Assessment of Physical and Psychosocial Status among Patients with Knee Osteoarthritis

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Abstract

Background: knee osteoarthritis is the most common chronic disease which affected the physical and psychosocial status of patients and associated with a high rate of disability and poor quality of life. **Aim of study:** was to assess physical and psychosocial status among patients with knee osteoarthritis. **Design:** A descriptive exploratory research design. **Setting**: The study was conducted at Ain Shams University Hospitals (El Demerdash Hospital), Cairo, Egypt. **Subjects**: A purposive sample of 129 patients in pre-mentioned setting was enrolled in the study. **Tools:** Three tools were used for data collection; tool (I) structured interviewing questionnaire that consisted of two parts; part I: demographic data, part II: medical history. Tool (II): Western Ontario McMaster Universities Osteoarthritis Index (WOMAC), Tool (III): psychosocial assessment questionnaire. **Results:** The current study findings revealed that more than two thirds (61.2%) of studied patients had a high physical needs regarding condition. Moreover, more than two thirds (62%) of studied patients had a high psychological needs. Additionally, more than two thirds (68.2%) of studied patients had a high social needs. Also, there was a highly statistically significant relation between demographic data, chief complain and total level of need among the studied patients. **Conclusion:** The study findings concluded that more than two-thirds of study subjects had high physical, psychological and social needs. Also, there was a highly statistically significant correlation between total score of physical, psychological and social needs. **Recommendations:** The current study was recommended that importance of improving patient's physical and psychosocial status through identify needs and increasing awareness.

Keywords: Knee osteoarthritis, Physical status, Psychosocial status.

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Introduction

Musculoskeletal disorders (MSD) are injuries and disorders that affect the human body's movement or musculoskeletal system (i.e. muscles, tendons, ligaments, nerves, discs, blood vessels, etc.), they cause pain and discomfort and limited range of motion that interferes with every day activities. Musculoskeletal disorders are associated with high costs to employers such as absenteeism, lost productivity, and increased health care, disability, and worker's compensation costs. MSD cases are more severe than the average nonfatal injury or illness *(Pickard, et al., 2022).*

Knee osteoarthritis is a multifactorial degenerative joint disease that is caused by changes in the articular cartilage and the sub-chondrial bone, osteophyte formation, synovial tissue inflammation and it is one of the major causes of physical and socioeconomic disabilities. The disease comprises half of the problems in people aged over 50 years and represents the second leading complaint among outpatients and affecting millions of people worldwide and it is common musculoskeletal conditions and can impact on every life domain, compromising quality of life. *(Zain, et al., 2020& Wallis, et al., 2019).*

Patients with knee osteoarthritis tend to increase their physical limitations, pain and functional limitation with disease progression. These patients suffer from progressive increased impact on their Activities of daily living which leads to losses in general health, leisure, social life, wellbeing, sleeping quality, difficulty in performing the activities of daily living such as toileting, and bathing/dressing, represents the life-course accrual of multiple biologic deficits, including lifestyle behaviors *(McKevitt, et al. 2022).*

Psychosocial factors have an important impact on patients' physical, psychological, and social functioning. The phenomenon of loss of face and the wide spectrum of social and family support dynamics patients with knee OA were new findings. With loss of face, patients were concerned about how others would view the change in them, including movement changes because of knee OA *(Tan, et al., 2023).*

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Walking cane use seems to be associated with serious vision impairment, loss of respect, being discriminated against by others, motivating patients to "save face" by dissociating themselves from those stigmas, uneven at the cost of mobility and independence. An interplay of complex cultural processes (perceived social roles and contributions to family, desire to avoid burdening family, help-seeking behavior, and the preference for unsolicited social support) underpinned by the value of collectivism impacted the behaviors *(Yang, et al., 2022)*.

