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Does the Symptoms of Osteoarthritis Affect the Health-Related Quality of Life: A Cross-Sectional Study

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Abstract

Background and aim: Osteoarthritis which is a common age-related condition of the joint and evidence of its impact on quality of life is emerged. The aim of this study to assess the quality of life among patients with symptomatic osteoarthritis. Methods: A cross-sectional study design was performed among patients with osteoarthritis. A sample of 306 participants age 45 years and older were included in this study diagnosed according to the American College of Rheumatologists' criteria. WHOQOL-BREF scale was used to assess QoL while the signs and symptoms of the osteoarthritis was evaluated by using a part of KOOS scale. Results: The mean 50.04±8.23 and the disease was more common in female 249 (81.4%). The stiffness was the highest indicated symptom of either moderate in 150 (40.5%) or sever in 159 (43.0%). The rarely ability of knee extension in 49 (46.6%) and rarely knee bending in 124 (33.5%). Significant difference of both oedema and crepitus with physical and psychological domains $p \leq 0.05$ while stiffness, morning stiffness, rest stiffness, frequency of pain, and difficulty of knee were significantly different with three domains (physical domain, psychological domain and environmental domain). Conclusion: Patients with symptomatic OA as pain, crepitus, stiffness especially in morning, in rest, and night stiffness, are associated with decrease the QOL.

Keywords: Knee Injury and Osteoarthritis Score, Osteoarthritis, Quality of Life, WHOQOL-BREF Scale, Womac Scale.

Introduction

Osteoarthritis is common chronic degenerative joints disorder of musculoskeletal system associated with cartilage degeneration and joints deformity. It is an age-related disease characterized pathologically by areas of focal damage and loss of articular cartilage in synovial joints [1]. It is one of the most frequent chronic diseases, that affects approximately 7% of the population. Also, World Health Organization (WHO) showed that 9.6% of men and 18% of women over the age of 60 have symptomatic osteoarthritis. Additionally, this disease is considered to be the fourth cause of global disability [2, 3]. The primary clinical symptom of osteoarthritis is pain, which can be intermittent or constant. Pain is the symptom that forces patients to seek medical advice and contributes the most to functional limitations [4].

Quality of life (QOL) has established itself as an important concept and goal for study expectations, standards and concerns" [5, 6]. The World Health Organization (WHO) created the World Health Organization Quality of Life (WHOQOL) department, which defined quality of life as an individual's view of their living situation in a wide framework, taking into consideration cultural factors, personal expectations, and societal conventions. Measures of quality of life might be either generic or condition-specific, The

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measures of general quality of life assess how different people perceive their physical, mental, social, and environmental health [3]. However, during the last several years, there has been a rise in the amount of research on patients' QOL and the use of QOL assessments. Understanding QOL is crucial for enhancing patient care, symptom alleviation, and rehabilitation [7]. Patients' self-reported QOL issues may prompt therapy and care revisions and improvements, or they may demonstrate that some therapies are ineffective [8]. Patients with osteoarthritis are suffered from pain, stiffness, and difficulty in movement [1], that all these may affect to the patients daily life through demonstrate in poor of physical activity and daily function status that will lead to decrease the performance and bad quality of life [9, 10]. In addition to that, pain may lead to daily life restrictions and tiredness, which may prime to depressed mood and worse pain and function [4], the aim of this study to assess the quality of life among patients with symptomatic OA.

Patients and Methods

This study is cross-sectional study that take place among patients who was visited the private clinic daily that was dignosised with osteoarthritis by Rheumatologist and Orthopedics specialist. A sample size of 306 participants age 45 years and older were included in this study. The patients with primary osteoarthritis symptoms who were visited the private clinic during the four months of data collection were invited to participate in the study. Patients with malignant disease, arthritis diseases like rheumatoid arthritis, and septic arthritis, also, those patients suffered of degenerative disease, knee and hip replacement surgery, secondary osteoarthritis, heart disease, liver failure and renal failure were excluded.

