

Patients' Knowledge and Practices toward Osteoarthritis Disease

¹Alaa Mohamed E.Isayed, ²Hanaa Abd elhakim Ahmed & ²Hala Mohamed Mohamed

¹Assistant lecture Community Health Nursing Department, Faculty of Nursing, Ain Shams University

² Professor of Community Health Nursing Department, Faculty of Nursing, Ain Shams University

Abstract

Back ground: Osteoarthritis is the most common joint disease and a major cause of disability worldwide. It severely impairs patients' ability to carry out activities of daily livings including basic tasks .**The aim of** this study was to assess patients' knowledge and practices toward osteoarthritis disease .**Research design:** A descriptive analytical study was utilized. **Setting:** This study was conducted at orthopedic outpatients' clinics at El Nil hospital for health insurance in shubra elkheima city. **Sample:** A purposive sample of 77 patients with osteoarthritis was chosen according inclusion criteria. **Tools:** Two tools were used **first tool:** Interviewing questionnaire for patients was used, including three parts: **part (I)** Socio-demographic characteristics about patients. **Part (II)**present history about patients, **part (III)**Patients' knowledge assessment level related to osteoarthritis disease. **Second tool:** Patients' practices assessment level related to osteoarthritis disease as reported by them **Results:** most of patients had unsatisfactory level of knowledge regarding osteoarthritis disease. Most of patients had satisfactory level of practice related to correct postures. More than two thirds of patients had satisfactory level of practice related to activities of daily living (ADLs). **Conclusion:** The study concluded that a positive correlation between patients' knowledge and their practices related to osteoarthritis disease. **Recommendations:** Increasing awareness of patients about osteoarthritis disease through mass media and social networks. Conducting in service training and educational programs periodically and regularly to improve patients' knowledge and practices related to osteoarthritis disease.

Keywords: Knowledge, Practices, Osteoarthritis

Introduction

Osteoarthritis (OA) is a chronic degenerative disorder, the most common and the most frequently disabling joint disorder characterized by hypertrophic bone changes with gradual cartilage damage in one or more joint leads to fibrillation, fissures, gross ulceration and finally disappearance of the full thickness of articular cartilage (Sanchez-Romero, et al.,2018).

Globally, osteoarthritis affected 303 million people in 2017 (James,et al., 2018). It is estimated that 240 million adults worldwide have symptomatic osteoarthritis (Wilkinso and Zeggini,2020). Worldwide, an estimated 500 million people have osteoarthritis (Osteoarthritis foundation international,2020). In Egypt, more than five millions have osteoarthritis (Abdel nasser, et al. 2020).

According to Saberi, et al., (2017) and Lepetsos, et al.,(2019):Osteoarthritis has a multi-factorial etiology and can be considered the product of interplay between systemic factors (age, gender, muscle weakness, bone density and joint laxity) and local factors (overweight, knee injury and repetitive use of joints) all play roles in the development of joint osteoarthritis particularly in the weight-bearing joints. Modifying these factors may reduce the risk of osteoarthritis and prevent subsequent pain and disability.

Symptoms of osteoarthritis vary depending on which joints are affected (knee, hip, hands, spine...) and how severely they are affected. The most common symptoms are pain, stiffness, loss of motion, crepitus swelling, nodules, and weakness leading to many complications may require surgical intervention (Bartels, et al., 2016).

Osteoarthritis disease worsens over time. Joint pain and stiffness may become severe enough to make daily tasks difficult causing joint degeneration, often leads to severe disability (Joseph, et al., 2018).

The goals of osteoarthritis treatment are to treat patient symptoms and slow the progression of the degenerative process, controlling pain and other symptoms, activity modification, improving joint function, correcting potential deformities in the joint, and delaying or avoiding the need for surgery, and optimizing overall health, well-being and quality of life. (Cook and Smith, 2018).

Community health nurse plays a vital role to improve the quality of life for patients with osteoarthritis through providing valuable information and also giving indications to measure the impact of outcomes of health care and changes on the lifestyle, applying measures for pain relief and preventing further loss of function of the affected joints, participating in planning and carrying out the therapeutic regimen, maintaining a positive self-image and performing self-care to the maximum amount possible (Mohsen,et al.,2020) and (Johnson ,2021).

Significance of the Study

Osteoarthritis has been estimated to rise to the fourth leading cause of disability worldwide by 2020. The rising rates of disability highlight the need for implementing preventative measures at early stages of the disease, which would especially benefit subjects at high risk for OA development (Rondanelli, et al., 2020). (OA) considered the third cause of disability in Egypt after cardiovascular diseases and back disorders (ElSayed, et al.,2020). (OA) severely impair the affected individuals' ability to carry out activities of daily livings including basic tasks, ability to work, and reduce physical and social capability (Sabashi, et al.,2021).

Aim of the Study

This study aimed to assess knowledge and practices of patients with osteoarthritis through:

1. Assessing patients' knowledge regarding osteoarthritis disease.

2. Assessing patients' practices regarding osteoarthritis disease (correct postures and activities of daily living).

Research Question: Is there a correlation between patients' total knowledge and their practices regarding osteoarthritis disease?

Subject and Methods

Research design: Descriptive analytical study was used to assess patients' knowledge and practices toward osteoarthritis disease.

Setting:

The study was conducted at orthopedic outpatients' clinics at El.nil hospital for health insurance in Shubra El.kheima city - ELQalyubiyah Governorate, Egypt. This setting is selected especially because it serves a large number of patients with osteoarthritis from different governorates.

Sampling:

The sample was collected through six months. A purposive sample of 77 patients with osteoarthritis was selected according to

inclusion criteria (Adult patients from 40 to 60 years diagnosed with osteoarthritis since A year at least, registered for follow up in the previous mentioned setting, not diagnosed with rheumatoid arthritis and not suffering from any type of physical disabilities or with any type of mental disorders).

