

A study on musculoskeletal disorders distribution and health-seeking behavior among geriatric people in the field practice area of rural health and training center of a tertiary care hospital

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Abstract

Background: The World Health Organization (WHO) Technical Report 2003 stated that musculoskeletal disorders (MSDs) include osteoporosis, osteoarthritis, rheumatoid arthritis, spinal disorders, severe limb injury, trauma, or fracture. The burden of MSDs is global and looking at the gravity of the situation, WHO declared 2000–2010 as the bone and joint decade. As the geriatric people are more vulnerable to osteoporotic changes, there is a possibility that prevalence of MSDs will be more. So this cross-sectional study has been carried out among the geriatric people.

Objective: To assess the sociodemographic profiles of geriatric people, to find out the prevalence of MSDs among study participants, and to assess their health-seeking behavior toward MSD.

Materials and Methods: A total of 400 geriatric people were included in the study as study participants. Systematic sampling was followed to identify the household. The semi-structured questionnaire from the Safdarjung Hospital Report was used to gather information regarding MSD problems.

Result: A total of 43% of the study participants belonged to lower middle class family, 48% participants had joint pain, and 21% had backache. Knee joint was the most commonly affected joint. Backache was more common in women (67%) than in men (33%) and was found to be statistically significant. A total of 31% of the participants had osteoarthritis, 2% had rheumatoid arthritis, 7% had soft tissue rheumatism, 1% had monoarticular joint pain and gout, 4.75% had severe limb injury, trauma, and fracture, 26% had pain at any site, and 13.3% had no complaint at all. Overall prevalence of MSD was 61%. A total of 45% were seeking treatment from local Registered Medical Practitioner, whereas 28% did not seek any treatment for MSD problem.

Conclusion: The geriatric people should undergo investigations such as serum calcium, vitamin D-3, and bone marrow density.

KEY WORDS: Musculoskeletal disorder (MSD), rural health and training center (RHTC), consumer price index (CPI)

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Introduction

Ageing is considered as a natural and universal process. Geriatric people in India constitute about 8.3% of the total population.^[1] Elderly people are vulnerable to long-term diseases of insidious onset, one among them is musculoskeletal disorder (MSD). This is the second most common cause of morbidity among the elderly people.^[2]

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With age, there is increased bone fragility, loss of cartilage, reduced ligament elasticity, loss of muscular strength, and fat distribution, decreasing the ability of tissues to perform their normal functions. The loss of mobility and physical independence resulting from arthropathies and fractures can be particularly devastating in this population not just physically and psychologically, but also in terms of increased mortality rates.

Prevalence of MSDs in rural Delhi is about 6.92% and in rural Dibrugarh was about 9.68%. The prevalence of MSDs in the age group of 18 to 30 years at rural Delhi was about 2.24% and increases to 17.66% in the age group of 71 years and above. The World Health Organization (WHO) Technical Report 2003 stated that MSDs include osteoporosis, osteoarthritis, rheumatoid arthritis, spine disorders, severe limb trauma, or injury or fracture. The burden of MSDs is global and looking at the gravity of the situation WHO declared 2000–2010 as the bone and joint decade.^[3] The bone and joint decade was endorsed by the United Nations and the WHO to improve the health-related quality of life for people with MSDs. The bone and joint decade is focused on health policy and evidence with a mandate to develop strategies and set the agenda, aimed at improving quality of life by implementing effective prevention and treatment through its unified voice and global reach.^[4] The prevalence of many of these conditions increases markedly with age, and many are affected by lifestyle factors, such as obesity and lack of physical activity. The burden should also be considered of who is at risk.^[5]

The implication of the study of MSDs conditions in elderly is an attempt to provide evidence enabling the development of priorities and strategies to address the health-related issues on the quality of life for people relevant to their geographical and socioeconomic setting. It will help us to know the etiology, magnitude, and determinants of musculoskeletal conditions in the respected field practice area.

The prevalence of MSDs in geriatric people in rural Dibrugarh was 50.67%.^[3] As geriatric people are in the more vulnerable age group for the development of osteoporotic changes, there is a possibility that the prevalence of MSDs in these study participants will be more. It is commonly observed that geriatric people are not utilizing any health-care services for the treatment of the rheumatic complaints especially in the rural area. A study conducted in rural area of West Bengal found that half of the study participants were treated by quacks and only a few were treated by rheumatologists.^[6] So, the present cross-sectional study has been carried out among them to find out the prevalence of MSDs and to know their health-seeking behavior. Objectives of the study were to assess the sociodemographic profiles of geriatric people, to find out the prevalence of MSDs among study participants, and to assess their health-seeking behavior toward MSDs

Materials and Methods

It was a community-based cross-sectional study carried out in geriatric people in the field practice area of a tertiary care hospital. The prevalence of MSDs among geriatric

people was 50%. Taking 10% as allowable error, 400 geriatric people were included in the study as study participants. This study was carried out from May 2015 to June 2015.

