

# PREVALENCE OF MUSCULOSKELETAL CHANGES IN POST MENOPAUSAL WOMENS

<sup>1</sup>S.Karthika Lakshmi,  
<sup>2</sup>Kiruthika - MPT(Neuro) Tutor,  
<sup>3</sup>Rekha - MPT (Cardio) Associate Professor,  
<sup>4</sup>Manoj Abhrahem – PhD, Principal  
Saveetha college of Physiotherapy

## Abstract

### Introduction

Menopause is a normal natural event defined as the final menstrual period. It represents permanent cessation of menses resulting from loss of ovarian follicular functioning due to aging. The age of menopause varied from a lowest of 37.48 years to highest of 53.59 years, with a mean age at menopause being 47.91 years ( $\pm$  3.16). Even in well developed countries women musculoskeletal disorders are common after menopause.

### Background of the study

Musculoskeletal system plays a vital role in day today activities it comprises of all joints ligaments muscles and bones of body. After menopause, almost all system of the body undergoes changes; musculoskeletal change in post-menopausal women's is found using menopause rating scale and Nordic questionnaire.

### Methodology

This study was conducted to find the prevalence of musculoskeletal changes in women's after menopause and it was conducted in Kuthampakam a small village at Chennai. There were nearly 634 participated and from them 167 post-menopausal women were included in this study. They were explained each question from menopause rating scale and NORDIC questionnaire and were noted by experienced therapist. From the noted values analysis were made.

### Result

Based on the calculated values commonly affected joints after menopause are low back (78.4%) knee (71.3%) shoulder (56%) and neck (52%) other joints and structures are less commonly affected and up to 40% of female's have severe post-menopausal changes.

### Conclusion

Based on the results obtained we conclude that prevalence of musculoskeletal changes in post-menopausal women's is most common affecting low back, knee, shoulder and hip commonly. There is considerable number of postmenopausal symptoms and changes seen of about 70% of the women undergo such changes.

## Introduction

In a women's life, there are two milestones one is menarche which is onset of menstrual cycle and Menopause. The word menopause was first used by a French physician De Gardanne in the year 1816. <sup>(3)</sup> Menopause is a normal natural event defined as the final menstrual period. It represents permanent cessation of menses resulting from loss of ovarian follicular functioning due to aging. <sup>9,6,2</sup> Menopause is recognized after 12 months of amenorrhea which is not associated with pathological causes. The age of menopause varied from a lowest of 37.48 years to highest of 53.59 years, with a mean age at menopause being 47.91 years ( $\pm$  3.16). This mean age at menopause of present sample is higher than those reported for rural women of North India (44.10 yrs), Baroda females (44.59 yrs) , Bazzigar women of Punjab (46.98 yrs), but com- parable to Amritsar women (47.54 yrs). <sup>3,4,9</sup> In conclusion 'early' menopausal group (41.04 yrs) and 'late' menopausal group (53.05 yrs) Menopause isn't always caused by the natural decline of hormone production in the body, however it can also be brought on by one of the following: Hysterectomy-hen your uterus is removed during this surgical procedure, but not your ovaries, you usually won't enter menopause. However, when you undergo a total hysterectomy and bilateral oophorectomy (removing uterus and ovaries), the procedure will cause immediate menopause. Chemotherapy and radiation therapy these cancer therapies can induce menopause and lead to symptoms during therapy or months later. Primary ovarian insufficiency, though the cause of this condition is not fully understood, it is a result of your ovaries not producing normal levels of reproductive hormones. For the nearly 1 percent of women under 40 who reach menopause, this may be a likely cause. The signs and symptoms of menopause begin to appear in per-menopause, which may begin many years before menopause is reached. There are a variety of common symptoms, though not everyone will experience them, and certainly not to the same degree. For some women, premenopausal will be virtually symptom

free, while others will have symptoms that significantly affect their quality of life. Even in well developed countries women musculoskeletal disorders are common after menopause.<sup>1,8</sup> The original version of the Menopause Rating Scale questionnaire [MRS] was created in the early 1990's in Germany. After certain criticism, the MRS questionnaire was updated so that clients themselves could fill it in. The MRS questionnaire was standardized in Germany and its psychometric characteristics were calculated. The MRS questionnaire includes 11 symptoms divided into three areas – soma-to-vegetative (4 items), psychological (4 items) and urogenital (3 items). A woman completing the questionnaire specifies for every symptom what severity of difficulties she perceives by herself in the given period. She can choose out of five grades of intensity: 0 to 4 (intensity of difficulties: none, minor, medium, major, unbearable).<sup>4</sup>