The nurse has important role in helping knee osteoarthritis patients to manage their condition. The focus of knee osteoarthritis management primarily concerns symptom relief and optimization of functional outcomes, comfort measures, preventing disability, and improving joint function. In more severe cases, nurses may care for patients following joint replacement surgery. The first-line treatment for all patients with symptomatic knee osteoarthritis includes patient education and physical therapy *(Collins, et al., 2019)*.

Education intervention has been recognized of the fundamental components for successful management of knee osteoarthritis. Such interventions involve acquisition of knowledge and skills in order to empower individuals towards self-management. Providing disease information about knee osteoarthritis is more likely to engage people with knee osteoarthritis in positive behavior change for better health outcomes *(Sun, et al., 2022).*

Significant of the study

Patients with KOA experience severe disability and the global prevalence of KOA was 16% among individuals aged 15 years or over and 22.9% among those aged 40 years or over. Furthermore, approximately 654.1 million individuals worldwide had knee OA in 2020. The ratios of prevalence and incidence of KOA in women and men were 1.69 and 1.39, respectively. Of these patients, around 80% of them experience a reduction in their movement and 25% find it difficult to engage in their day-to-day activities *(Cui, et al., 2020).*

Osteoarthritis has been ranked as the tenth leading contributor to global disability, with the knee as the most commonly affected joint. Between 2007 and 2017, the years lived with disability attributed to knee OA increased by 30.8%, which was a large increase for noncommunicable diseases. The prevalence is expected to increase significantly in the coming years due to the increasing age and obesity population *(WHO, 2020).*

So, the present study is conducted to assessment physical and psychosocial status

Operational definition:

Patient status: It is the all variables that determine patient's status which contain physical and psychosocial categories (e.g. low, intermediate or high). Physical status including (joint pain sensation, stiffness and physical function). Psychosocial status including health condition, complications, movement, activities and relationship). Patient status will be measured by assessing physical, psychological and social needs.

Aim of the study:

The aim of the present study was to assess physical and psychosocial status among patients with knee osteoarthritis.

Research questions:

1-What is the physical status for patients with knee osteoarthritis?

2-What is the psychosocial status for patients with knee osteoarthritis?

Subject and Method:

Research design:

A descriptive exploratory research design was utilized in this study.

Setting:

This study was conducted at orthopedic department and orthopedic outpatient clinic at Ain Shams university hospitals (El Demerdash Hospital), Cairo, Egypt.

Subjects

A purposive sample of 129 patients from total 200 patients admitted to Ain shams university hospitals, in (2020/2021). By using the following sample size equation according to (*Krejcie & Morgan, 1970).*

$$n = \frac{NZ^2P(1-P)}{d^2(N-1)+Z^2P(1-P)}$$

n=sample size

N= patient size =2000 patients

z= Class standard corresponding to the level of significance equal to 0.95 and 1.96

d= the error rate is equal to 0.05

p= percentage of availability of the character and objectivity = 0.1

$$n = \frac{2000 \times (1.96)^2 \times 0.1(1-0.1)}{0.05^2 \times (2000-1)+(1.96)^2 \times 0.1 \times (1-0.1)} = 129 \text{ patients}$$

Inclusion criteria:

Adult patients from both gender diagnosed with knee osteoarthritis for more than six month

who agree to participate in the study was involved in this study from the above mentioned setting.

Tools for data collection:

The investigator was used three tools to collect the data during the study:-

Tool (I): Structured Interviewing Questionnaire: This tool was developed by the investigator based on the recent literature *(Nagat & Naglaa, 2018 & Elhoty, 2020).* It was included the following two parts:

Part I - It was concerned with demographic data which included 5 items such as (e.g. age, gender, level of education, marital status, and occupational state).

Part II - It was concerned with history data (past medical history & present medical history) to assess patient medical condition which included 9 items such as history of chronic disease, history of obesity, history of previous knee injury, duration of the disease, pre-hospital treatment, onset of disease, chief complain, the current treatment regimen and body mass index.

