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A descriptive study to assess the knowledge regarding selected orthopedic disorders among adult women from selected areas of Pune city in a view to develop the information booklet

Ms. Rukaiya Quadri[1], Ms. Anand Shaily Bikai[2]*

[1]SY MSC Nursing, Student of Bharati Vidyapeeth (Deemed to be University), College of Nursing, Pune.
[2]Assistant Professor Bharati Vidyapeeth (Deemed to be University), College of Nursing, Pune.

***Corresponding Author**
Ms. Anand Shaily Bika

ABSTRACT

Introduction: The musculoskeletal system, consisting of bones, joints, muscles, tendons, ligaments, and nerves, can be affected by conditions like trauma, genetic factors, infections, or other medical issues. Common problems include osteoporosis, scoliosis, arthritis, fractures, and rotator cuff injuries. Symptoms often involve pain, swelling, stiffness, and reduced mobility. Aims: The main aim is to assess the knowledge regarding selected orthopedic disorders among adult women from selected areas of Pune city in a view to develop the information booklet. Methodology: The study adopted a quantitative approach with a non-experimental descriptive design to assess the knowledge of orthopedic disorders among 150 adult women (34–60 years) in Pune using purposive sampling. Result: The results show that 28% of participants had average knowledge (0-10), with a mean score of 13.26 and a standard deviation of 5.65. The majority, 54.67%, displayed good knowledge (11-20), while 17.33% achieved excellent knowledge (21-23). These findings suggest that most women had a good understanding of orthopedic disorders, with a smaller proportion having either average or excellent knowledge. Conclusion: The study found that most women in Pune had good knowledge of orthopedic disorders, though a notable portion showed only average awareness. This highlights the need for targeted education, such as informative booklets, to bridge knowledge gaps and improve health outcomes.

KEYWORDS: Orthopedic disorders, knowledge assessment, osteoporosis, osteoarthritis, adult women, health education.

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INTRODUCTION

The musculoskeletal system, consisting of bones, joints, muscles, tendons, ligaments, and nerves, can be affected by conditions like trauma, genetic factors, infections, or other medical issues. Common problems include osteoporosis, scoliosis, arthritis, fractures, and rotator cuff injuries. Symptoms often involve pain, swelling, stiffness, and reduced mobility. Diagnosis is based on physical exams, imaging tests (MRI, X-rays), and blood tests. Treatment options include non-surgical methods like medication and physical therapy, as well as surgical procedures such as joint replacements and corrective surgeries. Common orthopaedic conditions in women, like scoliosis, carpal tunnel syndrome, and hip fractures, cause pain and mobility issues. Early diagnosis and treatment can improve quality of life. These conditions affect bones, joints, muscles, and tendons, and are linked to aging, genetics, and hormonal changes.

Osteoarthritis causes joint pain, stiffness, and swelling, mainly in the hands, knees, hips, and spine. Risk factors include aging, menopause, obesity, and diabetes.

Osteoporosis weakens bones, increasing fracture risk. It's caused by a loss of bone density, with risk factors such as age, hormonal changes, and lifestyle.

Urbanization in India has led to poor dietary habits, less physical activity, and higher stress, increasing orthopedic conditions like osteoarthritis (OA) and osteoporosis among women. Many women remain unaware of the risk factors and symptoms. OA commonly affects the knee, hand, and hip, with rising body weight and longevity contributing to its increase. Osteoporosis results from bone mass loss and changes in bone structure. Some risk factors are uncontrollable, but lifestyle changes can help reduce the risk.

Osteoporosis, arthritis, and musculoskeletal injuries are common among women due to hormonal changes, reduced bone density, and lifestyle factors. The WHO estimates that 200 million women worldwide suffer from osteoporosis, particularly postmenopausal women. In India, the prevalence of orthopedic disorders is rising, worsened by a lack of awareness and early detection. Pune, as a growing urban center, faces similar challenges, with women in both urban and semi-urban areas at risk due to sedentary lifestyles, poor diets, and limited health knowledge.

NEED OF STUDY

This study is prompted by the rising prevalence of orthopedic disorders, especially among women, due to factors like hormonal changes, aging, and lifestyle habits. Conditions such as osteoporosis, arthritis, and back pain are more common in women, leading to chronic pain, reduced mobility, and a lower quality of life. However, many women lack knowledge about prevention, early signs, and management, which delays diagnosis and worsens the impact of these conditions. The study aims to develop an information booklet to educate women, empowering them to take preventive measures, seek timely medical care, and manage orthopedic disorders effectively, improving their health and well-being.

Osteoporosis is a debilitating skeletal condition characterized by low bone mass and tissue degeneration, increasing the risk of fractures. It is a major public health issue due to its high prevalence and impact on morbidity, mortality, and healthcare costs. Genetic factors play a key role in determining an individual's risk, helping identify high-risk groups for targeted treatments. Hormonal imbalance, particularly the drop in estrogen levels during menopause, is a key factor in osteoporosis, increasing fracture risk and accelerating bone loss.