**Nordic** questionnaires, for analysis of the musculoskeletal symptoms. Musculoskeletal changes occurs predominantly in low back, neck and lower limb and this scale helps in collecting data on this system. The questionnaire provides useful and reliable information on musculoskeletal system. This information either gives rise to further in-depth investigation or gives hint for decision making on preventive measures.<sup>7,4</sup> Common musculoskeletal diseases in menopause women ,Non-inflammatory musculoskeletal diseases:-Perimenopausal poly arthralgia/arthritis, Osteoarthritis, Spondylosis, Osteoporosis, Hypothyroidism, Myofascial pain, Fibromyalgia; Inflammatory musculoskeletal diseases:-Rheumatoid arthritis, Systemic lupus erythematosus, Crystal-induced arthritis, Gouty arthritis, CPPD arthropathic, Poly-myalgia rheumatica/ giant cell arteritis. Musculoskeletal disorders are highly prevalent among postmenopausal women's when compared to premenopausal women's. Disability among women over 70% among women aged 50–69 is caused by musculoskeletal disorders.<sup>2,1,8</sup> The Aim of this study is to check for the prevalence of MS changes in postmenopausal women. Purpose of the study menopause leads to various problems and changes in women both pre-and post menopause among which musculoskeletal problems are said to be more common. There were very minimal studies to calculate the prevalence of musculoskeletal problems in postmenopausal women. Hence purpose of this study is to calculate the prevalence of MS changes in postmenopausal women. Objective of the study as there were minimal studies to check for musculoskeletal changes in-depth in postmenopausal women's the objective of the study is to calculate the prevalence of musculoskeletal changes in post-menopausal women's.

### Methodology and Data collection

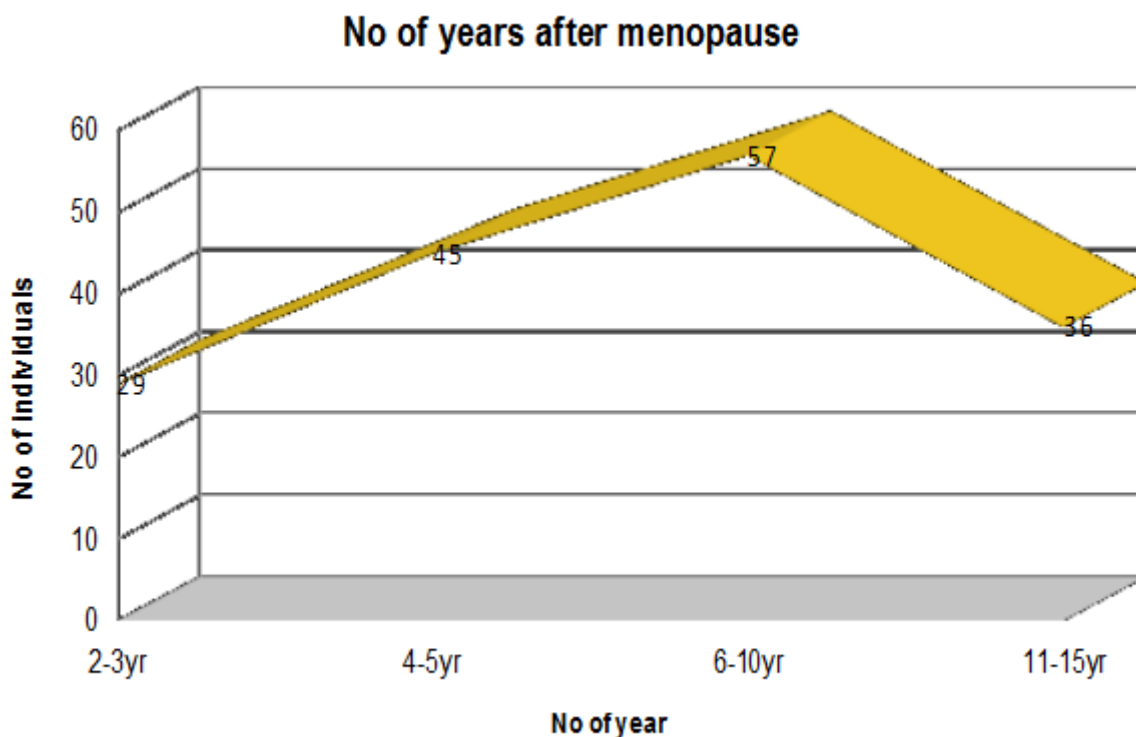
This is a cross-sectional study in which survey camp for women's was conducted at kuthampakam villages around Saveetha Hospital organized by Saveetha College of Physiotherapy. Were more than 334 women of these two villages were assessed for general health and 167 post-menopausal women among those 334 women's were assessed using Menopause Rating Scale and NORDIC questionnaire to rule out post-menopausal changes in musculoskeletal system. Everyone was examined separately by the examiner (experienced therapist) and each questions of the questioner were explained by the therapist to each participant and answers were noted by the therapist themselves. All the individuals were included in the study after signing in informed consent form.