The diagnosis of the patients was performed by the specialist rheumatologist and orthopedics in the private clinic. However, OA diagnosis was detected and established by American College of Rheumatologists' criteria. Also, the KL scale grading scale was used as it depending on standing anteroposterior images as follow: 0= no feature of OA 1= questionable osteophytes 2= definite osteophytes without joint space narrowing 3= definite osteophytes with moderate joint space narrowing 4= definite osteophytes with sever joint space narrowing [11, 12]. The data collection form consisted of 3 parts, demographic and socioeconomic person information, the OA signs and symptoms, and the WHOQOL-BREF scale used to assess QoL. This study which acquired about 10-15 minute to be complete by patients, the confidentiality of information was ascertained for participants. General and clinical data were collected through a questionnaire with socio-demographic data such as gender, age, weight, height, BMI, marital status, education level, patients' jobs, monthly income, smoking, alcohol drink. Also, other information related the disease state as the duration of disease, drugs that used for treated osteoarthritis, and the disease that concurrent with osteoarthritis. The signs and symptoms of the osteoarthritis was evaluated by using a part of KOOS [11], which were included odema, stiffness in morning or in evening, and crepitus of effective joints during movement. In addition to ability of knee extension and bending, ability of movement, duration of pain, and difficulty of osteoarthritis.

WHOQOL-BREF scale was used for assessing the QoL, WHOQOL-BREF scale is short-version of the WHOQOL-100, both scale are developed from WHO that are accomplished in 1995 [13]. The WHOQOL-BREF is a self-administered questionnaire comprising 26 questions on the individual's perceptions of their health and well-being over the previous two weeks to four weeks. The duration of four weeks was selected because of the chronic nature of OA. In addition to two

items from overall quality of life and health, the WHOQOL-BREF consists of 24 quality of life components. Additionally, it was separated into four areas: the social, psychological, environmental, and physical domains. The physical realm includes managing pain, movement, energy, mobility, sleep, and work. Feeling, learning, memory and attention, self-esteem, aspect, spirituality, religiousness, and good and negative feelings are all included in the psychological realm. Personal relationships, social support, and sexuality comprised the social realm. The environmental domain is the final domain. financial resources, home environment, and physical safety and security. Health and social services, quality and accessibility, chances to learn new knowledge and abilities, engagement in and availability of recreational/leisure possibilities, Transportation and the physical environment (pollution, noise, traffic, and climate).

Four domain scores are obtained from the Field Trial Version of the WHOQOL-BREF. Additionally, two items are examined separately without scoring: question 1 inquiries about an individual's general assessment of their quality of life, and question 2 asks about an individual's general assessment of their health. greater scores correspond to a greater quality of life, as domain scores are assessed in a positive manner. The domain score is determined by averaging the content scores within each domain. The following procedure is then used to convert mean scores to a 0-100 scale, after which they are multiplied by four to match domain scores to those used in the WHOQOL-100.

TRANSFORMED SCORE= (SCORE-4) x (100/16).

Statistical analysis: SPSS was used to assess all data statically using both descriptive and inferential statistics when applicable. The Spearman coefficient test was used to assess the degree of connection between continuous groups. The difference between the Kruskal Wallis and Mann-Whitney tests for continuous groups and category groups.

Results

This study was taken place in patients who diagnosis with OA, the sample size is 306 with mean 50.04±8.23. Also calculated the BMI for these patients with mean 32.82±6.04. This study showed that the OA was more common in female than in male, in which 249 (81.4%) of patients were female; in addition to that, most of the patients were married 236 (77.1%). Most patients who participated in this study were primary educated 104 (34%). The patients had different jobs with higher frequency 180 (58.8%) of these patients were house working (Table 1). The majority 179 (58.5%) have monthly income less than 500,000 IDQ and the lowest frequency 25 (8.2%) was for 10 times and more doctor consultations in the last year. Different medication was taken by patients in this study where paracetamol users 123 (40.2%). The Meloxicam was the higher drug taken 91 (29.7%) while 257 (84.0%) of participants used muscle relaxant. Tonic and dietary supplements used by 288 (94.1%) of the patients, and vitamin D used by 288 (94.1%) of the patients and Glucosamine was taken by 122 (39.9%). In addition to that, 126 (41.2%) of the patients were treated by intra- articular injection steroid. The majority of the patients had co-morbidity 204 (66.7 %) The hypertension disease was the most prevalent disorder 98 (32.0%) (Table 1).