Size: According to (Ronser, 2016):

$$n = \left(\frac{Z_{1-\alpha/2} + Z_{1-\beta}}{ES} \right)^2$$

The standard normal deviate for $\alpha = Z\alpha = 1.960$

The standard normal deviate for $\beta = Z\beta = 0.842$

A = 2.500

B = $(Z\alpha + Z\beta)^2 = 7.849$

$$C = (E/S(\Delta))^2 = 0.1024$$

$$AB/C = 76.6491.$$

$$n = 77$$

$$n = \left(\frac{1.96+0.84}{0.1024}\right)^2 = 76.6491 \approx 77 \text{ patients}$$

Sample size was 77 patients to achieve a power of 80% and a level of significance of 5% (two sided), assuming the standard deviation of the differences to be 2.500 between pairs.

The following two tools were used for data collection:

First tool: An interviewing questionnaire composed of three parts.

It was developed by the investigator based on review of the literature and content validated by five experts from community health nursing field - faculty of nursing. It was included the following:

Part (I): Socio-demographic data: such as age, sex, marital status, educational level, occupation, monthly income, source of monthly income, and residence

Part (II): present medical history of patients with osteoarthritis: such as smoking, BMI, family history and which joint is affected.

Body mass index was measured by the researcher and was calculated as following according to **chen,et al.,(2019):**

$$\text{BMI} = \text{Weight (k.g)} / \text{Height (m}^2\text{)}$$

Body mass index was categorized as following:

BMI	Weight status
Below 18.5	Under weight
18.5- 24.9	Normal or healthy weight
25- 29.9	Over weight
30 and Above	Obese

Part (III): Patients' knowledge related to osteoarthritis disease: such as structure of muscle- skeletal system, functions of muscle-skeletal system, definition, risk factors/causes, signs and symptoms, complications, methods of diagnosis, management, and the preventive

measures of osteoarthritis disease. It was closed-ended questions.

Scoring system: composed of 10 questions 1 score for every correct answer and zero score for every incorrect answer.

Total patients' level of knowledge was classified into the following scale, satisfactory level of knowledge from 50%(16Marks) and more, while un satisfactory level of knowledge less than 50%(less than 16Marks)(Ahmed ,2017) .

The second tool: Patients' practice regarding osteoarthritis diseases as reported by the studied patients.

A tool was used to assess the practices of patients with osteoarthritis, it was adapted by the investigator from Western Ontario and McMaster Osteoarthritis Index (WOMAC) .It included the assessment of correct body postures and activities of daily living. It was composed of 56 closed ended questions.

Practice scoring system: Three scoring levels were assigned (1) if the response was never, (2) if the response was some times and (3) if the response was always. These scores were converted in to a percent score. practice level was considered satisfactory level if the percent score was equal to 50% (84Marks) or more and was considered un satisfactory level if the percent score was less than 50%(less than 84Marks) for every item and for the total practice level(Omran,2019).

Operational design:

Preparatory phase:

A review of the current, recent, national and international related literatures covering all aspects of the research subjects using the available text books, journals, nursing magazines and websites were used to get a clear picture of the research problem.

Content validity: the previous tools were tested by five professors from community health nursing department–faculty of nursing –Ain Shams University

Content reliability: the previous tools were tested by Cronbach alpha test of reliability, the tools proved to be strongly reliable tool, ($r = 0.899$) for knowledge and ($r = 0.759$) for practice.

Ethical Considerations:

Ethical committee at faculty of nursing/ Ain Shams University then informal patients' agreement had been taken to be included in the study subject .Before carrying out the study the investigator clarified the aim of the study and its expected outcomes. The study subjects had been secured that all the gathered data will be confidential and will be used for the research purpose only. The study subjects have the right to withdraw from the study whenever they want. When it is possible the study subject would be provided with feedback about the research out comes.

Administrative Design:

An official permission to carry out the study had been obtained from administrators of El Nil hospital for health insurance at Shoubra El kheima city through an issued letter from the dean of faculty of nursing/ Ain Shams University.

Pilot study:

The pilot study was conducted to test the simplicity of language and to evaluate clarity, visibility and applicability of the study tools which used in data collection in addition to the time required to fill each tool. It was carried out on 10% from total sample size of the patients with osteoarthritis (8 patients) which had been included in this study. They were chosen and only from the outpatient orthopedic clinics of El Nil hospital for health insurance at Shoubra Elkheima city and there were no modifications applied on to the study tools.

Field Work

-An agreement letter from the dean of faculty of nursing at first.

-The investigator took approval for conducting the study from the head of outpatient clinics at El Nil hospital for health

insurance at Shoubra Elkheima city. The investigator started with introducing himself and explains the aim of study for the selected patients, assured that the data collected will be confidential and would be only used to achieve the purpose of the study taking in consideration all protective precautions to avoid infection by corona virus for the investigator and for the subjects of the study. The field work was carried out over two days(Saturday, Tuesday or Thursday) per week during morning shift from (10.00am to 1.00pm) in orthopedic outpatient clinics in El Nil hospital for health insurance at Shoubra El kheimacy for six months starting from (the beginning of September 2019) until (the end of february 2020), each patient interviewed individually .Each patient took 30:45 minute to complete the tool. The investigators read questions and wait to fill the questionnaire for patient who can't read and write, while patients who can read and write took questionnaire and filled it by themselves. Questionnaire took about 45 minute for client who can't read and write and 30-35 minute for client who can read and write. The researcher filled (4-5) tools from patients daily.

Statistical analysis

The data obtained was statistically analyzed and presented in number, percentages, tables and diagrams as required and calculations were done by means of statistical software packages namely; "SPSS" version 21 to test the significance of the result obtained .The statistical analysis has included; the arithmetic mean, standard deviation, person correlation coefficient test and proportion probability (p-value).