**Table 1: mean values of age and BMI**

Age	Body Mass Index [BMI]
47 years ± 4.05	25.32 ± 3.28

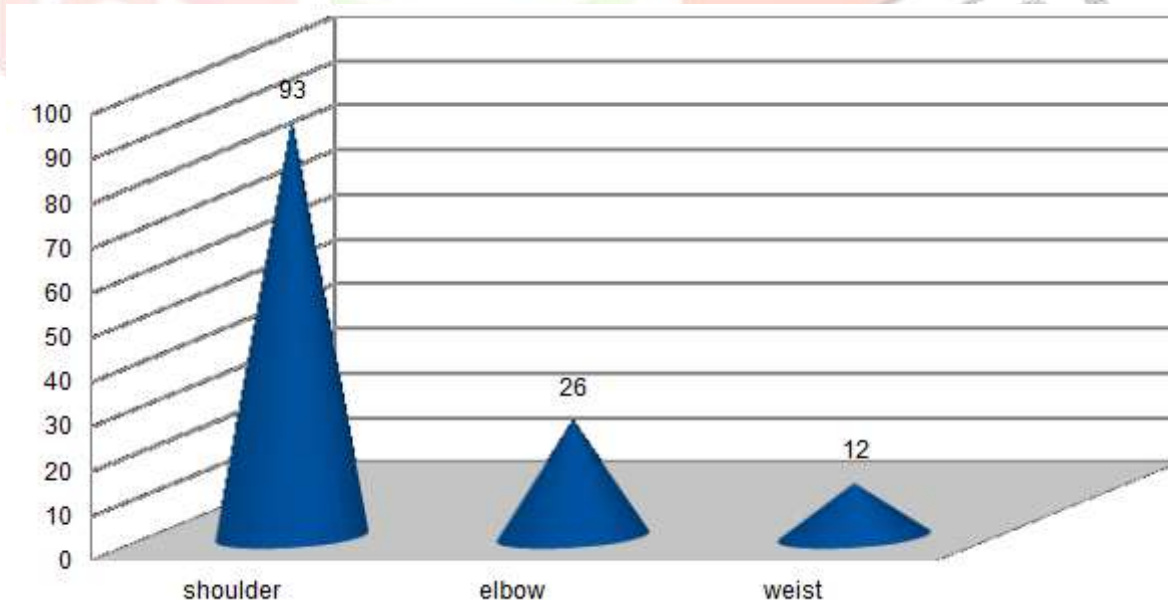
Table above shows the mean values of age and body mass index of all the women's who participated in this study. Most of the women participated in this study were at normal menopausal age and were overweight as per their BMI.

