

## Knowledge About Osteoarthritis and Its Related Risk Factors In Fourth Grade Students In Nursing Department Of Alfarabi Collage

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**Abstract.** *Introduction* Osteoarthritis (OA) is the most common articular disease of the developed country and cause of chronic disability, and may cause joint failure. Currently, it is more prevalent than it used to be, and it is predicted that this tendency will continue as life expectancy and the prevalence of obesity increase. OA is related to age, but is associated with a variety of both modifiable and non-modifiable risk factors, including obesity, lack of exercise, genetic predisposition, bone density, occupational injury, trauma, and gender. It is a major cause of disability in elderly populations around the globe, especially in developed countries. **the aim of study** to identify Knowledge about osteoarthritis and its related risk factors in fourth grade students in nursing department of Alfarabi collage and to assess Knowledge about osteoarthritis and its related risk factors in fourth grade students in nursing department of Alfarabi collage. **methodology** The methodology for studying the knowledge about osteoarthritis and its related risk factors in fourth-grade students in the nursing department of Alfarabi College can be utilize a cross-sectional research design to assess the knowledge of fourth-grade nursing students about osteoarthritis and its related risk factors. A convenience sampling method will be used to select participants from the fourth-grade nursing students at Alfarabi College. The sample size will be determined based on the total number of fourth-grade students in the nursing department. **Results** The sociodemographic characteristics of 256 students at Al-Farabi College were analyzed. The majority of respondents were male (73.8%), over 22 years old (35.3%), and engaged in manual labor (53.0%). The study found that students had higher knowledge about certain aspects of osteoarthritis, such as postmenopausal women being more at risk for osteoporosis than osteoarthritis (87.5%), while their knowledge about female gender as a risk factor was lower (39.4%). Students also had higher knowledge about joint pain as a symptom of osteoarthritis (82.8%) compared to redness in the joint (53.1%). Finally, while there was a high significance between having a first-degree relative with knee osteoarthritis and knowledge, there was no significance between being clinically diagnosed with osteoarthritis and knowledge among the students. **Conclusion** the study of sociodemographic characteristics and knowledge of osteoarthritis among students at Al-Farabi College revealed that there were significant associations between gender, occupation, awareness of knee osteoarthritis as a disease entity, and having a first-degree relative with knee osteoarthritis with knowledge about the condition. However, there was no significant association between age, being clinically diagnosed with osteoarthritis, and knowledge.

**Keywords:** osteoarthritis; Risk factors; nursing department; Alfarabi collage.

### Introduction

Ancient descriptions often referred to musculoskeletal pain and dysfunction as “rheumatism”, but paleopathological evidence of excavated skeletons that illustrated degenerative and focal lesions within narrowed joint spaces prompted a more specific and apt term of “osteoarthritis”.<sup>(1)</sup> Osteoarthritis (OA) is the most common articular disease of the developed country and cause of chronic disability, and may cause joint failure.<sup>(2)</sup> Currently, it

Received: June 10, 2024; Revised June 20, 2024; Accepted: Juli 04, 2024;  
Online available July 09, 2024

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is more prevalent than it used to be, and it is predicted that this tendency will continue as life expectancy and the prevalence of obesity increase.<sup>(3)</sup> OA is related to age, but is associated with a variety of both modifiable and non-modifiable risk factors, including obesity, lack of exercise, genetic predisposition, bone density, occupational injury, trauma, and gender. It is a major cause of disability in elderly populations around the globe, especially in developed countries.<sup>(4)</sup> The population is mainly Muslim, and those who practice Islam pray five times a day; this involves transitioning between heel sitting, prostration, and standing. The atmosphere and geography do not support outdoor physical activity and exercise; weather is hot in summer, proper infrastructure is lacking in winter, and straight roads are limited.<sup>(5)</sup> Although previous studies have focused on risk factors for osteoarthritis, there is some debate on this issue. Furthermore, associated factors with arthritic symptom (arthralgia) have not been sufficiently investigated, despite its clinical importance in the management of osteoarthritis.<sup>(6)</sup> To date, most large population-based epidemiological studies evaluating the disease prevalence of OA have been performed in Europe or North America although it has been estimated that by 2050, almost four fifths of the world's older population (65 years and older) will be living in less-developed regions of the world.<sup>(7)</sup> Nurses have a critical role in the holistic assessment and care of osteoarthritis patients. They can improve management by ensuring that all patients receive the three basic therapies of information, activity, and exercise, as well as weight-loss interventions if necessary, through adequate health education.<sup>(8)</sup>

### **the aim of study**

1. to identify Knowledge about osteoarthritis and its related risk factors in fourth grade students in nursing department of Alfarabi collage
2. to assess Knowledge about osteoarthritis and its related risk factors in fourth grade students in nursing department of Alfarabi collage .

