

Review Article



Assessment of Risk Factors, Treatment Patterns and Health Related Quality of Life in patients With Osteoarthritis

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ABSTRACT

Osteoarthritis is a diverse set of chronic degenerative diseases defined by synovial inflammation, articular cartilage loss, and bone enlargement with the production of osteophytes at the margins. The consequences of osteoarthritis include pain, reduced function and restriction in daily activities. With a prevalence of 22-39 percent in India, osteoarthritis is the second most common rheumatological condition and the most common joint illness. The responsible risk variables for the manifestation of OA include age, gender, weight, and occupation. We evaluated risk variables, treatment patterns, and health-related quality of life in 40 patients at a tertiary health-care facility in our prospective cross-sectional observational study. The study involves questioning the patients about their activities by using WOMAC questionnaire, daily routine, occupation and comorbidities. We discovered that beyond the age of 45, women were more likely to be impacted by OA owing to Menopause. Vitamin D deficiency is one of the predominant risk factors which leads to OA in later stages. When taking their livelihood into consideration, farmers were more likely to develop OA when compared to other occupations. 14 subjects did not adhere to lifestyle changes and dietary modifications and were only on medications, while 26 subjects adhered to health management and medications as prescribed by physician. The enhanced treatment outcome was observed in the latter group concerning increased mobility and decreased physical disability attesting that dietary and lifestyle changes play a vital role in managing OA. We concluded that excess physical load on the joints, prolonged or repetitive bending and sitting are significant risk factors which manifest the occurrence of OA.

Keywords: Osteoarthritis, WOMAC questionnaire, livelihood, quality of life.

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Expanded age and obesity brings about primary osteoarthritis.

Depending upon the site and seriousness of disease different treatment choices are accessible. In people with moderate symptoms can be treated by analgesics, weight decrease, occasional rest, corticosteroid infusions, physical therapy and exercise. Surgical procedures necessary to improve joint function and to relieve severe pain are Joint debridement, hip or knee replacement. Joint lubricant injections for the most part comprising of hyaluronic acid, a substance regularly seen in synovial fluid, and relieve the pain and joint firmness in certain people with osteoarthritis.

The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is a set of questions used by medical care specialists to examine the health of a patient with hip and knee osteoarthritis, including joint hardness, discomfort, and physical working of the joints. It is available in five-point Likert scale, eleven-point mathematical rating, and one- hundred-mm visual simple scale (VAS) formats.

The main aim of this article is to assess risk factors, treatment patterns, and health related quality of life in patients with osteoarthritis. Some objectives of this study are to identify the significant risk factors in osteoarthritis patients, to analyze the most frequently employed treatment regimens in the treatment of OA, Measure the

INTRODUCTION

When there is inflammation inside the joints, the word "arthritis" is most usually employed. Osteoarthritis (OA) is a prominent cause of morbidity and costs a lot of money. Osteoarthritis is the most common type of joint inflammation seen all over the world. Osteoarthritis is the type of joint inflammation mostly observed around the world. It is a complex etiology chronic degenerative condition. It is specified by SF inflammation, articular ligament loss, bone enlargement leading to osteophyte formation at the margins, subchondral sclerosis, and a variety of biochemical and morphological alterations in the synovium and joint capsule. Results of osteoarthritis incorporate pain, diminished pain and limitation in daily activities.

The cause of osteoarthritis is unknown, but biomechanical forces like obesity, postural orthopedic anomalies or injuries which increase pressure on the joints and lead to osteoarthritis. Osteoarthritis is mainly seen in geriatric population and middle age because of insufficiency of vitamin D in the body. Women beyond 55 years are influenced more than men of a comparative age.



health-related quality of life (HRQOL) of patients with OA using the WOMAC scale and evaluate the various parameters effecting their quality of life.

METHODS AND MATERIALS

Study Design

A prospective cross sectional observational study was conducted to assess the risk factors, treatment patterns and quality of life in patients with Osteoarthritis, in Health-care center.

Sample Size

The risk factors, treatment regimens, and health-related quality of life of 50 individuals with OA will be assessed in a single point analysis (HRQOL).