Graph 1: number women's with ranging post-menopausal year

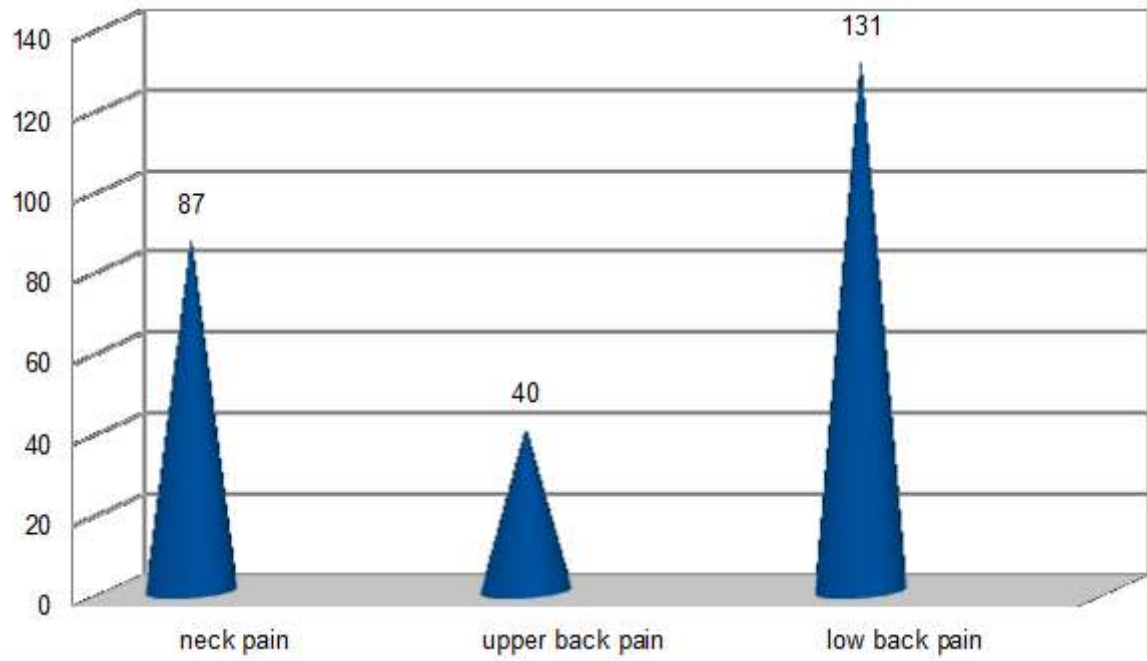


Graph 1 explains the number of years past after menopause. Most of the women's comes under the category of 6-10 years past after they attained menopause. Second stands 4 -5 years post menopausal category then comes 11- 15 years and only few women's were under immediate post menopausal period of 2- 3 years.