Results:

Table (1): Shows that, 33.80 % of patients with osteoarthritis aged (45 - <50) years with mean age $48 \pm S.D 5$ years. 68.80% of them were females .81.80 % of them were married .51.90% of them were secondary education. Also 77.90% of them were working in governmental occupation. 67.50% of patients with osteoarthritis had insufficient monthly income. while the occupation was the source of monthly income

for 96.10 % of them and 55.80% of them were living in urban area.

Table (2): shows that , 51.90% of patients with osteoarthritis had family history for the disease,88.30% of them were nonsmoker .While 33.76% of them were obese, 74% of them had knee osteoarthritis and 60 % of them were diabetic.

Figure (1): Indicates that, regarding total knowledge of patients with osteoarthritis ,90.10% of them had un satisfactory level of total knowledge regarding osteoarthritis disease.

Table(3): Illustrated that, 63.60% .33.30% and 66.70% of patients with osteoarthritis respectively had un satisfactory level of practice related to standing, office work and computer using, and driving.

Figure (2):Reflects that, ,90.90% of patients with osteoarthritis had satisfactory level of total practice regarding correct postures.

Table (4): Demonstrates that, 25%, 90.90% and 61.90% of patients with osteoarthritis respectively had un satisfactory level of practice related to house cleaning, brushing teeth and reading. while 41.60% and 37% of them respectively had un satisfactory level of practice related showering and kitchen works.

Figure (3): Reflects that, 70.10% of patients with osteoarthritis had satisfactory level of total practices related to activities of daily livings.

Table (5): Shows that, a positive correlation between total knowledge level of patients with osteoarthritis and their total practice level (p. value < 0.018).

Table (1): Distribution of patients with osteoarthritis according to their socio demographic characteristics. (N=77)

Characteristics	N	%
Age		
<45	18	23.40
45 - <50	26	33.80
50 - <55	20	25.90
≥55	13	16.90
Mean age = 48 ± S.D 5 years		
Gender		
▪ Male	24	31.20
▪ Female	53	68.80
Marital status		
▪ Single	3	03.90
▪ Married	63	81.80
▪ Divorced	4	05.20
▪ Widow	7	09.10
Educational level		
▪ Can't read or write	14	18.20
▪ Can read and write	2	02.60
▪ Preparatory education	11	14.30
▪ Secondary education	40	51.90
▪ High education	10	13.00
Occupation		
▪ Governmental	60	77.90
▪ Private sector	14	18.20
▪ On retire payment	3	03.90
Monthly income		
▪ Sufficient	25	32.50
▪ Insufficient	52	67.50
Source of monthly income		
▪ Occupation	74	96.10
▪ Retired payment	3	03.90
Residence		
▪ Urban area	43	55.80
▪ Rural area	34	44.20

Table (2): Distribution of patients with osteoarthritis according to their present history related to osteoarthritis . (N=77)

Present History	N	%
Family history for osteoarthritis		
▪ Yes	40	51.90
Smoking		
▪ No	68	88.30
Obesity		
▪ Over weight	8	10.39
▪ Obese	26	33.76
Affected Joint*		
▪ Knee	57	74.00
▪ Spine	13	16.90
▪ Hip	11	14.30
▪ Cervical Vertebras	08	10.40
▪ Shoulder	2	02.60
▪ Fingers	2	02.60
Chronic diseases* (n=45)		
▪ Hypertension	16	35.56
▪ Diabetes	27	60.00
▪ Heart diseases	13	28.88

*Total items are not mutually exclusive

Figure (1): Distribution of patients with osteoarthritis regarding to their total knowledge regarding osteoarthritis disease . (N=77)

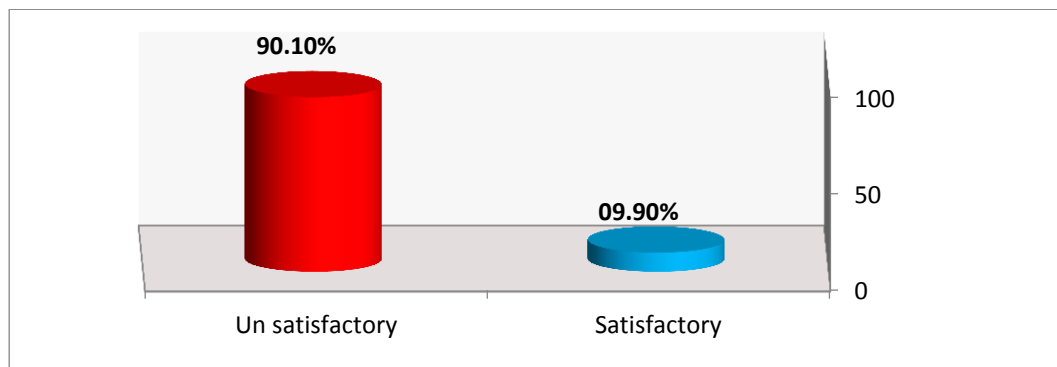


Table (3): Distribution of patients with osteoarthritis regarding practices of correct postures. (N=77)

Items	Satisfactory		Un satisfactory	
	N	%	N	%
Standing	28	36.40	49	63.60
Sitting	75	97.40	2	02.60
Walking	71	92.20	6	07.80
Walking with crutch (n=27)	25	92.60	2	07.40
Sleeping	70	90.90	7	09.10
Office work and Computer using (n=21)	14	66.70	7	33.30
Lifting a weight off the ground	73	94.80	4	05.20
Lifting Bags	72	93.50	5	06.50
Driving (n=15)	5	33.30	10	66.70
Pray (n=37)	30	81.10	7	18.90

Figure (2): Distribution of patients with osteoarthritis regarding to total practice of correct postures(N=77).

