

# A Population Based Study on the Menopausal Symptoms in a Rural Area of Tamil Nadu, India

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## ABSTRACT

**Context:** Menopause, a natural step in the aging process, represents the end of menstruation after the last menstrual period in the previous 12 months. It occurs gradually in women and it indicates the transition from the reproductive to the post-productive era of a women's life. It is a condition which every woman faces in later life and it can have many associated effects which may disrupt the quality of life [1].

**Aims:** (1) To estimate the prevalence of the following menopausal symptoms: (a) Vasomotor symptoms – hot flushes and sweating (b) Psychological symptoms – depressive mood, anxiety, irritability and sleep related symptoms (c) Urinary symptoms – burning sensation, difficulty in holding urine, increased frequency of urination (d) Joint pain. (2) To assess the extent of the treatment which was availed to treat the menopausal symptoms.

**Settings and Design:** The rural population in the Poonamallee block of the Tiruvallur district of Tamilnadu; a cross sectional study.

**Methods and Materials:** This study was conducted on a rural population in the Poonamallee block of the Tiruvallur district in Tamilnadu. The study population included all the women who had attained natural menopause and those who had their last menstrual bleeding at least one year prior to the data collection. The cluster sampling method was adopted and 30 clusters were randomly selected by the Probability Proportionate to Size (PPS) method. A structured questionnaire was used to collect the information regarding the background characteristics, the obstetrical history, the menopausal history and the menopausal symptoms of the women.

**Statistical Analysis:** The data entry and analysis was done by using the statistical package for social sciences (SPSS), version

15 software. The descriptive statistics were calculated for the background variables and for the prevalence of the selected post-menopausal symptoms. Also, a 95% confidence interval was calculated for the prevalence of the post-menopausal symptoms.

**Results:** A total of 780 post-menopausal women were enrolled in the study. The mean age of the study participants was 50.20 years. The mean age at menopause was 44.49 years and median age was 44 years. The overall prevalence of any one symptom during the post-menopausal period among the study participants was 88.1% (95%CI: 85.8-90.3). Among the post-menopausal symptoms, the most frequently reported ones were vasomotor symptoms (60.9%), followed by sleep related symptoms (40.1%) and anxiety (35.4%). Only 46% of the post-menopausal women who had any one symptom had taken treatment. The reasons for not taking treatment for the menopausal symptoms among the study participants were mainly their financial constraints (56.1%) and family problems (35.2%).

**Conclusion:** Menopause, an important stage within the continuum of the health in a women's life, has gained a lot of attention since the last century. It is more so in the light of the increasing longevity of women in the present years. In this study, a majority of the women (88.1%) reported one or more post-menopausal symptom. The presence of post-menopausal symptoms may decrease the health related quality of life in women, because a majority of them still do not take any treatment for these symptoms. The health care services should pay more attention towards the women's health in the post-menopausal period also and the use of appropriate therapy like hormone replacement therapy should be encouraged whenever required.

**Key Words:** Menopause, Post-menopausal symptoms, Hormone replacement therapy

## INTRODUCTION

Menopause, a natural step in the aging process, represents the end of menstruation after the last menstrual period in the previous 12 months. It occurs gradually in women and it indicates the transition from the reproductive to the post-productive era of a women's life. It is a condition which every woman faces in later life and it can have many associated effects which may disrupt the quality of life [1]. The main reason for the climacteric problems and menopause is the end of the ovarian function. The ovary is the only endocrine gland that stops functioning before the final stages of life. The root of this natural transformation lies in the biological structure of women; yet it produces a wide range of effects on a woman's behaviour

and psyche, resulting in extremely unpleasant symptoms. The age at which natural menopause occurs is between the ages of 45 and 55 years for women worldwide [2].

In our health system, women of the reproductive age group are given more importance. The post-menopausal women (>45 years) in both the urban and the rural areas are neglected. Therefore, in this study, the most common post-menopausal symptoms, namely the vasomotor, psychological and the urinary symptoms which occur in the post-menopausal women, have been stressed on. In the northern parts of India, some population based studies have been done in the rural areas on the post-menopausal symptoms, but in southern India, no such studies have been done in the rural areas.

