



Effectiveness of an Educational Program on Nurses Knowledge Concerning Management of Osteoarthritis Patients at Azadi Teaching Hospital

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Abstract Background: Osteoarthritis is the most prevalent joint disease and a leading contributor to disability. It significantly limits patients' capacity to carry out everyday duties. Nurses play a crucial role in helping people with osteoarthritis in hospitals and health facilities. In addition to teaching patients pain management techniques and educating them about the disease. **Objectives:** The aim of the study is to evaluate the effectiveness of nursing education program on Nurses knowledge concerning management of Osteoarthritis Patients at Azadi Teaching Hospital. **Methods:** The present study used a quasi-experimental (one group pretest-posttest) study design during the period between 1 of November, 2025 and 10 of March 2026. A non-probability (purposive) sampling of (30) Nurses who working in Orthopedic, medical, surgical unit and consultation clinics of Rheumatology and Rehabilitation units) in the Azadi Teaching Hospital. The study instrument is composed of six main parts. **Results:** The current study show that the overall assessment of nurses' knowledge about management of osteoarthritis in the pretest show that nurses demonstrating poor to moderate level of overall knowledge with mean score 17.90 and they need a specific educational program about management of osteoarthritis patients. Also, the study concludes that the nurses' overall knowledge increased to good among 70% with mean score 36.07 During the posttest and after engagement in educational program that indicates an effective role of educational program in enhancing nurses' overall knowledge about management of osteoarthritis. **Conclusion:** The study concluded that the educational program significantly improved nurses' knowledge based on posttest with mean ranks reported higher in the posttest comparing to pretest. **Recommendation:** Conducting an educational program related to osteoarthritis patients to improve nurses' knowledge who working at Orthopedic unit and consultation clinics of Rheumatology and Rehabilitation units.

Key Words Educational Program, Nurses Knowledge, Osteoarthritis

INTRODUCTION

The most prevalent and often impairing joint condition is osteoarthritis, a chronic degenerative disease marked by hypertrophic bone changes and progressive cartilage damage in one or more joints. This condition eventually results in fibrillation, fissures and severe ulceration before the entire thickness of articular cartilage disappears, causing joint pain, stiffness and functional limitations [1]. The knees, hips and small hand joints are the peripheral joints most commonly affected. Osteoarthritis is the most prevalent joint disease and a leading contributor to disability, significantly limiting patients' ability to carry out everyday duties, particularly essential tasks [2]. Osteoarthritis can develop as a primary idiopathic condition,

which may be localized or generalized or as secondary osteoarthritis resulting from underlying causes such as trauma, inflammatory illnesses, congenital joint structure anomalies or metabolic disorders like diabetes. According to Gregory *et al.* [3], the cause of osteoarthritis is unknown. Although aging-related risk factors predominate, osteoarthritis may also be caused by metabolic, genetic, chemical and mechanical factors. Depending on which joints-the knee, hip, hands, spine, etc. are impacted and to what extent, the symptoms of osteoarthritis can differ. The most typical symptoms include pain, stiffness, loss of mobility, crepitus, edema, nodules and weakness, which can lead to several consequences that may necessitate surgery [4].

Important outcomes may include pain, impaired function and difficulties doing everyday activities. An individual's expectations and self-efficacy-that is, their confidence in their ability to finish activities and achieve objectives-are closely linked to pain, which is also a complicated biopsychosocial issue and it is linked to alterations in mood, sleep patterns and coping mechanisms. There is frequently a weak correlation between osteoarthritis symptoms and changes demonstrated on X-ray. However, minor joint structural changes can happen with mild symptoms or minor changes can be linked to a great deal of pain. OA is not brought on by aging and does not always worsen, unlike what many people think [5]. Control of pain is essential but depends not only on analgesic treatment but also on the many other aspects of care provided by the health professional [6].

By 2020, Osteoarthritis was the fourth most common cause of disability, according to data from the World Health Organization. It has a major adverse effect on the economy and global health [7]. OA significantly lowers quality of life and is one of the most common chronic diseases affecting older persons in wealthy countries [8]. More recent research by Li *et al.* [9]. shows that OA is the most prevalent musculoskeletal condition affecting those 65 and older. It causes 80% of cases of decreased mobility and 25% of cases of performance impairment, making it difficult to carry out daily tasks. OA affects 9.6% of men and 18% of women over 60, which makes it one of the top 10 most dangerous diseases in wealthy countries [10]. Globally, Osteoarthritis affected 303 million people in 2017 [11]. The most recent global disease burden study indicates that the number of common cases of OA has doubled globally, from 247 million in 1990 to 528 million in 2019. In addition, the medical expenses associated with OA have placed a significant financial strain on healthcare systems, accounting for an estimated 2% of the country's economic output [12]. The prevalence of OA is high in Iraq, especially among the aged and obese. Obesity and physical labor were found to be major risk factors for knee osteoarthritis in Iraqi patients, according to studies done in Al-Mosul [13].