Rural health and training center (RHTC) of a tertiary care hospital caters services to nine villages having a population of 31,420 and 8,199 households. The household/family records were available at the RHTC. There are about 2,608 geriatric individuals. Systematic random sampling was followed to identify the household. The sampling interval was 8,199 households/400 = 20. Every *K*th (20) household was visited as per household records available at the RHTC. In the first village, the first household was selected using simple random technique and afterward every 20th household was visited. If the household was found locked during the visit or a geriatric participant was not available during the visit, the right hand thumb rule was followed. From one household only one participant, either male or female participant was interviewed.

The semi-structured questionnaire from the SJH report was used to gather information regarding musculoskeletal problems. The questionnaire was modified according to the objectives of the study. The case definition of MSDs such as rheumatoid arthritis was done by American College of Rheumatology, 1987. After discussion with the orthopedician, the participants were classified accordingly.

Sociodemographic status of the family was assessed using Modified BG Prasad scale-2015 (Consumer Price Index = 254). The severity of pain was assessed using Center for Rheumatic Diseases (CRD) Pune Health Assessment Questionnaire (HAQ). If two diagnosis or symptoms coincide with each other, the final diagnosis was done based on the severity of pain, duration of pain, and after consultation with the orthopedician. X-ray imaging and expensive blood investigations were not done for classifying the participants having MSDs according to case definition. Accordingly, data were collected, compiled, and analyzed using SPSS Inc. Released 2009. PASW Statistics for Windows, Version 18.0. Chicago.

Result

In this study, 89.8% of the participants were between the age group 60–70, 9.3% between 71–80, and 1% above the age 80 years. A total of 47.8% of the participants were men and 52.2% were women. A total of 58% of the participants were illiterate, 22.8% completed secondary education, and 17.3% had primary education. A total of 33.8% of the participants were agricultural workers, 14.8% were unemployed, and 30% were housewives. A total of 42.8% of the study participants belonged to lower middle class, 19.5% belonged to upper middle class, 18.8% belonged to middle class, 13.8% belonged to lower class, and 5.3% belonged to upper class.

As per the signs and symptoms of MSDs, 47.7% participants had joint pain, 16% had joint stiffness, 19.75% had muscle pain, 20.7% had spine or back pain, and 23.25% had joint swelling, whereas 13.25% had no symptoms of MSD. Joint pain was the most common symptom in the study participants.

Among all the joints involved, knee joint was the most commonly involved joint. A total of 62% participants of the joint pain had knee joint involvement. Knee joint involvement was more common in women than men.

Osteoarthritis was more common in women (53%) as compared with men (47%) and was not found to be statistically significant. Backache mainly including nonspecific spine problem was more common in women (67%) as compared with men (33%) and was found to be statistically significant. Pain at any site was found more in women but was not statistically significant.

A total of 31.3% of the participants had osteoarthritis, 2% had rheumatoid arthritis, 15.25% had spinal problem, 6.75% had soft tissue rheumatism, 1% had monoarticular joint pain and gout, and 4.75% had severe limb injury, fracture, and trauma, 26% had pain at any site, and 13.3% had no complaints. So excluding pain at any site patients and participants having no complaints, the overall prevalence of MSD is 61%.

Regarding health-seeking behavior, 44.75% were seeking treatment from private practitioner/local RMP, 15.25% were on self-medication practice, and 10.5% were utilizing services of district hospital/Community Health and Nutrition Cluster/primary health-care center (PHC)/subcenter. A total of 27.5% of the participants did not seek any treatment. Treatment modalities concluded that 51% of the participants were taking allopathic drugs, 55% were using pain relief ointment/cream/oil, and 13.5% ayurvedic medication.

Discussion

This cross-sectional study was undertaken among geriatric participants in the field practice area of RHTC to find out the prevalence of MSD among them and to know their health-seeking behavior.