## MATERIALS AND METHODS

The present study was a community based, cross sectional study which was conducted on a rural population in the Poonamallee block of the Tiruvallur district in Tamilnadu from March 2010 to July 2010. Ethical clearance was obtained. The Poonamallee block comprises 160 villages with a population of 172300 people in 34460 households.

**Inclusion Criteria:** The study population included all the women who had attained natural menopause and who had their last menstrual bleeding at least one year prior to the data collection.

**Exclusion Criteria:** Women who were in the transitional period of attaining menopause and those who had undergone hysterectomy due to any cause were excluded from the study.

**Sampling Method:** The cluster sampling method was adopted and 30 clusters were randomly selected by the Probability Proportionate to Size (PPS) method in the manner which has been described below.

**Sample size:** Based on the anticipated prevalence of hot flushes among the menopausal women an important morbidity of 50%, with an alpha error of 0.05, a limit of accuracy of 10 % and a design effect of 2, the minimum sample size which was required for the study was found to be 769. The sampling interval which worked out was 25.63. Accordingly, 26 post-menopausal women were selected from each cluster. The final sample size which was arrived at was 780.

**Data collection:** A structured questionnaire was developed in the local language to collect information such as the background characteristics, the obstetrical history, the menopausal history, and the menopausal symptoms of the women. Women who reported

at least one post-menopausal symptom were further enquired about the treatment which was taken for it. If they had not sought care for their post-menopausal symptom/symptoms, the reason for not seeking the care was asked. A written informed consent was also obtained prior to the interview.

## Data Compilation and Analysis

The data entry and analysis were done by using the statistical package for social sciences (SPSS), version 15 software. The descriptive statistics were calculated for the background variables and for the prevalence of the selected post-menopausal symptoms. Also, a 95% confidence interval was calculated for the prevalence of the post-menopausal symptoms.

## RESULTS

A total of 780 post-menopausal women were enrolled in the study. The mean age of the study participants was 50.20 years. In this study, 706 (90.5%) women were between the ages of 45-55 years. The study population was mostly from the lower strata of society [566 (72.6%)] and only 3(0.4%) women were from the upper strata. A majority of the women were married 672 (86.2%). The mean age at menopause was 44.49 years and the median age was 44 years.

**Prevalence of the Post-menopausal symptoms:** The prevalence of the different post-menopausal symptoms among the study participants has been presented in [Table/Fig-1].

**Treatment which was availed for the menopausal symptoms:** The particulars of the treatment which was availed for the menopausal symptoms among the study participants have been presented in [Table/Fig-2].

**Reasons for not taking the treatment:** The reasons for not taking treatment for the menopausal symptoms among the study participants were mainly their financial constraints (56.1%) and family problems (35.2%).

## DISCUSSION

In the current study, the age of the participants ranged from 40 to 58 years, with a mean age of 50.2 years and a median age of 50 years. In Jahanfar SH et al's [1] study, the mean age of the study participants was 51.2 years and the median age was 51 years, which were comparable to those in the current study. A study which was done by A. Singh et al [3] in Chandigarh, India, involved post-menopausal women who were aged between 35 and 55 years. Another study by Sharda Sidhu et al [2] in Punjab, included post-menopausal women who were aged between 40 and 50 years. In a study which was done in China by Yang D et al [4], the participants were aged between 40 and 65 years.

| No. | Post menopausal symptoms       | Total no of participant (N=780) | Prevalence (%) | 95% C I   |
|-----|--------------------------------|---------------------------------|----------------|-----------|
| 1.  | Vasomotor symptoms             | 475                             | 60.9           | 57.4-64.3 |
| 2.  | Depressive mood                | 193                             | 24.7           | 21.6-27.7 |
| 3.  | Anxiety                        | 276                             | 35.4           | 32.1-38.7 |
| 4.  | Irritability                   | 71                              | 9.1            | 7.0-11.1  |
| 5.  | Sleep related symptoms         | 313                             | 40.1           | 36.6-43.5 |
| 6.  | Urinary symptoms               | 91                              | 11.7           | 9.4-13.9  |
| 7.  | Joint pain                     | 156                             | 20             | 17.1-22.8 |
| 8.  | Any one postmenopausal symptom | 687                             | 88.1           | 85.8-90.3 |