Study Site

Mediciti institute of medical sciences.

Study Duration

The study is carried out for 6 months

Study Criteria

Inclusion Criteria

- People diagnosed with Osteoarthritis and undergoing the treatment.
- Age group between 30-70years.
- Patients with or without comorbidities like Hypertension, Diabetes, Vitamin D deficiency, Calcium deficiency.
- Informed consent must be given by the patient.
- Willingness and capacity to follow treatment regimens and attend the lab.

Exclusion Criteria

- Patients below 30 years of age.
- Patients with prior fractures involving knee joint or injuries of other joints.
- Patients with former joint infections.
- Patients with reluctance to comply with laboratory visits.

RESULTS AND DISCUSSION

Table 1: Distribution of Subjects Based on Gender

Gender	Subject Population	Percentage %
Male	19	38%
Female	31	62%

Interpretation: Table shows that female population are more prone to OA.

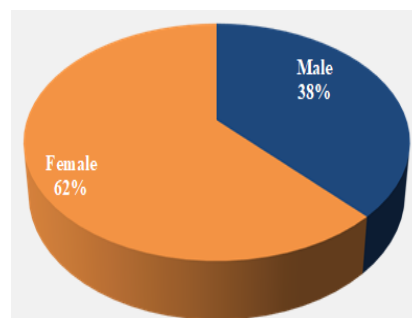


Figure 1: PIE Chart Representing Percentage of Subjects Based on Gender

Interpretation: Interrelating the Gender and Osteoarthritis, it was found that majority of patients were Females (62%).

Table 2: Distribution of Osteoarthritis Based on Age

Age in years	No. of Subjects	Percentage%
30-40	7	14
40-50	9	18
50-60	15	30
60-70	19	38

Interpretation: Table illustrates that the subjects exposing to OA are increased with increase in age

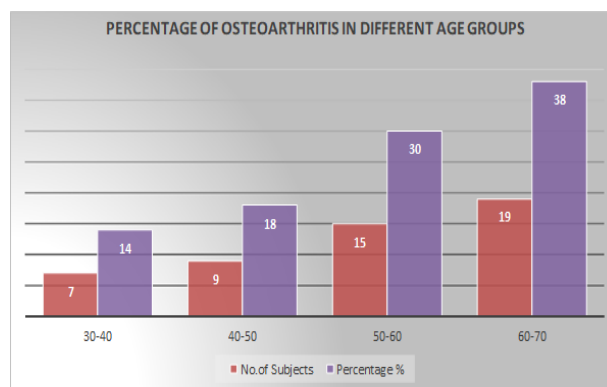


Figure 2: Bar Chart Illustrating Osteoarthritis In Different Age Groups

Interpretation: This bar diagram represents that the people with age group of 60-70 are prone to Osteoarthritis (38%).

Table 3: Distribution of Osteoarthritis Based on Occupation.

Occupation	No. of subjects	Percentage
Farmer	16	32
Daily labor	11	22
Home maker	4	8
Driver	3	6
Business	3	6
Security guard	4	8
Teacher	3	6
Tailor	6	12

The occurrence of Osteoarthritis in various occupations were found to be as follows;

FARMER>DAILY LABOUR>TAILOR>HOME MAKER> SECURITY- GAURD>DRIVER>BUSINESS>TEACHER.