This study showed that the sometimes odema is 113 (31.9%) is more common within the odema, where the usually crepitus is showed percent in 173 (46.8%). The usually stiffness is the high percent among patients that suffer from stiffness where is moderate morning stiffness in 150 (40.5%) and sever rest stiffness in 159 (43.0%). The rarely ability of knee extension in 49 (46.6%) and rarely knee bending in 124 (33.5%). Both moderate and simply change lifestyle showed 160

(43.2%) with the moderate difficult in knee showed high percent in 149 (52.2%).

Also, the study showed significant different of both signs, odema and crepitus with both domain one and two (physical and psychological domains). The signs which included stiffness, morning stiffness, rest stiffness, frequently of pain, and difficulty of knee showed significant different with three domains (domain one, domain two and domain four). The ability of knee extension illustrated significant different with domain one, domain two and domain three in contrast the ability of knee bending showed significant different with domain one, domain two and domain three. The change lifestyle demonstrated significant different with domain one and domain two.

Table 1. Socio-Demographic Characteristics (Categorical Variables) of the Study Participant (N=306).

Categories group		**Frequency (%)**	**Categories group**		**Frequency (%)**
Gender	Male	57 (118.6)	Vitamin D	Taken	288 (94.1)
	Female	249 (81.4)		Not taken	18 (5.9)
Marital status	Married	236 (77.1)	Tonics supplement	Taken	293 (95.8)
	Single	12 (3.9)		Not taken	13 (4.2)
	Divorced	4 (1.3)	INJ Steroid	Taken	126 (41.2)
	Widow	54 (17.6)		Not taken	180 (58.8)
Education level	No formal education	65 (21.2)	Muscle relaxant	Taken	257 (84)
	Primary	104 (34)		Not taken	49 (16)
	Secondary	60 (19.6)	Type of muscle relaxant	Myogesic#	78 (25.5)
	University	70 (25.2)		Relaxon^	114 (37.3)
Job	Governmental worker	68 (22.2)		Algesic	66 (21.6)
	Free works	22 (7.2)	Topical NSAIDs	Yes	160 (52.3)
	Retired work	63 (11.8)		No	146 (47.7)
	House work	180 (58.8)	Glucosamine	Yes	122 (39.9)
Monthly income	Less than 500000	179 (58.5)		No	184 (60.1)
	500000-1000000	86(28.1)	Analgesic used	Paracetamol	123 (40.2)
	More than 1000000	41(13.4)		NSAID	183 (59.8)
Doctor consultation	1-3 times	103 (33.7)	Type of NSAIDs	Diclofenac acid	59 (19.3)
	4-6 times	103 (33.7)		Meloxicam	91 (29.7)
	7-9 times	75 (24.5)		Paracetamol	67 (21.9)
	10 times and more	25 (8.2)		Ibuprofen	15 (4.9)
Comorbities	Yes	204 (66.7)		Naproxen	18 (5.9)
	No	102 (33.3)		Pandol joints*	56 (18.3)
Type of comorbid	Diabetes Mellitus	14 (4.6)	#Myogesic= Paracetamol and orphenadrine, ^Relaxon=Chlorzoxazone 250 mg+Paracetamol 300 mg, *Panadol=paracetamol 665mg		
	Hypertension	98 (32)			