[Table/Fig -1]: Prevalence of post menopausal symptoms

| No | Menopausal symptoms    | Total no. of women (N=780) | Sought health care | Self medication | Consulted by doctor | Did not seek health care |
|----|------------------------|----------------------------|--------------------|-----------------|---------------------|--------------------------|
| 1. | Vasomotor symptoms     | 475                        | 23 (4.85%)         | 0(0%)           | 23 (100%)           | 452                      |
| 2. | Depressive mood        | 193                        | 9 (4.66%)          | 1 (11.12%)      | 8 (88.88%)          | 184                      |
| 3. | anxiety                | 276                        | 96 (34.78%)        | 16 (16.67%)     | 80 (83.33%)         | 180                      |
| 4. | Irritability           | 71                         | 4 (5.64%)          | 0 (0%)          | 4 (100%)            | 67                       |
| 5. | Sleep related symptoms | 313                        | 76 (24.28%)        | 51 (67.11%)     | 25 (32.89%)         | 237                      |
| 6. | Urinary symptoms       | 91                         | 54 (59.35%)        | 9 (16.66%)      | 45 (83.34%)         | 37                       |
| 7. | Joint pain             | 156                        | 112 (71.79%)       | 64 (57.14%)     | 48 (42.86%)         | 44                       |
| 8. | Any one symptom        | 687                        | 316 (46%)          | 141 (44.6%)     | 175 (55.3%)         | 371 (54%)                |

[Table/Fig-2]: Treatment availed for menopausal symptoms

In the present study, the age at menopause ranged from 38-52 years, with the mean and median ages at menopause being 44.5 years and 44 years respectively. Only 10% women attained menopause at ages which were less than 40 years, while 48.8% women attained menopause after the age of 45 years. A study which was done in south east Nigeria by U.M. Agwu et al [5] reported the median age at menopause to be 47 years. Another study which was done by A Singh et al [3] in Chandigarh, India, reported the mean age at menopause as 44.1 years.

In the current study, the overall prevalence of any one post-menopausal symptom was 88.1%. In a study which was conducted by Waidyasekera H et al [6] in Sri Lanka, the prevalence of any one symptom during the post-menopausal period was 90%. This prevalence was comparable to that of the present study. All other literature which were reviewed have not discussed the prevalence of any one post-menopausal symptom.

**Vasomotor symptoms:** The overall prevalence of the vasomotor symptoms among the post-menopausal women (combined hot flushes and night sweats) in the present study was 60.9%.

Studies which were done by E. W. Freeman et al [7] have reported that the prevalence of the combined hot flushes and night sweats in the north American region was the lowest among women of Japanese ethnicity (18%), with the prevalence increasing among the Chinese (21%), the Caucasians (31%), the Hispanics (35%), and the African-American women (46%). In another study which was done by Jahanfar et al [1] in Malaysia, the prevalence of the vasomotor symptoms was reported to be 67.1%.

A study which was done in Punjab by Sharda Sidhu et al [2] observed that the prevalence of the vasomotor symptoms was 55.08%. According to Shaw, the prevalence of the vasomotor symptoms was up to 85%, which was much higher than the prevalence in the current study [8]. The vasomotor symptoms showed variability among different cultures. Other studies have discussed about hot flushes and night sweats separately, but not combination with the vasomotor symptoms. The prevalence of hot flushes and night sweats varies widely among women of different geographical regions and also ethnicity. These differences may be due to the influence of a range of factors, including climate, diet, lifestyle, women's roles, and their attitudes regarding the end of the reproductive life and age.