Tool II: Western Ontario McMaster Universities Osteoarthritis Index (WOMAC)

It was adopted from emeritus professor **Nicholas Bellamy in 1982** to assess physical function. The (WOMAC) consists of 24 items divided into three subscales:

Pain (5 items): During walking, upstairs, at night, at rest, and heavy lifting, Stiffness (2 items): Stiffness after awakening first time at the morning and later in the same day, physical function (17 items): Downstairs, upstairs, rising from sitting position, standing, bending on floor, walking on flat surface, getting in/out of a car, going to shopping, putting on/taking off socks, lying in bed, rising from bed, getting in/out of bath, sitting, getting on/off toilet, heavy household duties and light household duties.

WOMAC Scoring system:

This tool consisted of 24 items with a total grade (96). This instrument uses a 5-point Likert scale which ranged from 0= none, 1= mild, 2 = moderate, 3 severe and 4 = very severe. The grades for each item were summed up and then converted into a percent score.

- High level $\geq$ 60% ($\geq$ 58 point)
- Low level was < 60% (< 58point)

Tool III: Psychosocial Assessment Questionnaire): It was developed by investigator based on the literature review *(Geraled, et al.,*

(2009), Smeltzer &Bare, (2010), Ibrahim, (2011). Which included the following parts:

Part I: It was concerned with psychological needs which consisting of 12 item such as (e.g. health condition, anger, complications, enjoyment, insomnia, emotional support, movement, depressed).

Scoring system:

This tool consisted of 12 items with a total grade (24). For positive items, two grades were given to (yes) answer and one grade was given for (no) answer. While for negative items (No 6; item of seeing the joyful side of things) two grades was given to no answer and one grade was given for yes answer. The grades for each item were summed up and then converted into a percent score.

- High level $\geq$ 60% ($\geq$15 point)
- Low level was < 60% (< 15)

Part II: It was concerned with social needs which included 8 items (e.g. activities, relationship, exercises, insecure, recreational activities, enjoy).

Scoring system:

This tool consisted of 8 items with a total grade (16). For positive items, two grades were given to yes answer and one grade was given for no answer. While for negative items (no 7 and 8; items of tried to establish a social relationship with patients of the same disease and enjoy spending time with family) two grades were given to no answer and one grade was given for yes answer. The grades for each item were summed up and then converted into a percent score.

- High level $\geq$ 60% ($\geq$ 10 point)
- Low level was < 60% (< 10)

Total needs of patients with knee osteoarthritis:

This tool consisted of 44 items with a total grade (96+24+16=136). The grades for each item were summed up and then converted into a percent score.

- High level $\geq$ 60% ($\geq$ 82 point)
- Low level was < 60% (< 82)

Tool of Validity and Reliability
Testing validity:

Content and face validity was conducted to determine whether the tool covers the aim. The tools were revised by a jury of five experts: three from medical surgical nursing department, faculty of nursing, Helwan University and two from faculty of nursing, Ain Shams University who reviewed the content of the tools for comprehensiveness, accuracy, clarity, relevance and applicability, and all recommended modification were done.

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Testing Reliability:

Reliability for the utilized tools was tested to determine the extent to which the items of the tools are inter-correlated to each other. The cronbach,s alpha model is one of the most popular reliability statistics in use today and considered as a model of internal consistency that used to estimate of reliability of test scores. Reliability of physical and psychosocial assessment questionnaire was (α =0.932, respectively). Statistical equation of cronbach,s alpha reliability coefficient normally ranges between 0-1.

Ethical consideration:

Approval was obtained from the scientific research ethics committee of Faculty of Nursing at Helwan University. The study facilitation letter to conduct the study was received from the department of postgraduate studies at Faculty of Nursing at Helwan University and was sent to the nursing director of Ain-Shams University Hospital (El Demerdash Hospital). Then, was been obtained an official permission for data collection. Formal consent was obtained from the patients after informing them the purpose and nature of the study. Participation in the study was voluntarily and based on the patient's agreement to give informed oral consent. The investigator assured for maintaining anonymity and confidentiality of all patients' data. Confidentiality was maintained on data collection forms by using codes to identify participants instead of names or any other personal identifiers. A master list of participant was kept separated from the data collection forms. All data collection forms were kept in a locked file in separate from the master list.