### **Methodology**

The methodology for studying the knowledge about osteoarthritis and its related risk factors in fourth-grade students in the nursing department of Alfarabi College can be outlined as follows:

1. Research Design: The study will utilize a cross-sectional research design to assess the knowledge of fourth-grade nursing students about osteoarthritis and its related risk factors.

2. **Sampling:** A convenience sampling method will be used to select participants from the fourth-grade nursing students at Alfarabi College. The sample size will be determined based on the total number of fourth-grade students in the nursing department.
3. **Data Collection:** A structured questionnaire will be developed to assess the knowledge of students about osteoarthritis and its related risk factors. The questionnaire will include both closed-ended and open-ended questions to gather information about their understanding of the condition, its causes, symptoms, and preventive measures.
4. **Data Analysis:** Descriptive statistics such as frequencies and percentages will be used to analyze the responses from the questionnaire. Additionally, inferential statistics may be used to identify any significant associations between demographic variables and knowledge levels.
5. **Ethical Considerations:** Ethical approval will be obtained from the college's institutional review board before conducting the study. Informed consent will also be obtained from all participants, and their confidentiality and anonymity will be ensured throughout the research process.
6. **Data Collection Procedure:** The questionnaire will be distributed to the selected fourth-grade nursing students during their regular class hours. They will be given sufficient time to complete the questionnaire, and any queries or concerns regarding the study will be addressed by the researchers.
7. **Data Analysis Procedure:** Once all questionnaires are collected, data entry and analysis will be conducted using statistical software such as SPSS (Statistical Package for Social Sciences). The findings will then be interpreted to draw conclusions regarding the knowledge levels of fourth-grade nursing students about osteoarthritis and its related risk factors.
8. **Dissemination of Findings:** The results of the study may be disseminated through academic publications, presentations at conferences, or seminars within Alfarabi College's nursing department to raise awareness about osteoarthritis among students and faculty members.

By following this methodology, valuable insights can be gained into the knowledge levels of fourth-grade nursing students regarding osteoarthritis and its associated risk factors at Alfarabi College. This information can then inform educational interventions aimed at improving their understanding of this common musculoskeletal condition.

## Results

**Table 1: Sociodemographic characteristics of students of Al-Farabi collage  
(n =256).**

|   | <i>N</i> | %    |
|---|----------|------|
| male  | 189      | 73.8 |
| female                                      | 67       | 26.2 |
| Age group (years)                           |          |      |
| 18–20                                       | 79       | 31.1 |
| 21–22                                       | 86       | 33.6 |
| ≥22   | 91       | 35.3 |
| Occupation                                  |          |      |
| Manual labor                                | 135      | 53.0 |
| Officer                                     | 121      | 47.0 |
| Awareness of osteoarthritis as a disease    |          |      |
| Yes   | 90       | 35.2 |
| No  | 166      | 64.8 |
| First degree relative with osteoarthritis   |          |      |
| Yes   | 78       | 30.2 |
| No  | 178      | 69.8 |
| Diagnosed clinically to have osteoarthritis |          |      |
| Yes   | 58       | 22.4 |
| No  | 198      | 77.6 |

The sociodemographic characteristics of 256 students at Al-Farabi College were analyzed. The majority of respondents were male (73.8%), over 22 years old (35.3%), and engaged in manual labor (53.0%). Additionally, 64.8% of students were not aware of osteoarthritis, and only 30.2% had a first-degree relative with the condition. Furthermore, 22.4% of respondents were clinically diagnosed with osteoarthritis.