	Heart disease	8 (2.6)	
	Peptic ulcer	4 (1.3)	
	Asthma	4 (1.3)	
	Thyroid disease	4 (1.3)	
	Migraine	6 (2)	

Table 2. Difference between the Score of QoL Domains with Signs and Symptoms of OA (N= 306)

	Symptoms of OA Percent % (number)	**Domain 1 Mean±SD (median)**	**P value**	**Domain 2 Mean±SD (median)**	**P value**	**Domain 3 Mean±SD (Median)**	**P value**	**Domain 4 Mean±SD (Median)**	**P value**
Odema	No odema 23(85)	49.22±15.23(47)	≤0.05	53.04±15.80 (56)	≤0.05	65.54±14.63 (69)	0.170	53.42±12.26 (53)	0.018
	Rarely 10.5(39)	57.78±12.71(63)		60.72±12.64 (63)		64.42±11.50 (69)		57.48±11.12 (56)	
	Sometime 31.9(118)	46.81±14.27(50)		55.90±13.09 (56)		63.09±12.85 (69)		57.44±11.98 (56)	
	Usually 27.8(103)	37.09±12.55(31)		47.08±14.63 (44)		61.41±16.01 (69)		52.88±11.88 (50)	
	All times 6.8(25)	29.22±13.24(31)		36.18±17.36 (31)		58.22±18.36 (56)		47.00±16.65 (44)	
Crepitus	Not happen 10.5(39)	48.37±15.60 (50)	≤0.05	53.82±10.10 (56)	≤0.05	66.62±15.41 (69)	0.171	55.68±9.36 (56)	0.191
	Rarely 7.3(27)	55.08±12.20(56)		59.82±14.49(63)		63.04±12.96 (69)		57.0±11.72 (56)	
	Sometimes 23.8(88)	51.41±13.87(56)		57.71±14.48(59)		64.40±12.34 (69)		57.13±12.35(56)	
	Usually 46.8(173)	42.11±13.94(38)		49.72±14.38(50)		61.39±14.05 (69)		53.48±12.23(56)	
	All the time 11.6(43)	30.97±15.89(31)		42.78±19.92(44)		63.16±19.60 (69)		51.29±16.04(50)	
Stiffness	Not happen11.4(42)	56.20 ±15.59(56)	≤0.05	53.56 ±17.93(56)	≤0.05	69.16 ±15.44(75)	0.021	57.60 ±12.91(56)	≤0.05
	Rarely13.2(49)	55.58±15.59(56)		63.04±17.93(69)		63.67±15.44 (69)		57.09±12.91(56)	
	Sometimes29.5(109)	49.21±13.36(50)		56.89±12.96(56)		63.91±12.13 (69)		57.93±11.11(56)	
	Usually 35.4(131)	38.17±12.38(38)		47.57±12.92(44)		61.08±15.12 (69)		51.48±11.46(50)	
	All the time10.5(39)	28.65±12.21(31)		37.60±17.67(38)		60.0±19.73(69)		49.62±15.85(50)	
Extension of knee	All the time 10.5 (121)	52.10±15.75(56)	≤0.05	56.63±15.77(56)	≤0.05	65.76±13.42 (69)	0.013	55.58±11.70(56)	0.084
	Usually 7.3(87)	47.05±13.00(44)		54.84±15.19(56)		62.46±16.87 (69)		56.62±14.11(56)	