Pilot study:

Pilot study was carried out with 10% (13 patients) of total number of the studied patient's group (129 patients) under study to test the applicability, clarity, and efficiency of the tools. It also aims to ensure simplicity, relevance and feasibility of conduction of the study tool. In addition, it helps in estimation of the time needed to collect data and determine the obstacles. There is no modifications made, and patients included in the pilot study were excluded from the main sample size.

Field Work:
Field work includes the following:

- Data was collected upon five months started at the beginning of August (2022) and completed by the end of December (2022). After securing all official permissions the investigator met the manager of the hospital to explain the aim of the study and submission of formed letter from faculty of nursing to gain the approval of data collection.

- Before beginning to collect data from the patients the investigator introduced himself to them, explained the aim of the study, and informed them that information will be treated confidential and will be used only for the purpose of the research. Additionally, each patient was notified about the right to accept or refuse to participate in the study and obtaining a verbal consent to participate in this study.

- The purpose of the study was simply explained to the patients who agree to participant in the study prior to any data collection.

- The investigator presented 2 days/week to collect data. Data was collected in the morning and afternoon and patients full filling the questionnaire. The investigator to ascertain all questions were answered. The investigator checked completed items filled sheet after the patient completed it to ensure the observation any missing data.

III. Administrative item:

- An official permission was obtained from the manager in Ain Shams Hospital (El Demerdash Hospital) in which the study was conducted. A letter was issued to them from the faculty of nursing and Helwan University explains the aim of the study for obtaining the permission for data collection. Also individual oral consent was obtained from each patient in the study.

IV. Statistical item:

Data entry and analysis were performed using SPSS statistical package version 25. Categorical variables were expressed as number and percentage while continuous variables were expressed as (mean ±SD). Chi-Square (x2) was used to test the association between row and column variable of qualitative data.

T test was used to compare mean in normally distributed quantitative variables at two groups. Pearson correlation was done to measure correlation between quantitative variables. For all tests, a two-tailed p-value ≤ 0.05 was considered statistically significant, P-value ≤ 0.01 was considered highly statistically significant. While P-value > 0.05 was considered not significant.

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Results

Table (1): Frequency and percentage of demographic data among patients with knee osteoarthritis (n=129)

Items		No.	%
Age (year)	▪ 20 < 30	23	17.8
	▪ 30 < 40	27	20.9
	▪ 40 < 50	30	23.3
	▪ 50 < 60	49	**38.0**
	▪ **Mean ± SD**	**43.31 ± 11.93**	
Gender	▪ Male	57	44.2
	▪ Female	72	**55.8**
	▪ **Male to female ratio**	**0.8:1**	
Marital status	▪ Single	12	9.3
	▪ Married	112	**86.8**
	▪ Widow	3	2.3
	▪ Divorced	2	1.6
level of education	▪ Not read and write	40	**31.0**
	▪ Read and write	16	12.4
	▪ Low level of education	14	10.9
	▪ Middle level of education	36	27.9
	▪ High level of education	23	17.8
Occupation	▪ Not work	86	**66.7**
	▪ Governmental work	30	23.3
	▪ Private work	13	10

Table (1) shows that, **(38%)** of the age of the studied patients was ranged from $50 \geq 60$ years old, with a mean age of **43.31 ± 11.93**. and **(55.8%)** of them were female with a male to female ratio was **0.8:1**. while **(86.8%)** were married. Concerning educational level, **(31%)** weren't read and write. and **(66.7%)** were not working.