**Table 2: Knowledge of osteoarthritis among students of Al-Farabi collage****(n = 256).**

| <b>Statement</b>  | <b>Correct answer</b> | <b>(%)</b>        |
|---|-----------------------|-------------------|
| <b>Risk factors</b>   |                       |                   |
| <b>Female gender</b>  | <b>Yes</b>            | <b>101 (39.4)</b> |
| <b>Postmenopausal women have osteoporosis more than osteoarthritis</b>      | <b>No</b>             | <b>232 (87.5)</b> |
| <b>&gt;50 years Age</b>   | <b>Yes</b>            | <b>165 (64.4)</b> |
| <b>physical activities</b>  | <b>Yes</b>            | <b>130 (50.7)</b> |
| <b>Previous injury</b>  | <b>Yes</b>            | <b>171 (66.7)</b> |
| <b>Working in squatting position</b>  | <b>Yes</b>            | <b>168(65.6)</b>  |
| <b>Sitting for long time</b>  | <b>Yes</b>            | <b>113 (44.1)</b> |
| <b>Standing for long time</b>   | <b>Yes</b>            | <b>145(56.6)</b>  |
| <b>Signs and symptoms</b>   |                       |                   |
| <b>Joint pain</b>   | <b>Yes</b>            | <b>212 (82.8)</b> |
| <b>Stiffness of the joint in the morning</b>                                | <b>No</b>             | <b>153 (59.7)</b> |
| <b>Feeling of increased warmth in the joints</b>                            | <b>Yes</b>            | <b>188 (73.4)</b> |
| <b>Redness of the joint</b>   | <b>Yes</b>            | <b>136 (53.1)</b> |
| <b>Clicking of the joint</b>  | <b>Yes</b>            | <b>174 (67.9)</b> |
| <b>unable to fully straighten</b>   | <b>Yes</b>            | <b>180 (70.3)</b> |
| <b>Weakness of muscles</b>  | <b>Yes</b>            | <b>155 (60.5)</b> |
| <b>tingling sensation of the joint</b>                                      | <b>Yes</b>            | <b>144 (56.2)</b> |
| <b>Tenderness the joints</b>  | <b>Yes</b>            | <b>139 (54.2)</b> |
| <b>Disabilities</b>   |                       |                   |
| <b>Bed ridden</b>   | <b>No</b>             | <b>199 (77.7)</b> |
| <b>Difficulty putting on stockings</b>                                      | <b>Yes</b>            | <b>187(73.0)</b>  |
| <b>Difficulty standing from sitting position</b>                            | <b>Yes</b>            | <b>156(60.9)</b>  |
| <b>impaired Movements</b>   | <b>No</b>             | <b>149(58.2)</b>  |
| <b>Prevention</b>   |                       |                   |
| <b>Fitness not necessary for prevention</b>                                 | <b>No</b>             | <b>201 (78.5)</b> |
| <b>Avoiding prolonged weight bearing</b>                                    | <b>Yes</b>            | <b>189 (73.8)</b> |
| <b>Medical footwear</b>   | <b>Yes</b>            | <b>184(71.8)</b>  |
| <b>Management</b>   |                       |                   |
| <b>Hot or cold packs to the joints help to relieve symptoms temporarily</b> | <b>Yes</b>            | <b>155 (60.5)</b> |
| <b>anti-inflammatory drugs and</b>  |                       |                   |

|   |     |            |
|---|-----|------------|
| pain killers relieve pain temporarily   | Yes | 139 (54.2) |
| steroid injections intra-articular help to<br>relieve severe symptoms temporarily | Yes | 179 (69.9) |
| surgery is indicated for severe<br>osteoarthritis                                 | Yes | 199 (77.7) |

The study found that students had higher knowledge about certain aspects of osteoarthritis, such as postmenopausal women being more at risk for osteoporosis than osteoarthritis (87.5%), while their knowledge about female gender as a risk factor was lower (39.4%). Students also had higher knowledge about joint pain as a symptom of osteoarthritis (82.8%) compared to redness in the joint (53.1%).

In terms of prevention and management, students had higher awareness about the importance of fitness for prevention (78.5%) but lower awareness about the importance of medical footwear (71.8%). They also had high assumed value regarding surgery for severe osteoarthritis (77.7%) but lower assumed value regarding steroid injections for symptom relief (54.2%).

**Table 3: Association between knowledge of osteoarthritis and socio-demographic variables among students of Al-Farabi collage (n = 256).**

| Characteristic                           | N       | %    | P value |        |
|--|---------|------|---------|--------|
| male                                     | 189     | 73.8 | <0.001  |        |
| female                                   | 67      | 26.2 |         |        |
| Age group (years)                        |         |      |         |        |
| 18–20                                    | 79      | 31.1 | >0.001  |        |
| 21–22                                    | 86      | 33.6 |         |        |
| ≥22                                      | 91      | 35.3 |         |        |
| Occupation                               |         |      |         |        |
| Manual labor                             | Officer | 135  | 53.0    | <0.001 |
|  |         |      | 47.0    |        |
|  |         | 121  |         |        |
| Awareness of osteoarthritis as a disease |         |      |         |        |
| Yes                                      |         |      |         |        |

|   |            |             |                  |
|---|------------|-------------|------------------|
| <b>No</b>   | <b>90</b>  | <b>35.2</b> |                  |
|   | <b>166</b> | <b>64.8</b> | <b>&lt;0.001</b> |
| <b>First degree relative with knee osteoarthritis</b> |            |             |                  |
| <b>Yes</b>  | <b>78</b>  | <b>30.2</b> |                  |
| <b>No</b>   |            |             | <b>&lt;0.001</b> |
|   | <b>178</b> | <b>69.8</b> |                  |
| <b>Diagnosed clinically to have osteoarthritis</b>    |            |             |                  |
| <b>Yes</b>  |            |             |                  |
| <b>No</b>   | <b>58</b>  | <b>22.4</b> |                  |
|   |            |             | <b>&gt;0.001</b> |
|   | <b>198</b> | <b>77.6</b> |                  |