Nurses play a crucial role in helping people with osteoarthritis in hospitals and health facilities. In addition to teaching patients pain management techniques and educating them about the disease, they also motivate patients to adhere to their treatment regimens and maintain an active lifestyle. Nonetheless, numerous studies have demonstrated that nurses frequently lack the Knowledge and skills necessary to provide these patients with care [14], for instance, discovered that many medical personnel were uncertain about how to counsel patients with osteoarthritis regarding pain management, exercise and long-term self-care. Successful pain management in OA requires careful assessment to clarify possible underlying causes and the impact of the pain is having on the patient's life. The management of Osteoarthritis patients presents a significant challenge in healthcare, particularly for nurses, who are at the frontline of patient care [15].

METHODS

This study employed a quasi-experimental (one group pretest-posttest) study design and was conducted at the Azadi Teaching Hospital in (Orthopedic, medical, surgical unit and consultation clinics of Rheumatology and Rehabilitation unit) from the period of 1 November 2025 and 10 March 2026. A non-probability, purposive sampling of Nurses working at hospital units was chosen to collect representative data in Azadi teaching hospital, data were collected through pre- test and post-test. The Nurses are exposed to the nursing educational program. the total number was 30 nurses that were participant in the study. A content validity was established for the present study tools through a panel of 10 experts, the experts were asked to review the study tools and their content as it is sufficient and clear to meet the objectives of the study. The internal consistency and test-retest methods were used to determine the reliability of questionnaire in current study; internal consistency reliability measures the consistency between different items of the instrument. The internal consistency between items was determined by using Cronbach's alpha coefficient. The Statistical Package for Social Science Program (IBM SPSS) version 26.0 was applied to calculate the two methods of reliability; a sample of 10 participants was selected for the purpose of reliability. A questionnaire was created for the study utilizing the self-report approach after the conduction thorough examination of the pertinent literature and identified material in accordance with the goals of scientific research. The questionnaire has 56 items total, divided into 6 parts. which are: Part one: Nurses' Socio-demographic Characteristics. Part two: General Knowledge about Osteoarthritis. Part three: Nurses knowledge toward Risk Factors of OA. Part four: Nurse knowledge toward Diagnosis of OA. Part five: Nurse knowledge toward management of OA. Part six: Nurse knowledge toward management of OA by Patient Education and Lifestyle.

RESULTS

Table 1 provide description of sociodemographic variables of nurses participated in this study (N = 30); the finding reveals that 63.3% of nurses were within age group of 18-27 years and 36.7% within age group of 28-37 years reflecting that nurses are still young. Concerning sex, more of nurses (76.7%) were females and 23.3% of them were males. The level of education refers that half of nurses (50%) were graduated with Bachelor's degree in nursing, 36.7% having nursing Diploma and only 13.3% were postgraduate with master degree in nursing. The years of experience indicates that more of nurses (73.3%) are still beginner and neophyte nurses with less than one years of experience, 26.7% of them having 1-5 years of experience. Regarding workplace, nurses were distributed across various ward and units; the higher proportion were working in medical wards, an equal proportion (26.7%) were seen in surgical and consultation clinics, only 6.7% of nurses were working in orthopedic ward and units. About participation in training courses about osteoarthritis, only 33.3% reported they have participated in such courses, while 66.7% reported no participation.