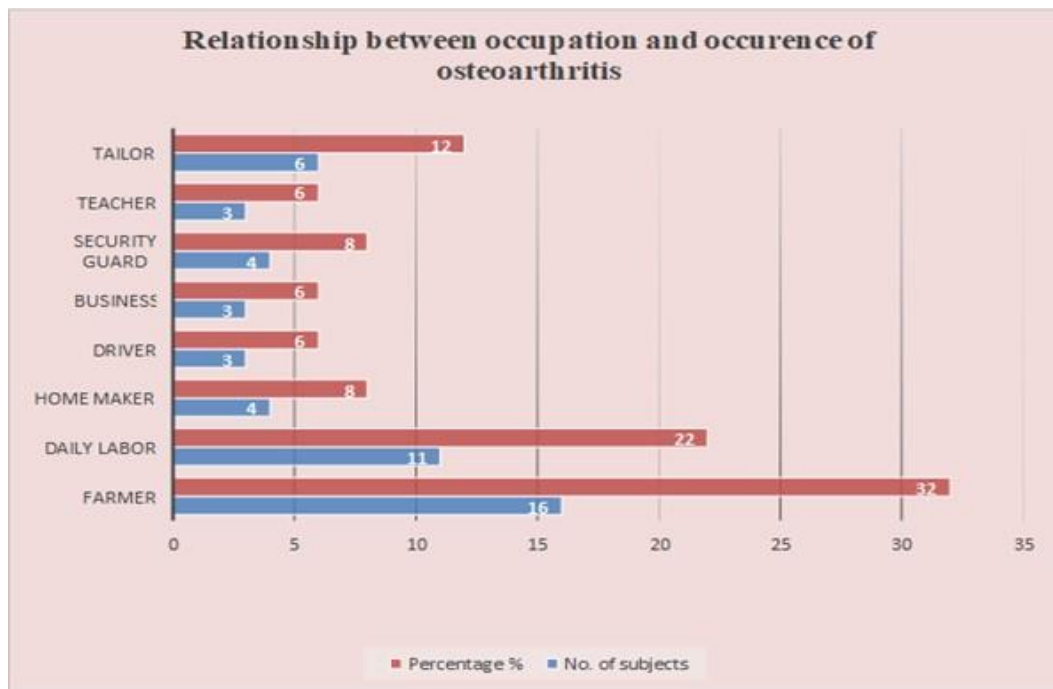


Figure 3: The Bar Diagram Illustrating the Relationship Between Occupation and Occurrence of Osteoarthritis

Interpretation: This bar chart interpreting that Agriculture is the main occupational risk factor that leads to Osteoarthritis.

Table 4: Weight of subjects affected by Osteoarthritis.

Weight	Subject population	Percentage %
Normal	11	22
Overweight	21	42
Obese	18	36

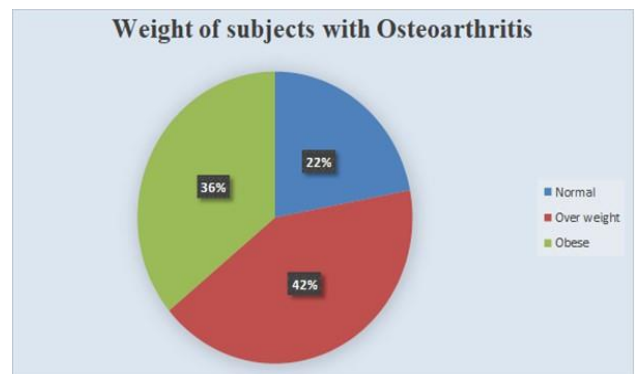


Figure 4: PIE Chart Representing The % of Normal, Overweight, and Obese Subjects.

Interpretation: It is clear from the table and pie chart that the Overweight and Obese population are at risk of exposing to OA.

Table 5: Observation of the Treatment Patterns of Osteoarthritis.

Treatment pattern	Subject population	Percentage%
Opioid analgesic (Tramadol)	44	88
Analgesic (Acetaminophen)	17	34
COX II NSAIDS (Diclofenac)	41	82
Corticosteroid (Methylprednisolone)	14	28
Vitamin D or Calcium supplement	39	78

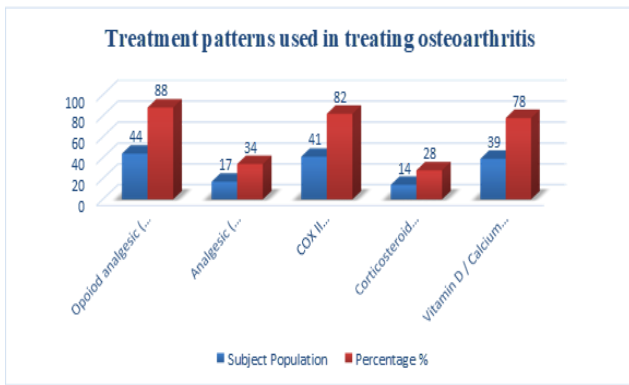


Figure 5: Showing the Treatment Patterns Used In OA.