Osteoarthritis (OA) is the most common musculoskeletal disease globally, leading to chronic pain and disability, particularly in the aging population and those with obesity. In India, OA cases have risen from 23.46 million in 1990 to 62.35 million in 2019, with an increase in age-standardized prevalence and Disability-Adjusted Life Years (DALYs). Knee OA is the most prevalent, especially among women. OA is associated with aging and intensive physical labor, particularly in rural populations of developing countries. Understanding regional risk factors can help in developing affordable, high-quality preventive healthcare services. The researcher aims to assess the knowledge of adult women in selected areas of Pune city regarding orthopedic disorders, with a focus on identifying gaps in awareness and understanding. The study's goal is to develop an informative booklet that can serve as a comprehensive resource for educating women about common orthopedic issues, preventive measures, and treatment options. By evaluating the existing knowledge base, the researcher intends to create a targeted educational tool that addresses the specific needs of the community, empowering women to take proactive steps in managing their orthopedic health and preventing potential disorders.

AIM OF STUDY

The main aim is to assess the knowledge regarding selected orthopedic disorders among adult women from selected areas of Pune city in a view to develop the information booklet".

METHODOLOGY

The research aimed to assess the knowledge regarding selected orthopedic disorders among adult women in Pune city, with the goal of developing an informative booklet. A quantitative approach was adopted, using a non-experimental descriptive design. The study focused on adult women between the ages of 34-60 years who suffer from orthopedic disorders. The sample size was calculated to be 150, using a formula considering a 95% confidence level and 5% margin of error, accounting for a 10% attrition rate. Non-probability purposive sampling was employed to select participants who met the inclusion criteria: women with orthopedic disorders who understood English or Marathi.

Data collection involved a structured tool with two sections: Section I gathered demographic data, including age, education, family type, occupation, and knowledge of orthopedic conditions. Section II included 23 self-structured questions designed to assess knowledge on orthopedic disorders. The tool employed a scoring system, categorizing knowledge levels into average (0-10), good (11-20), and excellent (21-23). Section III contained an information booklet outlining definitions, causes, symptoms, management, and preventive measures for orthopedic disorders

The validity of the tool was ensured through expert evaluation, while reliability was tested using the test-retest method with Karl Pearson's formula. A pilot study with 15 participants was conducted to assess the feasibility and reliability of the study design. Data collection was carried out after obtaining ethical approval from relevant authorities, and participants were informed about the study and asked to provide informed consent. The researcher also provided health education to the participants to enhance their understanding of orthopedic disorders.

RESULT

SECTION I: Sample demographic information.

The demographic analysis highlights that the majority of participants (35.33%) are aged between 55-61 years, followed closely by those in the 41-47 years group (34.67%). A smaller proportion belongs to the 48-54 years (19.33%) and 34-40 years (10.67%) categories. Regarding education, the largest segment (31.33%) has completed high school, followed by those with primary education (28.67%). A notable 21.33% are graduates, while 18.67% have no formal education. Family structure analysis shows that 53.33% of participants live in nuclear families, whereas 46.67% belong to joint families. In terms of occupation, working women (55.33%) slightly outnumber housewives (44.67%), indicating a significant proportion of employed individuals in the sample.

A crucial finding is the awareness of orthopedic disease conditions. A large majority (71.33%) lack knowledge about such conditions, while only 28.67% are aware. This suggests a pressing need for awareness programs and health education initiatives to improve understanding and prevention strategies for orthopedic diseases, especially among older adults. Given that a significant proportion of participants are in their late 40s to early 60s, targeted interventions can help enhance their knowledge, promote early detection, and encourage better management of orthopedic health issues. The data reveals that osteoporosis is more common

than osteoarthritis in the sample, with 54% reporting osteoporosis and 46% reporting osteoarthritis. This suggests that osteoporosis may be a more prevalent concern among the participants than osteoarthritis. Medication Usage: The majority of the sample (58%) reported taking medication, while 29.33% do not take medication, and 12.67% fall into the "Others" category. This suggests that medication usage is fairly common in the sample, though a notable portion of individuals either do not take medication or use alternatives.

SECTION II(a): Data related to assess the knowledge regarding selected orthopedic disorder among adult women residing in selected areas of Pune city.