Figure (1): Percentage distribution of total level of physical, psychological and social needs among patients with knee osteoarthritis (n= 129)
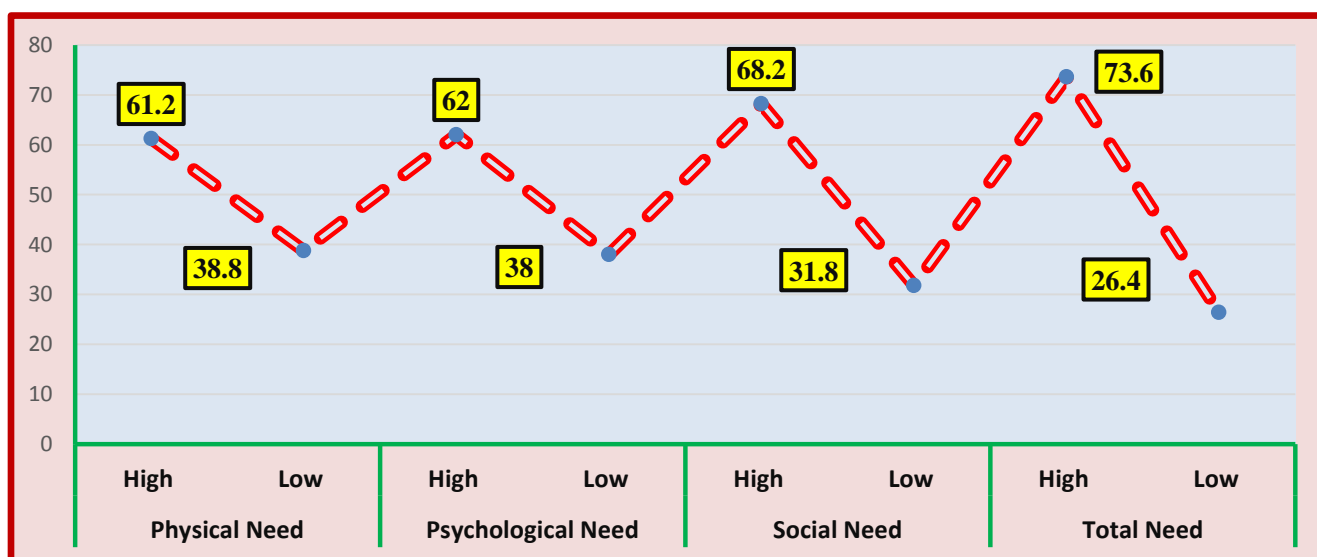
(Total) High need to low need ratio= 2.8:1; $\chi 2$=28.8, P=0.000

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Figure (1) clarifies that, more than two-thirds of the patients with knee osteoarthritis had a high physical, psychological and social need with the percentage of **(61.2%, 62% and 68.2%)** respectively. Regarding to total need, about three quarters **(73.6%)** of them had high need. In addition to presence of difference between observed and expected values with a highly statistically significant difference, at **P = 0.000.** Moreover, high need to low need ratio is **2.8:1.**

Table (2): Relation between total level of needs and demographic data among patients with knee osteoarthritis (n= 129)

Items		No	Total level of needs				χ^2	P-Value
			Low need		High need			
			34	26.4	95	73.6		
			N	%	N	%		
Age (year)	▪ 20 < 30	23	16	12.4	7	5.4	30.1	0.000[**]
	▪ 30 < 40	27	8	6.2	19	14.7		
	▪ 40 < 50	30	3	2.3	27	20.9		
	▪ 50 < 60	49	7	5.4	42	32.6		
Gender	▪ Male	57	23	17.8	34	26.4	10.30 F	0.001[**]
	▪ Female	72	11	8.5	61	47.3		
Marital status	▪ Single	12	2	1.6	10	7.8	14.84	0.002[**]
	▪ Married	112	27	20.9	85	65.8		
	▪ Widow	3	3	2.3	0	0.0		
	▪ Divorced	2	2	1.6	0	0.0		
Level of Education	▪ Not Read and write	40	8	6.2	32	24.8	6.11	0.191
	▪ Read and write	16	4	3.1	12	9.3		
	▪ Low level of education	14	1	0.8	13	10.1		
	▪ Middle level of education	36	13	10.1	23	17.8		
	▪ High level of education	23	8	6.2	15	11.6		
Occupation	▪ Not work	86	15	11.6	71	55.0	18.5	0.000[**]
	▪ Governmental work	30	17	13.2	13	10.1		
	▪ Private work	13	2	1.6	11	8.5		