Interpretation: The above figure interprets that Opioid analgesics and COX II inhibitors are the most commonly prescribed drugs in treating OA.

Table 6: Subject population with other Comorbidities along with OA.

Comorbidity	Subject population	Percentage %
Hypertension	8	16
Diabetes Mellitus	14	28
Vitamin D deficiency	19	38
Menopause	11	22

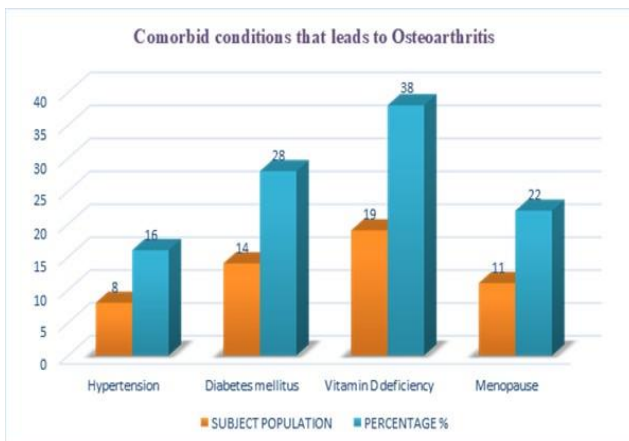


Figure 6: This graph epitomizes the Comorbid conditions associated with OA are as follows:

Vitamin D deficiency (38%)> Diabetes mellitus (28%)>Menopause (22%)>Hypertension (16%)

Table 7: Health Related Quality of Life based on WOMAC score.

	SCORE	PERCENTAGE %
PAIN		
1. Walking		
Never=0	5	10
Rarely =1	4	8
Sometimes =2	9	18
Often=3	11	22
Always =4	21	42
2. Stair climbing		

Never=0	5	10
Rarely =1	11	22
Sometimes =2	8	16
Often=3	19	38
Always =4	7	14
3. Nocturnal		
Never=0	7	14
Rarely =1	8	16
Sometimes =2	12	24
Often=3	18	36
Always =4	5	10
STIFFNESS		
1. Morning stiffness		
Never=0	6	12
Rarely =1	4	8
Sometimes =2	9	18
Often=3	20	40
Always =4	11	22
PHYSICAL FUNCTION		
1. Ascending/ descending stairs		
Never=0	5	10
Rarely =1	7	17.5
Sometimes =2	6	12
Often=3	9	
Always =4	23	
2. Rising from sitting		
Never=0	8	
Rarely =1	5	
Sometimes =2	7	
Often=3	17	
Always =4	13	
3. Sitting or standing		
Never=0	8	16
Rarely =1	6	12
Sometimes =2	10	20
Often=3	17	34
Always =4	9	18
4. Heavy domestic duties		
Never=0	3	6
Rarely =1	4	8
Sometimes =2	6	12
Often=3	26	52
Always =4	11	22

Interpretation: The above WOMAC Score data depicts that people with OA have faced difficulty in performing Heavy Domestic duties (52%) compared to other activities.

Table 8: Effect of Treatment in Subject Population

	Subject population	Outcome
Medications	19	Decreased joint pains
Medications + Lifestyle Changes	31	Decreased joint pains along with improved

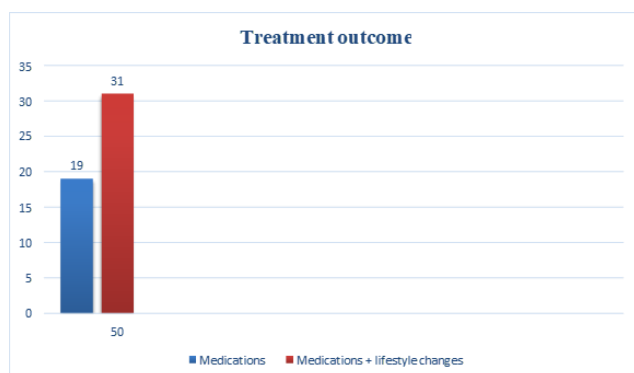


Figure 7: This column diagram interprets that Medications along with lifestyle changes gives better outcome compared to those who were only on medication.