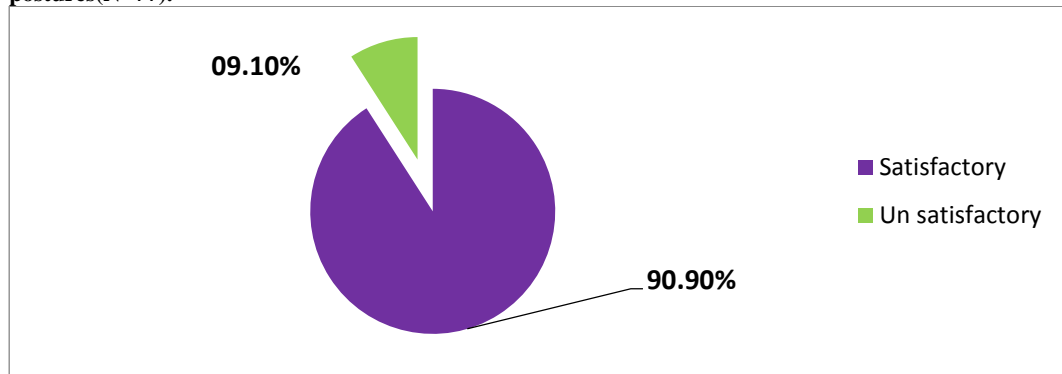


Table (4):Distribution of patients with osteoarthritis regarding activities of daily living (N=77)

Items	Satisfactory		Un satisfactory	
	N	%	N	%
Washing (n=33)	33	100.00	Zero	Zero
Ironing (n=47)	43	91.50	4	08.50
House Cleaning (n=52)	39	75.00	13	25.00
Brushing teeth	7	09.10	70	90.90
Wearing clothes and shoes (n=74)	73	98.60	1	01.40
Reading (n=63)	24	38.10	39	61.90
Showering	45	58.40	32	41.60
Kitchen works (n=73)	46	63.00	27	37.00

Figure (3): Distribution of patients with osteoarthritis regarding to total practices of activities of daily living (N=77)

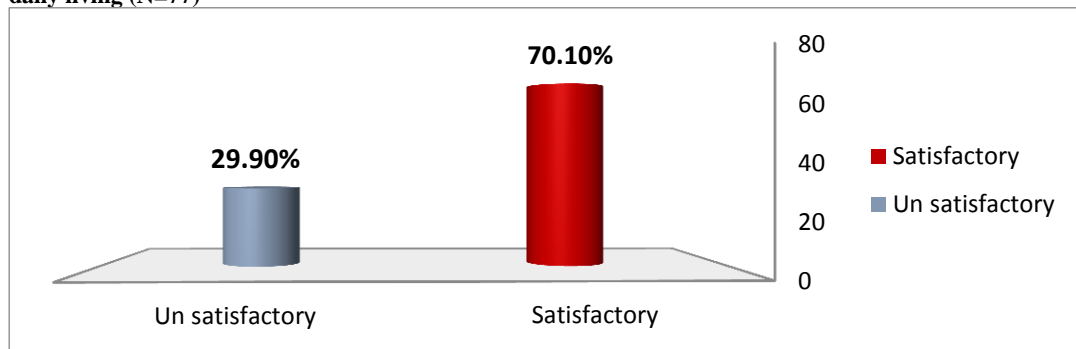


Table (5): Correlation between total knowledge level - total practices level among patients with osteoarthritis (N=77)

Items	Practice	
	R	P
Knowledge	0.270	0.018*

P. Significant (p≤ 0.05).

*H.S

Discussion

Part I: characteristics and present history of the study sample

This study aimed to assess knowledge and Practices (correct postures and activities of daily living of patients with osteoarthritis.

Considering socio- demographic data, the present study revealed that slightly more than one third of the study sample were aged

from 45 to less than 50 years, with the mean age (48 ± 5 years). This finding is in disagreement with the study conducted by **Ahmed, et al., (2018)** on demographic profile, clinical and analysis of osteoarthritis patients in Surabaya and found that 43% of the study sample were aged (60-69) years. This finding also in disagreement with the study conducted by **Kan, et al., (2019)** on non-surgical treatment of osteoarthritis in China and found the mean age of study sample was (63.3 ± 7.4).

The difference may be related to lack of the community awareness about risk factors and complications of osteoarthritis disease resulting in having osteoarthritis disease became at an earlier age, also may be related to health habits, health behaviors and gene type of the high risk group.

Regarding gender among the study sample, the results revealed that, more than two thirds of the study sample were females. This result is in the same line with the study conducted by **Mahir, et al., (2016)** on the impact of knee osteoarthritis on the quality of life in Morocco and found that 80% of the study sample were females. This result also in agreement with the study conducted by **Nawito, et al., (2018)** on Nottingham health profile assessment of health-related quality of life in primary knee osteoarthritis patients: Relation to clinical features and radiologic score in Egypt and found that 66% of the study sample were females. The similarity proved that, osteoarthritis diseases is more common in females than males.

Regarding marital status, the current study found the majority of the study sample were married. This result is in accordance with the study conducted by **Abd Allah, et al., (2017)** on effect of lifestyle modification intervention program among adults suffering from osteoarthritis knee in Egypt and found that 81.3% of the study sample were married. This result also in agreement with the study conducted by **Fatah, et al., (2019)** on effect of contrast hydrotherapy on pain intensity and quality of life outcomes for patients with knee osteoarthritis in Egypt and found that 82.2% of the study sample were married.

Regarding educational level among study sample, the results revealed that, slightly more than half of the study sample was secondary education. This result is in the same line with the study conducted by **Ramadan, et al., (2016)** on the impact of physical exercise on daily living activities among women with early osteoarthritis in Egypt and found that 43.5% of the study sample was highly educated. This result is in contrast with the study conducted with **Jiao, et al., (2021)** on the

relationship between mental health / physical activity and pain / dysfunction in working-age patients with knee osteoarthritis being considered for total knee arthroplasty in China and found that 45.31% of the study sample were with low educational level. The difference may be related to different sample settings of each study for example, the current study was conducted in health insurance hospital in urban area.