In this study, it was observed that 89.8% of the participants were between the age group 60–70, 9.3% between 71–80, and 1% above 80 years. A total of 47.8% were men and 52.2% were women. A total of 58% of the participants were illiterate and 42% were educated. A total of 33.8% were agricultural laborers, 14.8% were unemployed, and 30% were housewives. A total

of 42.8% belonged to lower middle class, 19.5% belonged to upper middle class, 18.8% belonged to middle class, 13.7% belonged to lower class, and 5.3% belonged to upper class.

Whereas the study conducted by Madhu and Sridevi^[7] observed that 55.1% were in the age group of 60–69, 27.7% were between 70–79, and 17% were above age 80 years. A total of 38.66% were male illiterates and 89.68% were female illiterates. A total of 36.14% were male unskilled workers and 24.60% were female unskilled workers. A total of 4.49% belonged to upper class, 13.88% belonged to upper middle class, 26.12% belonged to middle class, 20.81% belonged to lower middle class, and 27.35% belonged to lower class.^[7]

In another study by Purty et al.,^[8] it was observed that 87.5% of the study subjects belonged to low socioeconomic status and according to another study by Elango,^[9] it was found that 49% of the study subjects belonged to lower socioeconomic status.

This study observed that 47.7% had joint pain, 20.7% had spine or back pain. Among all the joints, the most commonly involved joint was knee joint, which accounted for 62% and is found more in women than in men. Osteoarthritis was more common in women (53%) as compared with men (44%), backache was more common in women (67%) as compared with men (33%). Pain at any site was found more in women than in men. A total of 31.3% had osteoarthritis, 2% had rheumatoid arthritis, 15.25% had spine problems, 6.75% had soft tissue rheumatism, 1% had monoarticular joint pain and gout, and 4.75% had severe limb trauma and injury and fracture, and 26% had pain at any site, and 13.3% had no complaints. The overall prevalence of MSD was 61%.

According to a study prevalence of rheumatic diseases in a rural population in Western India: a WHO-ILAR-COPCORD Study, there was a dominant distribution of pain at all sites (articular/soft tissues) in women; painful neck (9.5%), back (17.3%), and calf (8.5%) appeared significant when compared to the Bhigwan men. Osteoarthritis and inflammatory arthritis were seen in 29% and 10% of the subjects, respectively.^[10] In the study by Kaur et al.,^[11] it was found that of the total geriatric population surveyed, 48% had knee joint pain.^[11] In this study also, it was found that knee joint was the most common joint to get involved in participants.

According to an epidemiological study of correlates of osteoarthritis in geriatric population of Union Territory Chandigarh, it was found that osteoarthritis was more common in women as compared with men (70.1% vs. 41.6%).^[12] In this study also, it was found that osteoarthritis was more common in women (53%) than in men (47%) but was not found to be statistically significant.

In a study by Nazeer et al.,^[13] of the 300 cases studied, 72 cases (24%) of lower back pain came from rural area for evaluation, treatment, and follow-up. In this group, there was a higher incidence of women (28%).^[13] In this study also, spinal problem was more common in women and was found to be statistically significant.

According to SJH report, the prevalence of MSDs in the geriatric people in rural Dibrugarh was 50.67% and in rural Jodhpur was 46.08%.^[3] But in this study, it was 61%.

Table 1: Distribution of MSDs according to case definition

Diagnosis	n	%	95% Confidence limits
No complaints	53	13.3	—
Osteoarthritis	125	31.3	26.8–36.1
Rheumatoid arthritis	8	2	0.9–4.1
Nonspecific spine disorder	57	14.25	11.1–18.2
Specific spine disorder	4	1	0.3–2.7
Soft tissue rheumatism	27	6.75	4.6–9.8
Pain at any site	103	25.75	21.6–30.4
Monoarticular joint pain and gout	4	1	0.3–2.7
Severe limb trauma/injury	19	4.75	3–7.4
Total	400	100	

According to this study, it was observed that 44.75% were seeking treatment from private practitioner/local RMP, 15.25% were on self-medication practice, and 10.5% were utilizing services of district hospital/CHNC/PHC/subcenter. A total of 27.5% of the participants did not seek any treatment. Treatment modalities concluded that 51% of the participants were taking allopathic drugs, 55% were using pain relief ointment/cream/oil, and 13.5% ayurvedic medication. A total of 19.5% participants did not seek any treatment at all.