Table 1: Description of Socio-demographic Variables (SDVs) of Nurses (N = 30)

List	SDVs	No	Percentage
1	Age (Year)	18-27	19
		28-37	11
2	Sex	Male	7
		Female	23
3	Level of education	Nursing Diploma	11
		B.Sc. Nursing	15
		M.Sc. Nursing+	4
4	Years of experience	<1 year	22
		1-5 years	8
5	Ward/Unit	Orthopedic	2
		Medical	12
		Surgical	8
		Consultation clinics	8
6	Training courses about osteoarthritis	Yes	10
		No	20

Table 2 presents the mean scores of items related to nurses' general knowledge about osteoarthritis; the findings during the pretest show disparity in level of knowledge from poor to moderate in most of items and good in some items, the mean scores ranging from 0.00 to 0.77. During the posttest and after engagement in an educational program, nurses demonstrating "good" level of general knowledge among most of items indicating improvement of their knowledge with mean score reaching 0.87. The variance test indicates significant differences in in most items of knowledge between pretest and posttest with p-value ranging from 0.020 to 0.000 indicating effectiveness of educational program in enhancing general knowledge among nurses. Despites differences reported in mean scores of some items (3, 6 and 7) between pretest and posttest, no statistically significant difference has reported.

Table 3 presents the mean scores of items related to nurses' knowledge about risk factors of osteoarthritis; the findings during the pretest show disparity in level of knowledge from poor to moderate in most of items, the mean scores ranging from 0.13-0.70. During the posttest and after engagement in an educational program, nurses demonstrating "good" level of knowledge about risk factors among most of items indicating improvement of their knowledge with mean score increasing to 0.90. The variance test indicates high significant differences in most items of knowledge between pretest and posttest with p-value ranging from 0.009 to 0.000 indicating effectiveness of educational program in enhancing nurses' knowledge about risk factors of osteoarthritis. However, there some differences in mean scores of some items (2 and 10), there are no significant differences between pretest and posttest.

Table 4 presents the mean scores of items related to nurses' knowledge about management of osteoarthritis; the findings during the pretest show disparity in level of knowledge from poor to moderate in most of items, the mean scores ranging from 0.00-0.53 except items 3, 5 and 6 that fell within good level. During the posttest and after engagement in an educational program, nurses

demonstrating "good" level of knowledge among most of items indicating improvement of their knowledge with mean score increasing to 0.90. The variance test indicates high significant differences in all items of knowledge between pretest and posttest with p-value ranging from 0.010-0.000 indicating effectiveness of educational program in enhancing nurses' knowledge about management of osteoarthritis.

DISCUSSION

The present findings from the analysis of the demographic variable Table 1 indicate that the percentage distribution of participants by age groups shows that the majority (n = 23; 76.7%) of the study sample were female. Additionally, the highest percentage (n = 19; 63.3%) of nurses fell within the age group of 18-27 years, while (n = 11; 36.7%) were in the age group of 28-37 years. These results contrast with a study conducted at Zigzag University Hospitals' outpatient rheumatology and rehabilitation clinic in Egypt, which evaluated the impact of introducing an osteoarthritis prevention and management training program on nurses' knowledge and practice. That study found that the majority of participants were male, with most being in the age group of 51-60 years. Conversely, these findings align with a study conducted by Alahmed *et al.* [17].

The study aimed to evaluate the general population's awareness levels, knowledge gaps and misconceptions regarding osteoarthritis (OA) and its risk factors in Hail, Saudi Arabia. The findings revealed that the majority of participants (604, 66.7%) were female. Regarding years of experience in nursing services, the current study reported that the highest percentage (n = 22; 73.3%) of participants had less than one year of experience. This result is inconsistent with a study conducted at the outpatient rheumatology and rehabilitation clinic of Zigzag University Hospitals in Egypt [16], which assessed how introducing an osteoarthritis prevention and management training program affected nurses' knowledge and practice and found that most participants had more than ten years of experience in nursing.

Table 2: Mean Score and Assessments of General Knowledge Items about Osteoarthritis among Nurses (Pre and Post-test) (Number = 30)