As regard occupation, more than three quarters of the current study were working in governmental occupation. This result is in contrast with the study conducted by **Kawano, et al., (2015)** on assessment of quality of life in patients with knee osteoarthritis in Brazil and found that 64% of the study sample were retired. This result also in contrast with the study conducted by **France, et al., (2020)** on the moderating role of pain catastrophizing on the relationship between partner support and pain intensity: a daily diary study in patients with knee osteoarthritis in USA and found that 45.5% of the study sample were retired. This difference may be related to the inclusion criteria of the current study (age from 40 to 60 years), that age is not the age of retirement in Egypt.

In relation to monthly income, the current study found that more than two thirds of the study sample had insufficient monthly income. This result is in disagreement with the study conducted by **Kim, et al., (2016)** about the association between knee osteoarthritis, cardiovascular risk factors, and the Framingham risk score in South Korea and found that 39.5% of the study sample had low monthly income and 37.6% had middle low monthly income. This result disagreed also with the study

conducted by **Khasal, et al., (2019)** on assessment of level of depression in patient with osteoarthritis at handicap center in Iraq and found that 33.3% of the study sample had insufficient monthly income. Insufficient monthly income may force population to work and also may affect healthy nutritional habits, living conditions periodic check up or even seeking for health care services.

The findings of the present study showed that , more than half of the study sample were living in urban area. This result is in agreement with the study conducted by **Park, et al.,(2017)** on prevalence of symptomatic hip, knee, and spine osteoarthritis nationwide health survey analysis of an elderly Korean population in Korea and found that 56.5% of the study sample were living in urban area. This result also in the same way with the study conducted by **Lekpa, et al.,(2020)** about the clinical features of women with knee osteoarthritis at diagnosis in Cameroon and found that 75.5% of the study sample were living in urban area. This similarity may due to specific region of hospital in Elkalubeia governorate, from which the sample were collected and which serves a large number of population from different governorates.

According to the family history for osteoarthritis, the present study indicated that, slightly more than half of the study sample had a family history for osteoarthritis. This result in agreement with the study conducted by **Van Tunen, et al., (2018)** on association of osteoarthritis risk factors with knee and hip pain in a population-based sample of 29–59 year olds in Denmark and found that 44% of the study sample had family history for osteoarthritis. This result in the same direction with the study conducted by **Landsmeer, et al., (2019)** on predicting knee pain and knee osteoarthritis among overweight women in Netherlands and found that 48% of the study sample had a family history for osteoarthritis.

This similarity may be related to cartilage extracellular matrix structural genes and the genes related to bone density which have implication in disease and proved that, family history for osteoarthritis considered a strong risk factor for the disease

In relation to smoking, the present study reflected that, the majority of the study sample was nonsmoker. .This result contraindicated with the study conducted by **Moghimi, et al., (2019)** on risk factors of knee osteoarthritis in Pakistan and found that 55.3% of the study sample were smokers. This result also contraindicated with the study conducted by **Kwon,et al., (2020)** on cigarette smoking and knee osteoarthritis among the elderly in Korea and found that 81.3% of the study sample were smokers. The difference may due to culture ,traditions and attitude differences between countries and individuals. Smoking become one of the major contributors to existing socio economic disparities in quality of life, morbidity and mortality

The current study illustrated that, one third of the study sample were obese. This result in the same direction with the study conducted by **Törmälehto,et al., (2019)** on eight-year trajectories of changes in health-related quality of life among patient with knee osteoarthritis in Finland and found that 33.3% of the study sample were obese . Also in agreement with the study conducted by **Magnusson,et al.(2019)** on nature vs. nurture in knee osteoarthritis–the importance of age, sex and body mass index in Sweden and found that 29.5% of the study sample were obese. This accordance may be due to sedentary life style ,lack of regular exercise and follow a healthy diet ,and highlighted that , obesity is one of the risk factors for osteoarthritis disease.

The present study clarified that, slightly less than three quarters of the study sample had knee osteoarthritis. This result is in agreement with the study conducted by **Kendzerska,et al., (2018)** on the impact of hip and knee osteoarthritis on the subsequent risk of incident diabetes in Canada and found that 80% of the study sample had knee osteoarthritis. This result also in agreement with the study conducted by **Schnitzer, et al., (2019)** on the effect of tanezumab on joint pain, physical function, and patient global assessment of osteoarthritis among patients with osteoarthritis of the hip or knee in USA and found that 80% of the study sample had knee osteoarthritis. It may be due to that, knee osteoarthritis is the most common type of osteoarthritis.

The current results revealed that, less than two thirds, more than one third and more than one quarter respectively had diabetes, hypertension and heart diseases. This finding in contrast with the study conducted by **Courties, et al.,(2017)** on coronary heart disease is associated with a worse clinical outcome of hand osteoarthritis in France and found that 9%, 48% and 9% of the study sample respectively had diabetes, hypertension and heart diseases. This result also contraindicated with the study conducted by **Eymard, et al., (2018)** on stating use and knee osteoarthritis progression in United kingdom and found that 11.3%, 69 % and 19.7% of the study sample respectively had diabetes, hypertension and heart diseases. The difference may be due to high prevalence rate of diabetes and hypertension in Egypt . May be due to un healthy life style and confirm that diabetes is one of risk factors for osteoarthritis.

Part II: Knowledge of patients regarding osteoarthritis disease

In relation to total satisfactory level of knowledge the results revealed that, less than tenth of the study sample had total satisfactory level of knowledge. This result supported by the study conducted by **Elshamy, et al., (2018)** on impact of implementing prevention and management osteoarthritis training program on improving nurses' knowledge and practice in Egypt and found that ,82% had a poor level of total knowledge. This result also in agreement with the study conducted by **Alyami, et al., (2020)** on general population knowledge about osteoarthritis and its related risk factors in Saudi Arabia and found that, Low level of knowledge regarding osteoarthritis disease among Jeddah population. This result may be due to lack of community and patient awareness about osteoarthritis.

Part III: Practice of patients regarding osteoarthritis disease

Regarding satisfactory level of practice related to correct posture the present study displayed that, more than one third of the study sample had satisfactory level of practice related to standing, the most related to sitting, walking, lifting bags. And lifting weight of the ground .