The study by Deshmukh *et al.*^[14] regarding the health-seeking behavior for back and joint pain in rural Gadchiroli, India, found that about 80% of the respondents were found to have back or joint pain and majority (68.2%) of them took treatment from private practitioners, 23.5% took treatment from PHC, 4.7% took treatment from primary health-care subcenter, 3.5% from pharmacy, 2.4% from district hospital, 1.8% from traditional healer, and 50% were unaware of the role of physiotherapy and surgery. Complete pain relief was considered the major indicator of an effective treatment. Injectable medications (59.1%) and intravenous fluids (42.8%) were considered effective. More than half of the respondents were unaware about the effectiveness of exercise (55.8%), yoga (73%), and surgery (54.4%).^[14]

In another study, 50% of the participants were treated by quacks and only 0.8% of the participants were treated by rheumatologists.^[6] The conclusion of this study is that the geriatric people should undergo investigations such as serum calcium, vitamin D-3, bone marrow density, as there is a possibility that osteoporotic participants may have muscle pain or nonspecific body ache or pain at any site, fracture, or spinal problem. They should get calcium supplementation such as tablet and sachets to tackle this problem. Rheumatologists, orthopedician, and physiotherapist consultation should be made available at the CHC (community health center) and PHC level so that the rural people having MSDs will get benefit from it. Health education session should be conducted at the community level so that the morbidity associated with MSDs including osteoporosis, osteoarthritis, and rheumatoid arthritis will be reduced and the quality of the life of the geriatric people will improve.

Correct sampling technique, standardized case definition, and semi-structured questionnaires used by Safdarjang Hospital, New Delhi, India, were employed to gather the necessary information. Limitation of the study was that the X-ray imaging and expensive blood investigations were not done for classifying the participant having MSDs according to case definition.

Conclusion

The geriatric people should undergo investigations such as serum calcium, vitamin D-3, bone marrow density.

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References

1. Census 2011. Available at: www.gktoday.in/indias-elderly-population (Last accessed on 02-2-2015).
2. PARK'S TEXT BOOK OF PREVENTIVE AND SOCIAL MEDICINE 21st edition Chapter 10: 548 Preventive Medicine in Obstetrics, Pediatrics and Geriatrics VAHI(1997): Report of the Independent Commission on Health in India, Chapter 14, Health Problem of Specialized Groups.
3. Available at: [icmr.nic.in/final/S.J.H.Final Project Report 2012.pdf](http://icmr.nic.in/final/S.J.H.Final%20Project%20Report%202012.pdf) (Last accesses on 05-08-2015).
4. Bone and Joint Decade. Available at: www.bjd.org.au (Last accessed on 03-02-2015).
5. Woolf AD, Pfleger B. Burden of major musculoskeletal conditions. *Bull World Health Organ* 2003;81(9):646–56.
6. Santra G. Assessment of quality of rheumatology care in a rural area of West Bengal, India. *Indian J Pain* 2015;29(3):166–71.
7. Madhu T, Sreedevi A. A study of socio-demographic profile of geriatric population in the field practice area of Kurnool Medical College. *Int J Res Dev Health* 2013;1(2):69–75.
8. Purty AJ, Bazroy J, Kar M, Vasudevan K, Veliath A, Panda P. Morbidity pattern among the elderly population in the rural area of Tamil Nadu, India. *Turk J Med Sci* 2005;36(2006):45–50.
9. Elango S. A study of health and health related problems in the geriatric population in the rural area of Tamil Nadu. *Indian J Public Health* 1998;42(1):7–8.
10. Chopra A, Patil J, Billempelly V, Relwani J, Tandle HS; WHO-ILAR-COPCORD Study. WHO International League of Associations from Rheumatology Community Oriented Program from Control of Rheumatic Diseases. Prevalence of rheumatic diseases in a rural population in western India: a WHO-ILAR-COPCORD Study. *J Assoc Physicians India* 2001;49:240–6.
11. Kaur P, Walia I, Saini SK. Study on intensity of knee joint pain by "Application of Moist Heat" among geriatric population. *Nurs Midwifery Res J* 2007;3(4):162–71.
12. Sharmi MK, Swami HM, Bhatia V, Verma V, Bhatia SPS, Kaur G. An epidemiological study of correlates of osteoarthritis in geriatric population of UT Chandigarh. *Indian J Community Med* 2007;32(1):77–8.
13. Nazeer M, Rao SM, Soni S, Ravinder M, Ramakranthi T, Bhupati S. Low back pain in South Indians: causative factors and preventive measures. *Sch J App Med Sci* 2015;3(1D): 234–43.
14. Deshmukh SA, Kalkonde YV, Deshmukh MD, Bang AA, Bang AT. Healthcare seeking behavior for back and joint pain in rural Gadchiroli, India: a population-based cross-sectional study. *Indian J Community Med* 2014;39(4):229–34.

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