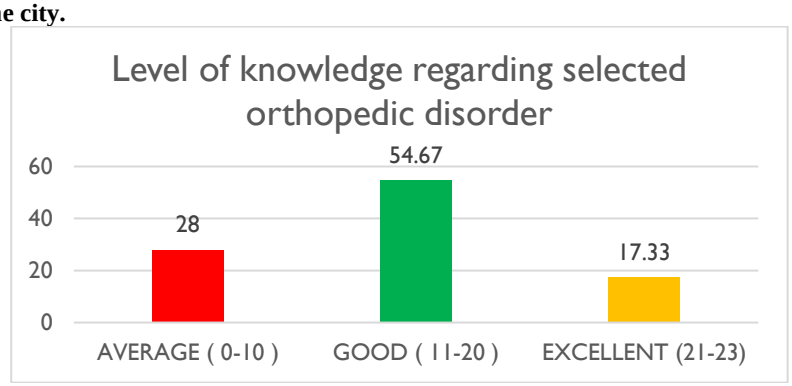

Figure 1: Percentage wise distribution according to level of knowledge regarding selected orthopedic disorder

Data presents the assessment of knowledge regarding selected orthopedic disorders among adult women in Pune city. The results show that 28% of participants had average knowledge (0-10), with a mean score of 13.26 and a standard deviation of 5.65. The majority, 54.67%, displayed good knowledge (11-20), while 17.33% achieved excellent knowledge (21-23). These findings suggest that most women had a good understanding of orthopedic disorders, with a smaller proportion having either average or excellent knowledge.

Section ii(b) : To assess the knowledge regarding selected orthopedic disorder among adult women residing in selected areas of Pune city.

The highest response rates were recorded for the role of vitamin deficiency as a primary cause of osteoarthritis (89.33%) and diagnostic methods for osteoarthritis (87.33%), indicating strong awareness in these specific areas. Additionally, a substantial majority (84.67%) were familiar with the general concept of orthopedic disorders. A notable percentage (74.00%) correctly identified the most common symptom of osteoporosis, and 72.00% recognized both the hormonal deficiency causing osteoporosis and the population most at risk for osteoarthritis. However, only 36.00% correctly recognized osteoporosis as a “silent disease,” highlighting a gap in understanding its asymptomatic progression. Knowledge of risk factors showed moderate variability: 66.00% identified contributing factors for osteoporosis, while 46.00% did so for osteoarthritis. Awareness of preventive strategies also varied—70.67% acknowledged the importance of diet, while 49.33% understood the role of exercise. However, only 32.67% identified the most effective exercises for preventing osteoporosis in adult women, indicating a need for targeted education in physical activity awareness. Furthermore, understanding of obesity's impact on osteoarthritis was relatively limited (43.33%), and only 35.33% knew how to maintain body strength. Knowledge related to symptom recognition and preventive lifestyle changes remains scattered.

SECTION III: Finding the association with selected demographic variable.

The Chi-square test results show no significant correlation between demographic factors and adult women's knowledge levels on orthopedic problems, as all P-values are greater than 0.05. Specifically, there is no significant association between age (P=0.389), education (P=0.313), type of family (P=0.442), occupation (P=0.460), prior knowledge of orthopedic conditions (P=0.746), orthopedic disorder type (P=0.754), and medication usage (P=0.552) with knowledge levels. Although slight variations were observed, none of these differences were statistically significant.

DISCUSSION

This study aimed to assess the knowledge regarding selected orthopedic disorders among adult women in Pune city, with the goal of developing an informative booklet. The findings revealed that 28% of the participants had average knowledge (0-10), with a mean score of 13.26 and a standard deviation of 5.65. The majority, 54.67%, had good knowledge (11-20), while 17.33% achieved excellent knowledge (21-23). These results suggest that most women have a relatively good understanding of orthopedic disorders, although a smaller portion of the participants demonstrated either average or excellent knowledge.

Comparing this study to other research, Nidhi Kadam’s (2019) study in Pune city highlighted the low knowledge of osteoporosis and its risk factors among urban Indian adults. The mean age of the study population was 54.6 years, and while 50% of participants were aware of osteoporosis and could correctly define it, there was still a significant gap in understanding. Women had significantly higher knowledge scores compared to men, and those with higher education and socio-economic status also scored better. Notably, women with a family history of osteoporosis exhibited higher knowledge scores, indicating the influence of personal health history on awareness.

Similarly, ManickavasagamSenthilraja’s (2019) study on osteoporosis knowledge among postmenopausal women in southern

India found that although most women were aware of the consequences of osteoporosis, there was a generalized lack of awareness regarding risk factors and available treatment options. About 60% of participants had poor awareness of osteoporosis, reflecting a broader issue in health literacy.

Together, these studies underline the critical need for improved education on orthopedic disorders, particularly osteoporosis, among women. While there is some awareness, the gap in knowledge regarding risk factors, prevention, and treatment options suggests that targeted educational efforts, such as the development of information booklets and other resources, could help bridge this gap and promote better health outcomes.

CONCLUSION

In conclusion, this study highlights the general knowledge level regarding selected orthopedic disorders among adult women in Pune city. The results indicate that the majority of women have a good understanding of orthopedic disorders, with 54.67% of participants falling within the good knowledge range. However, a notable portion (28%) exhibited only average knowledge, suggesting room for improvement. The findings underscore the importance of providing targeted educational resources, such as an informative booklet, to enhance women's awareness of orthopedic disorders and promote better health outcomes. It is essential to bridge the gap between average and excellent knowledge levels through continued awareness and educational efforts.

Conflict of Interest:
The authors certify that they are involved in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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