These results in the same direction with the study conducted by **Elsayed, (2017)** on the effect of educational intervention about work related musculoskeletal disorders on restaurant workers in Toshiba Alarabi factories at Benha city in Egypt and found that 27.9%,30.2%,30.2% and 20.9% had satisfactory level of practice respectively related to standing, sitting, lifting weight off the ground and lifting bags. These results in contrast with the study carried out by **Ashfaq, et al., (2020)** on gender dependent disparity between symptoms and consequences among osteoarthritis patients in Pakistan and found in the study sample that 33% had satisfactory level of practice related to sitting and walking . As well as in agreement with the current study as 38% had satisfactory level of practice related to standing.

Concerning total satisfactory level of practice related to correct posture , the results of the present study showed that , the most of the study sample had satisfactory level of practice. This result agreed with the study established by **Kato,et al., (2020)** on the improvement in gait asymmetry during nordic walking in patients with lower extremity osteoarthritis in Japan and informed that improvement of gait asymmetry can be an effective approach to prevent osteoarthritis deterioration. This result also supported through the study conducted by **Vassåon et al., (2020)** on level of pain, muscle strength and posture: effects of PBM on an exercise program in women with knee osteoarthritis in Brazil and informed that intervention program was able to improve posture changes with high statistical difference between pre and post intervention.

Sitting, standing and walking with proper alignment improves blood flow, keeps nerves and blood vessels healthy, supports muscles, ligaments, and tendons. patient who make a habit of using correct posture are less likely to experience related muscle or joint pain

Regarding satisfactory level of practice related to activities of daily living the present study illustrated that, all the study sample had satisfactory level of practice related to washing clothes, the most had satisfactory level of practice related to wearing clothes, three quarter

had satisfactory level of practice related to house cleaning, less than three fifth had satisfactory level of practice related to showering. These results in contrast with the study conducted by **Amaral et al., (2018)** on assistive devices: an effective strategy in non-pharmacological treatment for hand osteoarthritis in Brazil and found that 36%, 48.7%, 32% and 51.5% had satisfactory level of practice respectively related to washing clothes, sweeping house ,bathing and wearing clothes. These results in disagreement with the study conducted by **Iqbal, et al., (2020)** on association of knee osteoarthritis with difficulty during activities of daily life in elderly females in Pakistan and found in the study sample that , 53% and 41.7% had difficulties respectively related to wearing clothes and with heavy domestic duties .

In relation to total satisfactory level of practices related to activities of daily living the current study demonstrated that , more than two thirds had total satisfactory level of practices. This result agreed with the study established by **Peeler & Ripat (2018)** on the effect of low-load exercise on joint pain, function, and activities of daily living in patients with knee osteoarthritis in Canada and stated that program can be used to help safely and effectively manage joint pain and symptoms associated with normal activities of daily living in patients diagnosed with osteoarthritis. This result supported through the study conducted by **Kumarahewa & Amarungna, (2020)** on effectiveness of quadriceps muscle strengthening on knee joint stability and activities of daily living in patients with knee joint osteoarthritis in Sri lanka and stated that program could improve the activities of daily living in patients with osteoarthritis.

Limitations in ADLs vary according to site and sex and these differences should be considered in health care services. These result support the requirement for functional assessment and intervention programs to prevent worsening functional decline in individuals with osteoarthritis.

Part IV: Correlation between study variable :the results reflected positive correlation between total knowledge and total practice of patients with osteoarthritis. This

result in accordance with the study conducted by **Ganji,et al.,(2018)** on the effect of self-management educational program on pain intensity among elderly patients with knee osteoarthritis in Iran and stated that appropriate knowledge and awareness improved secure and correct practices ,that improved patients' performance and enhanced patients' quality of life.

Conclusion:

Based on the findings of the present study, it can be concluded that, most of patients had unsatisfactory total knowledge regarding osteoarthritis disease. Most of patients had satisfactory total practice related to correct postures. More than two thirds of patients had satisfactory total practice related to activities of daily living (ADLs).There was a positive correlation between knowledge of patients and their practices related to osteoarthritis disease

Recommendations:

Based on the findings of the present study the researcher recommended that:

- 1- Increasing awareness of the patients about osteoarthritis disease through mass media and social networks.
- 2- Conducting in service training and educational programs periodically and regularly to improve patients' knowledge and practices related to osteoarthritis disease.
- 3-Further study include larger sample to generalize the results in Egypt.

References

- Abd Allah, E., Aly, A., Hagrass, S., and Hassanin, A. (2017):** Effect of Lifestyle Modification Intervention Program Among Adults Suffering from Osteoarthritis knee. IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN, 2320-1959.
- Abdelnasser, N., Moneim, A., and Fouad, R.,(2020):**TheRelationshipBetween Environmental Factors and Health-Related