List	General Knowledge Scale	Pre-test			Post-test			Variance test	
		f(%)	Mean	Assess	f(%)	Mean	Assess	F	p-value
1	Osteoarthritis is best described as Degenerative joint disease	Incorrect Correct 28(93.3) 2(6.7)	0.07	Poor	5(16.7) 25(83.3)	0.83	Good	84.757	0.000
2	The most common symptom is Joint pain worsens with activity	Incorrect Correct 18(60) 12(40)	0.40	Moderate	6(20) 24(80)	0.80	Good	11.600	0.001
3	Knee and hip joints are commonly affected	Incorrect Correct 8(26.7) 22(73.3)	0.73	Good	5(16.7) 25(83.3)	0.83	Good	.867	0.356
4	Osteoarthritis mainly affects Synovial cartilage	Incorrect Correct 19(63.3) 11(36.7)	0.37	Moderate	9(30) 21(70)	0.70	Good	7.286	0.009
5	The disease progression is usually gradual	Incorrect Correct 12(40) 18(60)	0.60	Moderate	4(13.3) 26(86.7)	0.87	Good	5.800	0.020
6	Peak incidence occurs in Middle-aged and elderly	Incorrect Correct 11(36.7) 19(63.3)	0.63	Moderate	9(30) 21(70)	0.70	Good	.291	0.591
7	Women gender is more affected after age 50	Incorrect Correct 7(23.3) 23(76.6)	0.77	Good	9(30) 21(70)	0.70	Good	.331	0.567
8	A hallmark sign of osteoarthritis is Crepitus	Incorrect Correct 28(93.3) 2(6.7)	0.07	Poor	17(56.7) 13(43.3)	0.43	Moderate	12.668	0.001
9	Symptoms of osteoarthritis include Joint stiffness, Limited movement, Joint deformity	Incorrect Correct 13(43) 17(56.7)	0.57	Moderate	5(16.7) 25(83.3)	0.83	Good	5.364	0.024
10	Primary osteoarthritis is associated with Aging process	Incorrect Correct 30(100) 0(0)	0.00	Poor	19(63.3) 11(36.7)	0.37	Moderate	3.813	0.001

No: Number, %: Percentage, M: Mean of total score, SD: Standard deviation, F: F-statistics, P: Probability, C.S: Comparison significant, Poor: 0.00-0.33, Moderate: 0.34-0.67, Good: 0.68-1.00

Table 3: Mean Score and Assessments of Knowledge Items about Risk Factors of Osteoarthritis among Nurses (Pre and Post-test) (N = 30)

List	Knowledge about Risk Factors of Osteoarthritis Scale	Pre-test			Post-test			Variance test	
		f(%)	Mean	Assess	f(%)	Mean	Assess	F	p-value
1	The strongest risk factor is Old age	Incorrect Correct 15(50) 15(50)	0.50	Moderate	4(13.3) 26(86.7)	0.87	Good	10.666	0.002
2	Obesity mainly affects Knee joints	Incorrect Correct 15(50) 15(50)	0.50	Moderate	9(30) 21(70)	0.70	Good	2.522	0.118
3	Family history is considered Major risk factor	Incorrect Correct 27(90) 3(10)	0.10	Poor	9(30) 21(70)	0.70	Good	16.069	0.000
4	Heavy labor job increases risk	Incorrect Correct 26(86.7) 4(13.3)	0.13	Poor	11(36.7) 19(63.3)	0.63	Moderate	20.847	0.000
5	Previous joint injury can Increase OA risk	Incorrect Correct 20(66.7) 10(33.3)	0.33	Poor	10(33.3) 20(66.7)	0.67	Moderate	7.250	0.009
6	Low body weight is not a risk factor	Incorrect Correct 19(63.3) 11(36.7)	0.37	Moderate	7(23.3) 23(76.7)	0.77	Good	11.286	0.001
7	Female hormones after menopause Increase OA risk	Incorrect Correct 19(63.3) 11(36.7)	0.37	Moderate	6(20) 24(80)	0.80	Good	13.884	0.000
8	High-impact sports may Increase OA risk	Incorrect Correct 21(70) 9(30)	0.30	Poor	9(30) 21(70)	0.70	Good	11.048	0.002
9	Muscle weakness is Sedentary lifestyle leads to OA	Incorrect Correct 21(70) 9(30)	0.30	Poor	5(16.7) 25(83.3)	0.83	Good	23.643	0.000
10	BMI of ≥ 30 score increases risk	Incorrect Correct 9(30) 21(70)	0.70	Good	3(10) 27(90)	0.90	Good	3.867	0.055

No: Number, %: Percentage, M: Mean of total score, SD: Standard deviation, F: F-statistics, P: Probability, C.S: Comparison significant, Poor: 0.00-0.33, Moderate: 0.34-0.67, Good: 0.68-1.00

Table 4: Mean Score and Assessments of Knowledge Items about Management of Osteoarthritis among Nurses (Pre and Post-test) (N = 30)

