Menopause Int.* 2012 Sep;18(3):99–105.
 51. Shukla R, Ganjiwale J, Patel R. Prevalence of Postmenopausal Symptoms, Its Effect on Quality of Life and Coping in Rural Couple. *J Mid-life Heal* [Internet]. 2018 [cited 2019 Sep 30];9(1):14–20. Available from: <http://www.jmidlifehealth.org>
 53. Dennerstein L. Well-being, symptoms and the menopausal transition. *Maturitas* [Internet]. 1996 Mar [cited 2019 Oct 22];23(2):147–57. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/8735353>
 54. Omidvar S, Amiri F, Bakouie F. Sexual function among married menopausal women in Amol (Iran). *J Midlife Health.* 2011;2(2):77.