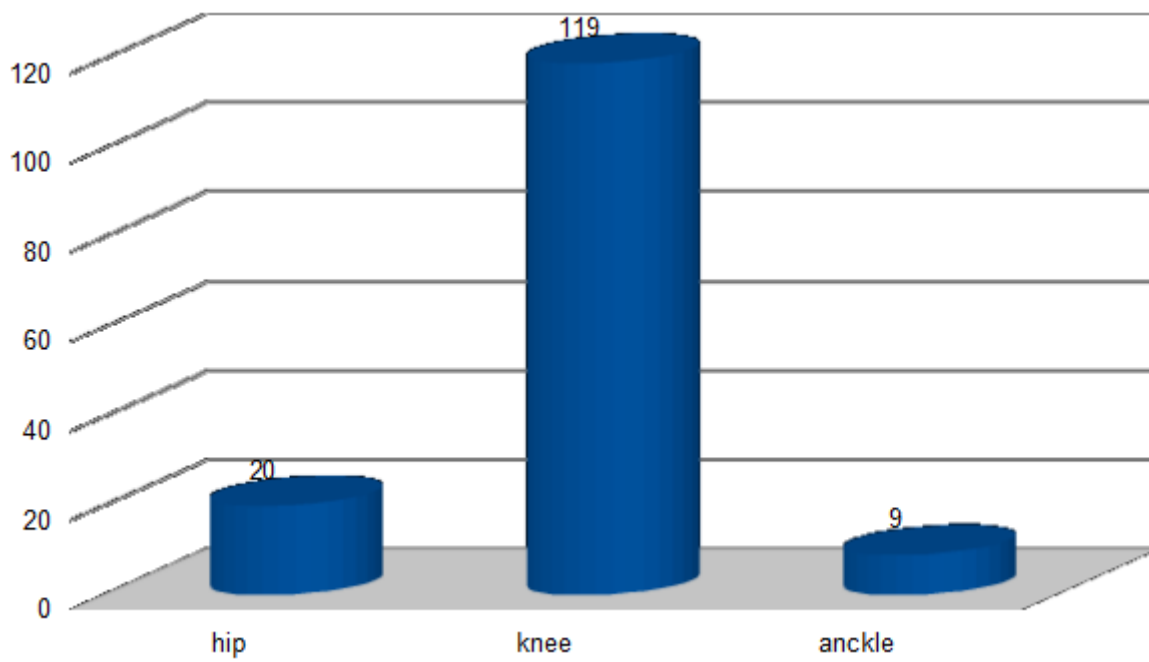
Graph 2: Number of people with pain in upper limb



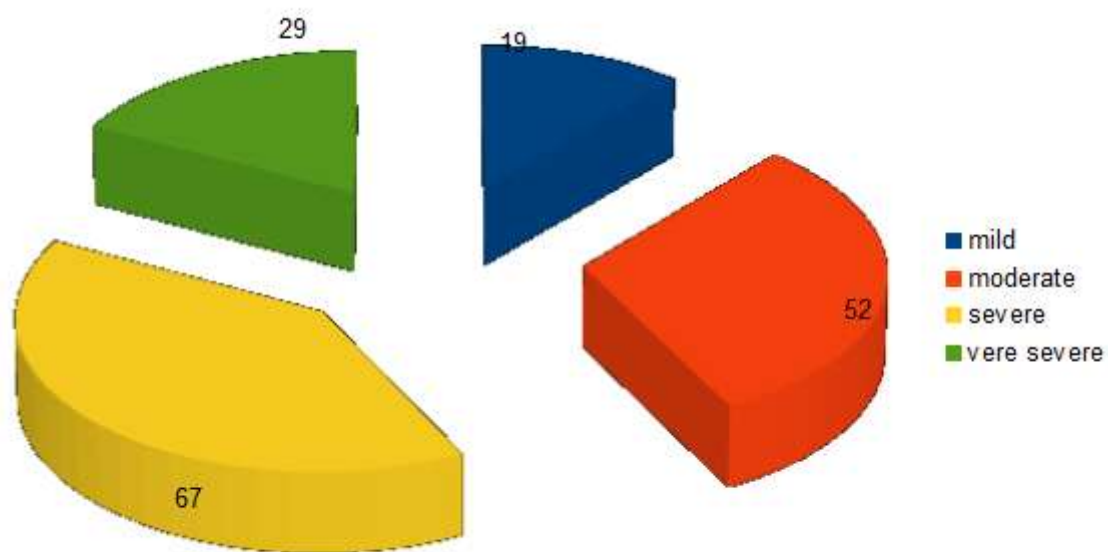
Graph 3: number of women's having back and neck pain



Graph 4: number of women with pain in lower limb



Graph 5: MRS values



## Result

Based on the collected data from 167 women's among them most common musculoskeletal pain recorded was low back pain up to 78.4% of the assessed population was affected, up to 71.3% of them were affected by knee pain, shoulder pain in 56%, neck pain was about 52%. Least commonly affected joints after menopause is upper back (24%), elbow (15.5%), hip (12%) and ankle in (5%).

based on menopause rating scale about 40% of them has post-menopausal symptoms severely, 31% of them had moderate changes, very severe symptom was found in 17.4% and mild symptoms in 11.5% of the assessed population.