- Functional Disability of Older Adults With Osteoarthritis. In The 1st International Scientific Meeting on Public Health and Sports (ISMOPHS2019) (pp.2630).AtlantisPress.
- Ahmad, I. W., Rahmawati, L. D., and Wardhana,T.,(2018):** Demographic profile, clinical and analysis of osteoarthritispatients in Surabaya. *Biomolecular and Health Science Journal*, 1(1), 34-39.
- Ahmed,f,h.,(2017):**Self Care For Prevention Of Recurrence Cerebrovascular Stroke, PHD thesis,Ain shams university,P.p.76.
- Alyami, A. H., Alswat, M. M., Omer, I. A., and Ahmed, M. ,(2020):** General population knowledge about osteoarthritis and its related risk factors in Jeddah Saudi Arabia. *Saudi medical journal*, 41(5), 516.
- Amaral,S., Duarte, P., Barros, S., and Marques, C.,(2018):** Assistive devices: an effective strategy in non-pharmacological treatment for hand osteoarthritis—randomized clinical trial. *Rheumatologyinternational*, 38(3), 343-351.
- Ashfaq, M., Rizwan, B., Khalid, S., and Aslam, M.,(2020):**Gender Dependent Disparity between Symptoms and Consequences among Osteoarthritis Patients. *East African Scholars Journal of Medical Sciences Volume-3 . Issue-4*.
- Bartels, M., Juhl, B., Christensen, R., and Hagen, B., (2016):**Aquatic exercise for the treatment of knee and hip osteoarthritis. *Cochrane Database of Systematic Reviews*, (3) .
- Chen, H., Deng,Y., and Li,S., (2019):**Relation of Body Mass Index Categories with Risk of Sudden Cardiac Death A Systematic Review and Meta-Analysis. *International heart journal*, 60(3), 624-630.
- Cook, C. S., and Smith, P. A. (2018):**Clinical update: why PRP should be your first choice for injection therapy in treating osteoarthritis of the knee. *Current reviews in musculoskeletal medicine*, 11(4), 583-592.
- Courtias,A., Sellam, J., Maheu, E., Cadet, C., and Berenbaum, F., (2017):** Coronary heart disease is associated with a worse clinical outcome of hand osteoarthritis: a cross-sectional and longitudinal study. *RMD open*, 3(1), e000344.
- ElSayed, M., Al Sebaee, A.,Mohammed, A.,andNawito, O., (2020):**Effect of Lavender Oil Massage on Pain among Patients with Knee Osteoarthritis. *EXECUTIVE EDITOR*, 11(01), 304.
- Elsayed, H. A. E.(2017):** Effect of Educational Intervention about Work Related Musculoskeletal Disorders on Restaurant Workers in Toshiba Alarabi Factories at Benha City. *International Journal of Novel Research in Healthcare and Nursing Vol. 4(3)*, P.p: 1-15.
- Elshamy,F.,Abdelhamed, M., and Sadawy, S.,(2018):**Impact of Implementing Prevention and Management Osteoarthritis Training Program on Improving Nurses’ Knowledge and Practice. *Journal of American Science*, 14(10).
- Eymard, F., Parsons, C., Edwards, M. H., and Richette, P., (2018):**Statin use and knee osteoarthritis progression: Results from a post-hoc analysis of the SEKOIA trial. *Joint Bone Spine*, 85(5), 609-614
- Fatah, E., Ibrahim, M., Weheida, S. M., andMekkawy, M. M.,(2019):**Effect of Contrast Hydrotherapy on Pain Intensity And Quality Of Life Outcomes For Patients With Knee Osteoarthritis. *Assiut Scientific Nursing Journal*, 7(16), 35-42.
- France,R., Ysidron, W., Slepian, M., and Evans, R. T. (2020):** Pain resilience and catastrophizing combine to predict functional restoration program outcomes. *Health Psychology*, 39(7), 573.
- Ganji, R., Pakniat, A., Armat, M. R., and Mortazavi, H., (2018):**The effect of self-management educational program on pain intensity in elderly patients with knee osteoarthritis: A randomized clinical trial. *Open access Macedonian journal of medical sciences*, 6(6), 1062.
- Iqbal,F., Nawaz, A., and Fatima, A. (2020):**Association of Knee Osteoarthritis with Difficulty During Activities of Daily Life in Elderly Females: A Cross Sectional Study: *JRCRS-2019-11-064. Journal Riphah College of Rehabilitation Sciences*, 1-8.
- James SL, Abate D, Abate KH ., (2018):**GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic

- analysis for the Global Burden of Disease Study 2017. *Lancet*. 2018;392(10159):1789–1858.
- Jiao, J., Tang, H., Zhang, S., Qu, X., and Yue, B., (2021):** The relationship between mental health/physical activity and pain/dysfunction in working-age patients with knee osteoarthritis being considered for total knee arthroplasty: a retrospective study. *Arthroplasty*, 3(1), 1-10.
- Johnson, C. B., (2021):** A Personalized Shared Decision-Making Tool for Osteoarthritis Management of the Knee. *Orthopedic Nursing*, 40(2), 64.
- Joseph, B., McCulloch, E., Nevitt, C., Neumann, J., and Link, M., (2018) :** Tool for osteoarthritis risk prediction (TOARP) over 8 years using baseline clinical data, X-ray, and MRI: Data from the osteoarthritis initiative. *Journal of Magnetic Resonance Imaging*, 47(6), 1517-1526.
- Kan, S., Chan, K., Yan, H., Chiu, Y., and Ho, T., (2019):** Non-surgical treatment of knee osteoarthritis. *Hong Kong Medical Journal*. doi.org/10.12809/hkmj187600
- Kato, N., Fukusaki, C., Leetawesup, K., Kadokura, Y., and Ishii, N., (2020):** Improvement in gait asymmetry during Nordic walking in patients with lower extremity osteoarthritis. *The Journal of Physical Fitness and Sports Medicine*, 9(2), 65-73.
- Kawano, M., Araújo, A., Castro, C., and Matos, M. A. (2015):** Assessment of quality of life in patients with knee osteoarthritis. *Acta ortopedica brasileira*, 23, 307-310
- Kendzierska, T., King, K., Lipscombe, L., and Hawker, A., (2018):** The impact of hip and knee osteoarthritis on the subsequent risk of incident diabetes: a population-based cohort study. *Diabetologia*, 61(11), 2290-2299.
- Khasal, A., Naser, M., and Dabis, H. A. (2019):** Assessment of Level of Depression in Patient with Osteoarthritis at Handicap Center in Al-Nasiriyah City. *Indian Journal of Public Health*, 10(6), 61.
- Kim, S., Shin, S., Lee, J., Lee, J., and Ha, I. H. (2016):** Association between knee osteoarthritis, cardiovascular risk factors, and the Framingham Risk Score in South Koreans: a cross-sectional study. *PLoS One*, 11(10), e0165325.
- Kumarahewa, C. V., and Amaratunga, H. A. (2020):** Effectiveness of quadriceps muscle strengthening on knee joint stability and activities of daily living in patients with knee joint osteoarthritis. *Sri Lanka Anatomy Journal*, 4(1).
- Kwon, M., Yang, H., Park, K., and Lee, W. S. (2020):** Cigarette smoking and knee osteoarthritis in the elderly: Data from the Korean National Health and Nutritional Examination Survey. *Experimental gerontology*, 133, 110873
- Landsmeer, L., Runhaar, J., van Middelkoop, and Bierma-Zeinstra, S. M. (2019):** Predicting knee pain and knee osteoarthritis among overweight women. *The Journal of the American Board of Family Medicine*, 32(4), 575-584.
- Lekpa, F. K., Kamkui, A. T., Luma, H. N., and Choukem, P., (2020):** "AB0869 clinical features of women with knee osteoarthritis at diagnosis in cameroon, sub-saharanafrica." *annual of the rheumatic disease* vol(79): 1740-1741.
- Lepetsos, P., Papavassiliou, K. A., and Papavassiliou, A. G. (2019):** Redox and NF-κB signaling in osteoarthritis. *Free Radical Biology and Medicine*, 132, 90-100.
- Magnusson, K., Turkiewicz, A., and Englund, M. (2019):** Nature vs nurture in knee osteoarthritis—the importance of age, sex and body mass index. *Osteoarthritis and cartilage*, 27(4), 586-592.
- Mahir, L., Belhaj, K., Zahi, S., and El Fatimi, A. (2016):** Impact of knee osteoarthritis on the quality of life. *Annals of physical and rehabilitation medicine*, 59, e159.
- Moghimi, N., Rahmani, K., Delpisheh, and Afkhamzadeh, A., (2019):** Risk factors of knee osteoarthritis: A case-control study. *Pakistan journal of medical sciences*, 35(3), 636.
- Mohsen, M. M., Eltomy, E. M., & Riad, N. A. (2020):** Health Related Quality of Life Following Dietary and Exercise Interventions among Women with Knee Osteoarthritis. *American Journal of Nursing Research*, 8(1), 27-37.
- Nawito, Z. O., El-Azkalany, G. S., and El-Sayad, M., (2018):** Nottingham health profile assessment of health-related quality of life in primary knee osteoarthritis patients: Relation to clinical features and radiologic score. *The Egyptian Rheumatologist*, 40(4), 265-268.