**Depressive Mood:** In the present study, 193 women (24.7%) reported having symptoms of depressive mood. The estimate of the current study was much less as compared to those of the other studies which were reviewed; 55.2% women were reported to have depressive mood in Latin America and Ecuador in Peter Chedraui et al studies [9], Jahanfar SH et al [1] studies in Malaysia reported 62.8% women with depressive mood and Israt Hafiz, et al's [10] study in Australia reported 37% women with depressive mood. However, the prevalence of depressive moods in the present study was more (24.7%) as compared to that in a study which was done by Sharda Sidhu et al [2] in Amritsar, Punjab, who reported the prevalence of depressive mood to be 8.20%. Similarly, the estimate of the present study was more as compared to 10.6% women in S. Kaur et al's [11] study in Chandigarh and 13.8% women in A. Singh et al [3] study in Chandigarh, India. The above difference in the prevalence may be due to family problems like alcohol abuse by the husbands, negligence by the family members, children not being settled in life and monetary problems like lack of savings,

poverty, etc. which were commonly seen in the present study. These differences may be due to the economic status or other social factors which indirectly affected the health of the post-menopausal women.

**Anxiety:** In the present study, the prevalence of anxiety among the post-menopausal women was 35.4%. A study done which was in Australia by Israt Hafiz et al [10] reported the prevalence of anxiety among the post-menopausal women to be 32.8%, which was comparable to that in the present study. In a study which was done by Jahanfar et al in Malaysia, the prevalence of anxiety was reported to be 71.4% [1]. A study which was conducted by Sharda Sidhu et al [2] in Amritsar, Punjab, India, showed the prevalence of anxiety to be 22.26%. Another study which was done by A. Singh et al [3] in Chandigarh, India reported a high level of anxiety (69.7%). These differences may be due to the economic status or other social factors of the post-menopausal women which indirectly affected their health.

**Irritability:** It was found in the present study, that 9.1% of the post-menopausal women had irritability. In a study which was done by U.M. Agwu et al [5] in Abakaliki, Nigeria, the prevalence of irritability was reported as 24.2%. In a study which was conducted by Peter Chedraui et al [9] in Latin America, the prevalence of irritability was reported as 51.6% and another study which was done by Jahanfar et al [1] in Malaysia reported the prevalence of irritability to be very high (65.7%). In a study which was done by Sharda Sidhu et al [2] in Amritsar, Punjab, the prevalence of irritability during the post-menopausal period was found to be 35.15%. As per the study which was done by A. Singh et al [3] in Chandigarh, India, the prevalence of irritability was found to be low (6.5%) as compared to that in the present study. In both these studies, the method of assessment of irritability has not been described. In the present study, irritability was assessed by the method which was used by Jahanfar et al [1].

**Sleep related symptoms:** Among the 780 post-menopausal women who were studied, the prevalence of sleep related symptoms was 40.1%. In a study which was conducted in Latin America by Peter Chedraui et al [9], the prevalence of sleep related symptoms was reported as 68.4% and another study which was done by Jahanfar et al [1] in Malaysia reported the prevalence of sleep related symptoms was as 64.35%. In a study which was conducted by Israt Hafiz et al [10] in Australia, the prevalence of sleep related symptoms was reported to be 33.7%. In a study which was done in Chandigarh, India, by A Singh et al [3], sleep related symptoms were noted in 36.8% women. In another study which was done by Sharda Sidhu et al [2] in Punjab, India, the prevalence of sleep disturbance was reported as 53.12%. In a study which was conducted by S. Kaur et al [11] in Chandigarh, India, the prevalence of sleep related symptoms was reported as 18.8%.

This evidence clearly shows that the experience of menopause and the attribution of the symptoms during the post-menopausal period varied in women of the same ethnic origin, depending on their country of residence. The effect of environmental and socio cultural factors such as diet, exercise and other life style modifications on the determination of the sleep related symptoms and on the severity of the symptoms cannot be denied [1].