List	Knowledge about Management of Osteoarthritis Scale	Pre-test			Post-test			Variance test		
		Incorrect	Correct	f(%)	Mean	Assess	f(%)	Mean	Assess	F
1	Non-drug management includes Exercise, Weight loss and Education	Incorrect	Correct	15(50)	0.50	Moderate	5(16.7)	0.83	Good	27.479
				15(50)			25(83.3)			
2	First-line drugs is NSAIDs	Incorrect	Correct	26(86.7)	0.13	Poor	5(16.7)	0.83	Good	2.755
				4(13.3)			25(83.3)			
3	Acetaminophen is used for Pain relief	Incorrect	Correct	8(26.7)	0.73	Good	3(10)	0.90	Good	7.250
				22(73.3)			27(90)			
4	Corticosteroid injection is Local relief	Incorrect	Correct	15(50)	0.50	Moderate	13(43.3)	0.57	Moderate	12.732
				15(50)			17(56.7)			
5	Joint replacement is for Severe OA	Incorrect	Correct	7(23.3)	0.77	Good	5(16.7)	0.83	Good	23.200
				23(76.6)			25(83.3)			
6	Nursing role includes Patient education	Incorrect	Correct	9(30)	0.70	Good	6(20)	0.80	Good	14.372
				21(70)			24(80)			
7	Nurses should encourage Gentle exercise	Incorrect	Correct	22(73.3)	0.27	Poor	8(26.7)	0.73	Good	5.800
				8(26.7)			22(73.3)			
8	Heat therapy is used for Pain relief	Incorrect	Correct	17(56.7)	0.43	Moderate	9(30)	0.70	Good	3.464
				13(43.3)			21(70)			
9	Patient teaching includes Diet control, Weight reduction and Joint protection	Incorrect	Correct	14(46.7)	0.53	Moderate	6(20)	0.80	Good	23.200
				16(53.3)			24(80)			
10	OA pain is best managed by Multimodal approach	Incorrect	Correct	30(100)	0.00	Poor	15(50)	0.50	Moderate	17.762
				0(0)			15(50)			

No: Number, %: Percentage, M: Mean of total score, SD: Standard deviation, F: F-statistics, P: Probability, C.S: Comparison significant, Poor: 0.00-0.33, Moderate: 0.34-0.67, Good: 0.68-1.00

Additionally, this result is inconsistent with a cross-sectional study conducted by Alahmed *et al.* [17]. Osteoarthritis is the most prevalent and often debilitating joint condition. It is a chronic degenerative disease characterized by hypertrophic bone changes and progressive cartilage damage in one or more joints. This condition eventually leads to fibrillation, fissures and severe ulceration, resulting in the complete loss of articular cartilage thickness, which causes joint pain, stiffness and functional limitations [1]. The peripheral joints most commonly affected include the knees, hips and small joints of the hands. Osteoarthritis is a leading contributor to disability, significantly limiting patients' ability to perform everyday tasks, particularly essential activities [2]. Osteoarthritis can develop as a primary idiopathic condition, either localized or generalized or as secondary osteoarthritis due to an underlying cause, such as trauma, inflammatory diseases, congenital joint structural anomalies or metabolic disorders like diabetes. According to Gregory *et al.* [3], the exact cause of osteoarthritis is unknown. While aging-related risk factors are predominant, OA may also arise from metabolic, genetic, chemical and mechanical factors. The symptoms of osteoarthritis can vary depending on which joints-the knee, hip, hands, spine, etc. are affected and to what extent. Typical symptoms include pain, stiffness, loss of mobility, crepitus, edema, nodules and weakness, which can lead to complications that may require surgical intervention [4]. Percentage (65.7%) of participants were not received training course concerning management of osteoarthritis patients. According to the Table 2, findings has presented a descriptive assessment of the second part of nurses' knowledge, related to the nurses' general knowledge about osteoarthritis in pre and post-test for the study sample; the findings during the pretest show disparity in level of knowledge from poor to moderate in most of items and good in some items, the mean scores ranging from 0.00-0.77. During the posttest and after engagement in an educational program, nurses demonstrating "good" level of general knowledge among most of items indicating improvement of their knowledge with mean score reaching 0.87. This result has consistent with a study conducted [16], in Zigzag University Hospitals' outpatient rheumatology and rehabilitation clinic in Egypt to assess how introducing an osteoarthritis prevention and management training program affected nurses' knowledge and practice, who reported that the majority of nurses (82.9%) had poor knowledge regarding osteoarthritis before intervention and the nurse's general knowledge was good level (77.1%) after implementation of the program.