*Significant p $\leq$ 0.05   **Highly significant p $\leq$ 0.01   F: Fissure Exact Test

Table (2) shows that, there was a highly statistically significant relation between demographic data (age, gender, marital status, and occupation) and total level of need among patients with knee osteoarthritis, **at P = $\leq$ 0.01.**

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**Table (3): Relation between total level of needs and chief complaint
among patients with knee osteoarthritis (n= 129)**

Items			No	Total level of needs				χ^2	P-Value
				Low need		High need			
				34	26.4	95	73.6		
				N	%	N	%		
Knee joint pain	▪	Mild	3	2	1.6	1	0.8	45.4	0.000**
	▪	Moderate	29	21	16.2	8	6.2		
	▪	Severe	97	11	8.5	86	66.7		
Joint sound	▪	Crepitus	7	2	1.6	5	3.8	0.700	0.873
	▪	Cracking	2	1	0.8	1	0.8		
	▪	Creaking	3	1	0.8	2	1.6		
	▪	Popping	117	30	23.2	87	67.4		
Difficulty walking on an uneven surface	▪	Yes	124	32	24.8	92	71.3	0.499 F	0.396
	▪	No	5	2	1.6	3	2.3		
In-ability to move	▪	Yes	9	7	5.4	2	1.6	13.1 F	0.001**
	▪	No	120	27	20.9	93	72.1		
Numbness	▪	Yes	87	9	7.0	78	60.4	35.2 F	0.000**
	▪	No	42	25	19.4	17	13.2		
Knee joint stiffness	▪	Yes	76	11	8.5	65	50.4	14.5 F	0.000**
	▪	No	53	23	17.8	30	23.3		

*Significant $p \leq 0.05$ **Highly significant $p \leq 0.01$ F: Fissure Exact Test

Table (3) shows that, there was a highly statistically significant relation between chief complaints (joint paint, in-ability to move, numbness and knee joint stiffness) and total level of need among patients with knee osteoarthritis, **at P = $\leq$ 0.01.**

**Table (4): Correlation between total score of physical, psychological, social needs and anthropometric
measurements among patients with knee osteoarthritis (n= 129)**

Dimension			Total patient's need		
			Physical need	Psychological need	Social need
▪ Body mass index	▪	r	0.974	0.921	0.922
	▪	P	0.000**	0.000**	0.000**
▪ Weight	▪	r	0.944	0.896	0.896
	▪	P	0.000**	0.000**	0.000**
▪ Height	▪	r	0.940	0.865	0.874
	▪	P	0.000**	0.000**	0.000**

*Significant $p \leq 0.05$ **Highly significant $p \leq 0.01$

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Table (4) illustrates that, there was a highly statistically strong positive correlation between total score of physical, psychological, social need and anthropometric measurements (Body mass index, weight and height) among patients with knee osteoarthritis at **r** was ranged from **0.896 to 0.974** and **p= 0.000.**

Table (5): Correlational between total score of physical, psychological and social needs among patients with knee osteoarthritis (n= 129)

Dimension		Total patient's need		
		Physical need	Psychological need	Social need
▪ Physical need	▪ r		0.922	0.939
	▪ P		0.000**	0.000**
▪ Psychological need	▪ r	0.922		0.965
	▪ P	0.000**		0.000**
▪ Social need	▪ r	0.939	0.965	
	▪ P	0.000**	0.000**	

*Significant p ≤ 0.05   **Highly significant p ≤ 0.01

Table (5) illustrates that, there was a highly statistically strong positive correlation between total score of physical, psychological and social needs among patients with knee osteoarthritis at **r** was ranged from **0.922 to 0.965** and **p= 0.000.**