## Discussion

This study shows the prevalence of musculoskeletal changes following menopause. Musculoskeletal changes is the most common changes which occurs in both male and females, often age related changes in males and very common problem in women's. These changes are often high after menopause due to drastic hormonal changes after menopause. A study conducted, among 252 post-menopausal women at rural area of New Delhi. A pretested, self-designed, semi structured, interview based, oral questionnaire was used. Muscle or joint pain (59.1%) was the major problem among the population".

There are various studies conducted all over the world to find average age of menopause in a study conducted in Obstetrics and Gynecology department to estimate the average age of menopause were in 89 women participated. This study states that average age of menopause  $46.22 \pm 2.22$  years is the average age of attaining menopause. Another study conducted among 890 women's aging from 40-90 years were assessed using status quo and retrospective method and found that average age of menopause among brahmin women's in  $\pm 48.41$

In this study menopause rating scale and NORDIC questionnaires are used in this study as assessment tool. Menopause rating scale helps in finding the menopausal symptoms. In study 9311 women with mean age of 49.9 were assessed to check the reliability of menopause rating scale. Concluded that 55% of the women had sever menopausal symptoms and menopause rating scale has efficiency to assess the menopause related changes in post-menopausal women's. NORDIC questionnaire is used to assess the musculoskeletal changes. A study conducted to validate NORDIC questionnaire more than 100 samples from various fields like mechanical engineers, nurses, railway workers etc. prior assessment was taken before giving the questioner and both the values were compared to assess its reliability. The study concludes that NORDIC questionnaire gives reliable information muscle and joint pain. In a study conducted over 498 women's aging more than 35 years were assessed for musckeloskeletal problems in a women's welfare camp. This study concluded that musckeloskeletal problems are more in post-menopausal women's.

## Conclusion

By the results of the study we conclude that there are musculoskeletal changes in postmenopausal period and commonly leads to degenerative changes in low back, knee, shoulders and neck. About 70% of the population has most menopausal changes up to considerable levels. And we conclude that musculoskeletal changes are common in post-menopausal women's.



**References**

- [1] “Changes in muscle mass and strength after menopause” by 'M.L. Maltais, J. Desroches, and I.J. Dionne' J Musculoskelet Neuronal Interact 2009; 9(4):186-197.
- [2] “Health Problems of Women above Forty Years of Age in Rupandehi District of Nepal” by 'Dilaram Acharya, Salila Gautam et al.' International Journal of Health Sciences & Research Vol.3; Issue: 3; March 2013.
- [3] “Age at Natural Menopause among Rural and Urban Punjabi Brahmin Females” by 'Maninder Kaur and Indu Talwar' Anthropologist, 11(4): 255-258 (2009).
- [4] “Average Age of Menopause and its Climacteric Symptoms in Women of Multan City” 'Syeda Ali, Ayesha Uzaima Tarin' PJMHS Vol.9, NO.1, JAN – MAR 2015.
- [5] “The Menopause Rating Scale (MRS) as outcome measure for hormone treatment? A validation study” by 'Lothar AJ Heinemann et al.' Health and Quality of Life Outcomes 2004, 2:67.
- [6] “Menopausal symptoms of postmenopausal women in a rural community of Delhi, India: A cross-sectional study” by 'Akanksha Singh, Shishir Kumar Pradhan' Journal of Mid-life Health | Apr-Jun 2014 | Vol 5 | Issue 2.
- [7] “Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms” by 'Kuorinka, B. Jonsson' Applied Ergonomics Sept~ml~r 1987.
- [8] “Menopause and metabolic syndrome: A study of 498 urban women from western India” by 'Shefali Pandey, Manisha Srinivas, et al.' Journal of Mid-life Health | Jul-Dec 2010 | Vol 1 | Issue 2.
- [9] “The Timing of the Age at Which Natural Menopause Occurs” by 'Ellen B. Gold, PhD' PMC 2012 September 1.