Also, this result has consistent with an observational cross-sectional approach study conducted by Alahmed *et al.* [17] aimed to evaluate the general population's awareness levels, knowledge gaps and misconceptions regarding OA and its risk factors in Hail, Saudi Arabia. The analysis of this study reported a knowledge deficit for participants in general aspect of OA. The study show participants needs additional education on osteoarthritis. While, this result inconsistent with a cross, sectional study conducted by Tawfeeq *et al.* [18]

in Baghdad, AL-Rusafa, to evaluate the knowledge, attitudes and practices of Iraqi doctors, with relation to managing patients with osteoarthritis and how they relate to sociodemographic information, that reveals the knowledge level of the participants knowledge regarding OA was good for specialist physicians (Board). The data analysis of the third part of nurse's knowledge regarding risk factors of osteoarthritis Table 3; the findings during the pretest show disparity in level of knowledge from poor to moderate in most of items, the mean scores ranging from 0.13-0.70. During the posttest and after engagement in an educational program, nurses demonstrating "good" level of knowledge about risk factors among most of items indicating improvement of their knowledge with mean score increasing to 0.90. This result shows inconsistent with a study conducted by Tawfeeq *et al.* [18] in Baghdad, AL-Rusafa, to evaluate the knowledge, attitudes and practices of Iraqi doctors, with relation to managing patients with osteoarthritis and how they relate to sociodemographic information, that reveals the knowledge level of the participants regarding risk factors of OA, The study revealed that more than two third of physician correctly answered the questions that related to cause and risk factors of OA (78.4%). Also, the result of the current study consistent with a study conducted by Tawfeeq *et al.* [18] in Zigzag University Hospitals' outpatient rheumatology and rehabilitation clinic in Egypt to assess how introducing an osteoarthritis prevention and management training program affected nurses' knowledge and practice, who reported that the majority of nurses had poor knowledge before intervention (31.4%) and (42.9 %) incomplete answer about risk factors of osteoarthritis and had good level of knowledge after implementation of the program.. The data analysis of the fourth part of nurse's knowledge regarding Management of osteoarthritis Table 4; the findings during the pretest show disparity in level of knowledge from poor to moderate in most of items, the mean scores ranging from 0.00-0.53 except items 3, 5 and 6 that fell within good level. During the posttest and after engagement in an educational program, nurses demonstrating "good" level of knowledge among most of items indicating improvement of their knowledge with mean score increasing to 0.90. These results concordant with the study conducted in Zigzag University Hospitals' Outpatient rheumatology and rehabilitation clinic in Egypt by Bourne *et al.* [15], to assess how introducing an osteoarthritis prevention and management training program affected nurses' knowledge and practice, who reported that the majority of nurses had poor knowledge about management of OA patients before intervention (n = 35; 100.0%). While after the implementation of educational program the effect is clearly observed through measuring the total mean score that was good (41.36). Additionally, to another study conducted by Bartels *et al.* [19] aimed to evaluate the general population's awareness levels, knowledge gaps and misconceptions regarding OA and its risk factors in Hail, Saudi Arabia. Their finding was, 67.8% agreed that physiotherapy may result in OA symptom improvement. 52.2% agreed that some exercise, such as swimming, is

suitable for OA sufferers. 47.2% reported that intra-articular injection of stem cells or hyaluronic acid is effective as a method to cure OA. However, 50.4% said joint replacement surgery is the ultimate solution for symptom relief, according to these results, which indicated that the majority of participants had inadequate knowledge regarding management of OA, also this study is consistent with the current study. The study suggested an efforts to increase the awareness and knowledge of the Participants through public education.

CONCLUSIONS

Based on the results the study concluded that the overall assessment of nurses' knowledge about management of osteoarthritis in the pretest show that nurses demonstrating poor (46.6%) to moderate (51.4%) level of overall knowledge with mean score 17.90 and they need a specific educational program about management of osteoarthritis patients. Also, the study concluded that the nurses' overall knowledge increased to good among 70% with mean score 36.07 During the posttest and after engagement in educational program that indicates an effective role of educational program in enhancing nurses' overall knowledge about management of osteoarthritis.

Recommendation

Based on the results of the current study the following suggestion were recommended:

- Conducting an educational program periodically and regularly related to management of osteoarthritis patients to improve nurses' knowledge who working in (the Orthopedic unit and consultation clinics of Rheumatology and Rehabilitation unit or for large sample of nurses who working in this units
- Also, the Orthopedic, Rheumatology and Rehabilitation unit should have Booklet contain all information about osteoarthritis, causes, management in Arabic language that provide all the information needed for nursing operations pertaining to osteoarthritis patients

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