- Osteoarthritis foundation international**, (2020):<https://www.oaffoundation.com/en/what-is-osteoarthritis/>
- Omran,a,ab.**,(2019): Self Care Program For Improving Practices Among Postpartum Women In Rural Areas, PHD thesis,Ain shams university,P.p.84.
- Park, H., Hong, Y., Han, K., Suh, W., and Han, W.**, (2017): Prevalence of symptomatic hip, knee, and spine osteoarthritis nationwide health survey analysis of an elderly Korean population. *Medicine*, 96(12).
- Peeler, J., and Ripat, J.** (2018): The effect of low-load exercise on joint pain, function, and activities of daily living in patients with knee osteoarthritis. *The Knee*, 25(1), 135-145.
- Ramadan, S., Ali, S., and Aboushady, N.**, (2016): Impact of physical exercise on daily living activities among women with early osteoarthritis. *Egyptin Nursing Journal*, 13(3), 186.
- Rondanelli, M., Riva, A., Allegrini, P., &Perna, S.**, (2020):The Use of a New Food-Grade Lecithin Formulation of Highly Standardized Ginger (*Zingiberofficinale*) and *Acmellaoleracea* Extracts for the Treatment of Pain and Inflammation in a Group of Subjects with Moderate Knee Osteoarthritis. *Journal of pain research*, 13, 761.
- Rosner ,B.**,(2016):Fundamentals of Biostatistics. 8th ed. Duxbury Press;Page 281.
- Sabashi, K., Ishida, T., Matsumoto, H., Tohyama, H.**, (2021): Dynamic postural control correlates with activities of daily living and quality of life in patients with knee osteoarthritis. *BMC musculoskeletal disorders*, 22(1), 1-8.
- Saberi, F., Zuiderwijk,E., Versteeg, and van Meurs, B.**, (2017): Cam deformity and acetabular dysplasia as risk factors for hip osteoarthritis. *Arthritis & Rheumatology*, 69(1), 86-93
- Sánchez-Romero, A., Pecos-Martín, D., Calvo-Lobo, C., and Fernández-Carnero, J.**, (2018): Effects of dry needling in an exercise program for older adults with knee osteoarthritis: A pilot clinical trial. *Medicine*, 97(26).
- Schnitzer, J., Easton, R., Pang, and Verburg, K. M.**, (2019):Effect of tanezumab on joint pain, physical function, and patient global assessment of osteoarthritis among patients with osteoarthritis of the hip or knee: a randomized clinical trial. *Jama*, 322(1), 37-48.
- Törmälehto, S., Aarnio, E., Mononen, M. E., Arokoski and Martikainen, J. A.** (2019): Eight-year trajectories of changes in health-related quality of life in knee osteoarthritis: Data from the Osteoarthritis Initiative (OAI). *PloS one*, 14(7), e0219902.
- Van Tunen, A., Peat, G., Bricca, A., Larsen, and Thorlund, J. B.**, (2018): Association of osteoarthritis risk factors with knee and hip pain in a population-based sample of 29–59 year olds in Denmark: a cross-sectional analysis. *BMC musculoskeletal disorders*, 19(1), 1-11
- Vassão, G., Silva, A., de Souza, C., and Parisi, R.**, (2020): Level of pain, muscle strength and posture: effects of PBM on an exercise program in women with knee osteoarthritis—a randomized controlled trial. *Lasers in medical science*, 35(9), 1967-1974.
- Wilkinson, J. M., and Zeggini, E.**n (2020): The Genetic Epidemiology of Joint Shape and the Development of Osteoarthritis. *Calcified tissue international*. <https://doi.org/10.1007/s00223->