**Urinary symptoms:** The prevalence of urinary symptoms among the post-menopausal symptoms was found to be 11.7% in this study. Symptoms of increased frequency of urination were seen in



5.8% of the post-menopausal women and symptoms of difficulty in holding urine were reported by 7.9% of the post-menopausal women. In a study which was conducted by Mahnaz Ashrafi et al [12] in Iran, the prevalence of the urinary symptoms was reported to be 17.4%. In a study which was done by Israt Hafiz et al [10] in Australia, the prevalence of the symptoms of increased frequency of urination was found to be 35.2% and that of the symptoms of difficulty in holding urine was found to be 36.7%. Another study which was done by U. M. Agwu et al [5] in Nigeria, reported the prevalence of increased frequency of urination to be high (38.7%). In a study which was conducted by A. Singh et al [3] in Chandigarh, India, the prevalence of the urinary symptoms was reported as 15.7%. In a study which was done by S. Kaur et al [11] in Chandigarh, India, the prevalence of the urinary symptoms was reported as 10.6%, which was comparable to that in the present study. The difference which was observed between the areas and regions may be due to the women's attitude towards health and the related behaviour.

## JOINT PAIN

In the current study, symptoms of joint pain were reported by 20% of the post-menopausal women. In a study which was done by U.M. Agwu et al [5] in Nigeria, the prevalence of joint pain was reported as 25.8%. According to a study which was done by A. Singh et al [3] Chandigarh, India, joint pain was noted in 9.2% of the post-menopausal women, which was a low prevalence as compared to that which was found in the present study. This difference could may be due to variations in the food patterns and the amount of physical activities in different communities.

**The treatment which was availed for the menopausal symptoms:** In the present study, out of the 780 study participants, 88.1% of the post-menopausal women were found to experience only any one symptom. Out of them, 46% of the women had taken treatment for the post-menopausal symptoms, which was in the form of anti-depressants, anti anxiety drugs and analgesics. Apart from this, as far as hormonal replacement therapy was concerned, in the present study, none of the respondents reported the use of hormonal replacement therapy. A similar finding was reported in a study which was done by A. Singh et al [3] in India. This was in stark contrast to the findings in developed countries where hormonal replacement therapy was being widely prescribed [13]. A study which was done by Jahanfar et al [1] in Malaysia, reported that 11.4% of the post-menopausal women had taken hormonal replacement therapy.

The awareness of hormonal replacement therapy among the study population was extremely low; only 3.2% of the women had heard of this before and these were women with high education. This finding was similar to that of another study which was done by U. M. Agwu et al on rural African communities [5]. This finding was contrary to that of a study which was done on post-menopausal women in Egypt, who either used hormonal replacement therapy rarely or were not willing to use it, reporting it as unnecessary, as was reviewed by U.M. Agwu et al [5]. The use of hormonal replacement therapy may help in dealing with the depressive mood and the vasomotor symptoms. The alternate modalities which were used by the participants of the present study to alleviate their symptoms were biologically-based therapies, such as botanical medicines, dietary supplements, vitamins, minerals, etc.

Some women had not sought health care for the remaining symptoms such as anxiety, sleep related symptoms, urinary symptoms and joint pain, may be due to personal problems like lack of support, poverty, family tension, lack of awareness of the consequences, etc. The women who had not availed any treatment for these symptoms at all, thought that they were normal during the post-menopausal period.

## CONCLUSIONS

Menopause, an important stage within the continuum of the health in a woman's life, has gained a lot of attention since the last century. It is more so in the light of the increasing longevity of women in the present years. Therefore, this study was undertaken. In this study, a majority of the women (88.1%) reported one or more post-menopausal symptom. The presence of post-menopausal symptoms may decrease the health related quality of life in women, because a majority of them still do not take any treatment for these symptoms.

The health care services should pay more attention towards the women's health in the post-menopausal period also. Each woman should talk to her physician in order to decide on how to manage her menopause in the best way. Advice regarding healthy eating and life style changes must be provided and the importance of physical exercise must be stressed upon. Family support should be ensured by creating awareness in the rural community as a whole. The use of appropriate therapy should be encouraged, whenever required. All these require intensive health education for women who are in the post-menopausal phase of their lives, for their family and for the community at large.

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