Discussion

Regarding to socio-demographic characteristics, the present study shows that, more than half of the studied patients were female and approximately more than one third were male. Women have a higher incidence and prevalence of general osteoarthritis. Their age ranged between 20-60 years old with a mean of (**43.31 ± 11.93**) because of tear and wear process occur in joint with advance in age. The result of the present study reveal that, more than one third of the age of the studied patients was ranged from 50 ≥ 60 years old. This may be related to hormonal changes especially after menopause which can increase the risk of knee osteoarthritis due to estrogen withdrawal that can exacerbate degenerative changes in multiple joints muscle strength changes as well as, less muscle and more fat cluster loading on joints, pelvic structures and knees.

These results agreed with *Alghadir& Khan, (2022)* entitled "Factors affecting pain and physical functions in patients with knee osteoarthritis: An observational study" at Saudi Arabia, who reported that more than half of the study patient were female and it is common in elderly people. Also, this result was supported by *Szilagyi, et al., (2022)* entitled "Towards sex-specific osteoarthritis risk models: evaluation of risk factors for knee osteoarthritis in males and females" at Holande, who reported that more than half of the study patient were female and it is common in elderly people.

Regarding to patients᾽ marital status the present study findings showed that majority of studied patients were married. This may be related to Egyptian culture that at the age of 50 the majority of people especially females were married. This result was supported by *Kebary, et al, (2022)* entitled "Assessment of Self-Efficacy among Patients with Knee Osteoarthritis" at Egypt, who reported that majority of studied patients was married.

Regarding to patients᾽ educational level the current study finding indicated that less than one third of the studied patients were illiterate. This may be due to women are often expected to stay at home and care for the house and children while men interested to work and difficult living condition including poverty. This result disagree with *Mirmaroofi, et al., (2019)* entitled "Relationship between self-efficacy and pain control in Iranian women with advanced knee osteoarthritis" at Iran, who reported that two third of the patients were illiterate.

Regarding to patients᾽ occupation the current study finding indicated that two third of the patients were not work. This may be related to OA symptoms such as pain, disturbance of sleep and stiffness may impair occupational performance not only among those with physically demanding jobs but also in non-manual office workers. This result is supported by *El-sheikh, et al., (2022)* entitled "factor influencing pain and functional impairment in patients with knee osteoarthritis" at Egypt, who showed that two third of the patients were not work.

This finding came in the same line with *Basuny, et al., (2020)* entitled "Responsiveness of

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pain and associated health issues of patients with knee osteoarthritis to the revulsive compresses" at Egypt, who reported that two third of the patients were housewives. In the same context *Imam, et al., (2020)*, entitled "Heel pain in female patients with early knee osteoarthritis" at Egypt, who revealed that more than half of the sample was housewives.

Regarding to total level of physical needs the current study finding showed that more than two thirds of patients with knee osteoarthritis had high physical needs. This may be due to individuals with OA experience limited activity, pain in the leg that makes them lame, difficulty walking, standing, lifting and carrying heavy objects, difficulty getting up and down from a chair, difficulties sleeping, and a significant reduction in quality of life. In the same line the study result of *Mohammedsadiq & Rasool, (2023)* entitled "Effectiveness of home-based conventional exercise and cryotherapy on daily living activities in patients with knee osteoarthritis: A randomized controlled clinical trial" at Iraqi, who reported that the more than two thirds of patients with knee osteoarthritis had high physical needs.

Concerning to total level of social needs the current study finding showed that more than two thirds of patients with knee osteoarthritis had high social needs. This may be due to many people with OA also experience fatigue, poor sleep, anxiety, depression, social isolation, loss of work, financial difficulty and a general deterioration in quality of life. Also, needs to social relationship. In the same line the study result of *Norris, et al., (2022)* entitled "Social Needs of Patients Undergoing Total Joint Arthroplasty" at United State, who reported that the more than two thirds of patients with knee osteoarthritis had high social needs.