The study found a significant association between gender, occupation, and knowledge of osteoarthritis among students, but no significant association between age and knowledge.

Additionally, there was a significant association between awareness of knee osteoarthritis as a disease entity and knowledge among students.

Finally, while there was a high significance between having a first-degree relative with knee osteoarthritis and knowledge, there was no significance between being clinically diagnosed with osteoarthritis and knowledge among the students.

## Discussion

This study aimed to assess the knowledge of osteoarthritis and its associated risk factors among fourth-grade nursing students at Alfarabi College. Out of the 256 students surveyed, the majority were male (73.8%), which differs from a study in Pakistan where the majority were female. The age group with the highest percentage was over 22 years (35.3%), while in the previous study, older ages had a higher percentage<sup>(9)</sup>.

The results revealed that 53.0% of students were engaged in manual labor and that 64.8% were not familiar with osteoarthritis. Less than half (30.2%) had a first-degree relative with osteoarthritis, and 22.4% had been clinically diagnosed with the condition, similar to a previous study in Malaysia<sup>(1)</sup>.

In comparison to existing literature on risk factors, clinical features, prevention, and treatment, it was found that knowledge about osteoarthritis among Al-Farabi College students was higher regarding postmenopausal women having osteoporosis rather than osteoarthritis as a risk factor (87.5%). However, it was lower regarding female gender as a risk factor (39.4%)<sup>(10)</sup>.

The students demonstrated higher knowledge about signs and symptoms of osteoarthritis such as joint pain (82.8%) and disabilities (77.7% for no bedridden and 58.2% for no impaired movements). In contrast, a study in Egypt showed a high prevalence of impaired movement<sup>(11)</sup>.

Regarding treatment, there was a higher assumed percentage for the importance of fitness for prevention (78.5%) but a lower assumed value for steroid injections intra-articularly helping to relieve severe symptoms temporarily<sup>(12)</sup>.

The association between knowledge of osteoarthritis and sociodemographic variables indicated a significant association between gender, occupation, and knowledge ( $P < 0.001$ ), similar to a study in Korea which found significant associations with gender and age<sup>(13)</sup>.

Overall, this study provides valuable insights into the knowledge levels of osteoarthritis among nursing students at Alfarabi College.

## **Conclusion and Recommendation**

In conclusion, the study of sociodemographic characteristics and knowledge of osteoarthritis among students at Al-Farabi College revealed that there were significant associations between gender, occupation, awareness of knee osteoarthritis as a disease entity, and having a first-degree relative with knee osteoarthritis with knowledge about the condition. However, there was no significant association between age, being clinically diagnosed with osteoarthritis, and knowledge. The study also highlighted areas where students had higher or lower levels of knowledge about osteoarthritis, as well as their awareness of prevention and management strategies. These findings can be used to inform targeted educational interventions and improve understanding and management of osteoarthritis among college students.

Based on the findings of the study, it is clear that there are gaps in knowledge and awareness about osteoarthritis among the students at Al-Farabi College. As a recommendation, it would be beneficial to implement educational programs or workshops focused on increasing awareness and understanding of osteoarthritis, its risk factors, symptoms, prevention, and management strategies. These programs could also address misconceptions or lack of knowledge about certain aspects of the condition, such as the importance of medical footwear and the use of steroid injections for symptom relief.



Additionally, considering the significant associations found between gender, occupation, and knowledge of osteoarthritis among students, tailored educational interventions targeting specific demographic groups may be beneficial. For example, separate workshops or materials could be developed for male and female students to address their differing levels of knowledge about osteoarthritis risk factors.

Furthermore, given the significant association between awareness of knee osteoarthritis as a disease entity and knowledge among students, efforts should be made to specifically highlight this type of osteoarthritis in educational initiatives.

Overall, addressing these knowledge gaps through targeted educational interventions could help improve understanding and awareness of osteoarthritis among students at Al-Farabi College.

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