DISCUSSION

Osteoarthritis is the most common musculoskeletal condition, affecting around 10% of the global population over the age of 50. It affects up to 80% of individuals above the age of 65, and its frequency rises with age.

At this cross-sectional observational study, 50 patients with OA in a Tertiary care hospital were evaluated for risk factors, treatment patterns, and health-related quality of life. The mean age was observed to be 54.2. The mean weight was observed to be 27.9.

The research work involves questioning the patients about their activities by WOMAC scoring, patient medical and medication history, their occupation and recording in the Patient Data Collection Form.

The investigation of above information proposes that there is substantial relationship between Age, Gender, Weight, Occupation and Comorbidities.

The association between Gender and OA was studied and interpreted that majority of patients were females (62%). This elucidates its pathogenesis due to differences in Estrogen levels after Menopause, differences in Anatomy (wider hips) which can root stress on the outside of knees.

The relationship between Age and OA was considered and represented that the people with age group of 60-70 (38%), 50-60 (30%), 40-50 (18%), 30-40 (14%), proving that the occurrence of OA in subjects increases with Age. As the people grow old, the water content of the cartilage decreases, which reduces its ability to absorb shock. The amount of Synovial fluid, present between the joints decreases which causes stiffness and inflexibility of joints.

Our study displayed that Farmer, Daily labor followed by Tailor, Home maker, Security guard are at increased risk of developing OA. Farmer (32%), daily labor (22%) has higher risk for developing OA. Whereas Tailor (12%), Home maker, Security guard (8%), Driver, Business, teacher (5%) has lower risk of developing OA.

Due to increased strain on the knees, overweight individuals (42%) were at an increased risk of developing OA in this study, which connecting the prevalence of OA with weight. The mean weight was determined to be 27.9.

The study also found that Arthritis, especially Knee OA, has a significant influence on quality of life. The WOMAC Scale was used to assess the health-related quality of life (HRQOL) of patients with OA, and it was discovered that they had difficulty with Heavy domestic activities (52%), Ascending and Descending stairs (46%), and Walking (42%). Our research also shows that practically all of the participants had worse HRQOL. Patients who work as a farmer followed by everyday labor have a bad quality of life.

After the analysis of treatment patterns in our study we found that Opioid Analgesics like Tramadol (88%), NSAIDs like Diclofenac (82%), Vitamin D/ Calcium supplement (78%) were the most commonly prescribed drugs in treating OA followed by Analgesics like Acetaminophen (34%), Corticosteroids like Methylprednisolone (28%).

In our investigation, we have surveyed up 50 patients, for 2 months. We recommended the patients and educated them by giving diet charts and altered lifestyle. We followed up with patients personally to know if they have made any modifications as advised and if they have seen any improvements. 19 patients did not adhere to any lifestyle changes, but only were on medications as prescribed, while 31 other patients followed the health management and medications as prescribed by physician.

Hence, better treatment outcome in terms of improved mobility and reduced physical disability was achieved in patients with diet regulation, lifestyle changes along with medications.

CONCLUSION AND FUTURE SCOPE

Osteoarthritis is a vital community health related problem, particularly in people after the age of 50 years. In our research, we found a link between OA and age, gender, weight, comorbidities, and occupational characteristics. We also concluded that there is higher risk for Overweight people to develop OA in the later stages of life. We have seen that patients with Vitamin D deficiency were more prone to OA. We also observed that excessive physical activity and heavy workload on the joints, prolonged or repetitive bending and sitting is a risk factor for OA. Long-term use of opioid analgesics (Tramadol) can result in hepatic dysfunction, QT prolongation, and

hypoglycemia, necessitating continuous monitoring in addition to non-pharmacological treatments to improve patients' quality of life.

From WOMAC Score it can be seen that, there is risk accompanied with regular heavy lifting such as in Farmers and Daily labors. We conclude that, as HRQOL of people is poor, health care professionals should strive to improve the physical health of patients with OA and if possible, working for long duration involving stressful physical activities should be evaded.

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