Considering relation, the study finding denoted that there was a positive relation between ages, joint pain and total level of needs with highly significant statistical difference at p= $\leq$ 0.01. This may be due to the cartilage naturally deteriorates and lose bone mass or density with age. Additionally, decrease physical activity and inadequate nutrition. The tissues that cushion the ends of the bones within the joints break down over time. These changes usually develop slowly and worsen gradually causing pain. This result was consistent with the result of *Siripongpan & Sindhupakorn, (2022)* entitled "A Comparative study of osteoarthritic knee patients between urban and rural areas in knee severity and quality of life" at Tiland, who reported that there was a positive relation between ages, joint pain and total level of needs.

Considering relation, the study finding denoted that there was a positive relation between ages, educational level and total level of patient status with highly significant statistical difference at p= $\leq$ 0.01. This result was consistent with the result of *Chen, et al., (2022)* entitled "Mediating effect of self-efficacy on the relationship between social support and self-management behaviors among patients with knee osteoarthritis: a cross-sectional study" at China, who reported that there was a positive relation between ages, educational level and total level of patient status.

Considering correlation, the study finding denoted that there was a positive correlation between total score of physical, psychological, social needs and body mass index with highly significant statistical. This may be due to body weight is associated with decreased levels of physical activity and low self-esteem, so that increased risk of developing mood and anxiety disorders. This result was consistent with the result of *Zheng, et al., (2022)* entitled "Factors influencing depression in community-dwelling elderly patients with osteoarthritis of the knee in China: a cross-sectional study" at China, who reported that there was a positive correlation between total score of physical, psychological, social needs and body mass index.

Likewise, result of *Olsen, et al., (2022)* entitled "Factors Correlated with Physical Function 1 Year after Total Knee Arthroplasty in Patients with Knee Osteoarthritis Systematic Review and Meta-analysis" at united state, who reported that there was a positive correlation between body mass index and physical needs.

Considering correlation, the study finding denoted that there was a highly significant statistical positive correlation between total score of physical, psychological and social needs. This may be due to exercise improves mental health by reducing anxiety, depression, and negative mood and by improving self-esteem and cognitive function. Physical activity may be considered a protective factor for lower stress levels and stress attitudes and alleviate symptoms such as low self-esteem and social withdrawal. This result was consistent with the result of *Alabajos, et al., (2021)* entitled "Are Psychosocial Factors Determinant in the Pain and Social Participation of Patients with Early Knee Osteoarthritis? A Cross-Sectional Study" at Spain, who reported that there was a positive correlation between physical, psychological and social status.

Likewise, result of *Uritani, et al., (2020)* entitled "psychological characteristics and physical activity levels in people with knee osteoarthritis: a cross-sectional analysis" at Australia, who reported that there was a positive correlation between total score of physical and psychological need.

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Conclusion

In the light of the current study findings, it can be concluded that more than two thirds of study subjects had high physical, psychological and social needs. Additionally, there was a highly statistically significant relation between demographic data, chief complain and total level of needs. Also, there was a highly statistically significant correlation between total score of physical, psychological and social needs.

Recommendations

In the light of the current result, the following recommendations are suggested:

- Establish a center for the patient education, especially for knee osteoarthritis.
- Rehabilitation program should become an integrated part of the total management of knee osteoarthritis patient.
- Update knowledge of nurses working in orthopedics departments through attending in services training program, seminar, workshop and scientific conference regarding application of evidence based practice while dealing with patients.
- Nursing curricula should integrate the concept of comprehensive assessment to determine accurate nursing diagnosis and develop nursing care plan.
- Develop a simplified booklet about physical and psychosocial needs for patient with knee osteoarthritis.
- Nurses and doctors must coordinate their efforts in determining patient's needs and problems, prevention and early detection of knee osteoarthritis patients and helping them to prevent and manage difficulties.

Recommendations for further researches: Replication of the study on a larger probability sample selected from different geographical areas in Egypt is recommended to obtain more generalizable data.

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