	Sometime23.8 (94)	41.21±13.59(38)		50.56±12.23(50)		63.40±10.58 (69)		53.06±10.55(56)	
	Rarely 46.8 (49)	34.81±11.85(31)		44.05±14.89(44)		57.05±13.35 (56)		52.72±13.19(50)	
	No extension 11.6 (19)	28.0±15.43 (31)		36.61±15.23(34)		60.38±21.54 (62.5)		50.44±15.61(50)	
Knee bending	All the time 11.4(42)	53.0±17.26 (56)	≤0.05	59.38±18.35(63)	≤0.05	65.51±15.73 (69)	0.113	56.74±13.28(56)	≤0.05
	Usually 13.2(49)	54.30±13.73 (56)		58.87±15.26(63)		67.84±10.86 (69)		61.66±13.01(63)	
	Sometime 18.6(69)	51.16±12.29 (56)		58.73±11.36(56)		62.20±11.55 (69)		57.65±9.71 (56)	
	Rarely 33.5(124)	42.39±13.54(38)		50.89±12.26(50)		62.37±11.72 (69)		53.56±11.84(56)	
	No kneebending23.2(86)	33.73±13.65(31)		41.34±15.48(44)		60.74±19.84 (69)		48.90±12.64(50)	
Morning stiffness	No stiffness 5.7(21)	64.25±14.90(63)	≤0.05	66.06±14.39(66)	≤0.05	71.43±14.66 (75)	0.043	62.56±14.18(63)	≤0.05
	Simplestiffness16.8(62)	56.27±11.98(56)		61.93±11.29(66)		66.08±11.37 (69)		61.66±11.56(63)	
	Moderate stiffness 40.5 (150)	46.58±13.48(44)		54.51±13.79(56)		61.84±11.86 (69)		54.86±10.86(56)	
	Sever stiffness 23.8(88)	36.31±10.80(38)		45.73±11.94(44)		62.79±15.63 (69)		51.42±12.35(50)	
	Very sever stiffness 13.2 (49)	32.07±14.62(31)		38.33±16.73(34)		59.80±20.59 (69)		48.04±13.27(50)	
Rest stiffness	No stiffness 3.8(14)	54.60±13.89(59)	≤0.05	58.20±13.63(59)	≤0.05	60.0±18.93(69)	0.034	50.10±9.59 (50)	≤0.05
	Simple stiffness 8.6(32)	58.36±13.85(56)		65.08±11.44(63)		70.32±11.35 (69)		65.32±13.37(69)	
	Moderatestiffness 35.7(132)	50.96±13.03(56)		57.92±12.93(56)		63.61±11.75 (69)		57.48±10.66(56)	
	Sever stiffness43.0(159)	38.96±14.07(38)		46.82±14.13(44)		63.24±13.66 (69)		51.41±11.01(50)	
	Very ever stiffness8.9(33)	30.24±11.68(31)		38.93±16.93(38)		53.62±22.72 (56)		50.0±17.95 (44)	
Frequency of pain	Not happen 0.5 (2)	50.50±17.67 (50)	≤0.05	50.0±8.48(50)	≤0.05	62.50±9.19(62)	0.915	44.0±8.48(44)	0.004
	Monthly 9.7 (36)	54.81±12.66 (56)		61.18±15.61(69)		62.68±13.02 (69)		56.37±11.58(56)	
	Weekly 28.9 (107)	51.82±13.65 (56)		56.57±12.83(56)		64.75±11.59 (69)		57.14±11.35(56)	
	Daily 42.4 (157)	42.65±14.76 (44)		51.69±14.49(50)		62.92±13.24 (69)		54.56±12.16(56)	

	Continuously17.4(68)	33.36±13.43 (31)		41.57±15.98(44)		60.77±20.41 (69)		50.55±14.64(50)	
Change life style	Entirely 3 (11)	30.75±16.53(31)		48.50±19.77(56)		68.75±16.58 (62)		58.0±15.64 (56)	
	Significantly 41.1(152)	39.37±14.97(38)		48.34±15.94(44)		62.85±13.44 (69)		53.72±12.66(50)	
	Moderate 43.2 (160)	48.22±14.49(50)	≤0.05	53.71±14.48(56)	0.001	63.21±15.71 (69)	0.778	54.62±12.37(56)	0.523
	Simply 43.2 (160)	51.64±13.81(53)		57.50±14.41(63)		61.97±12.25 (69)		56.97±12.51(56)	
	Not at all 2.2 (8)	51.85±21.27(50)		61.57±17.16(69)		58.14±19.01 (69)		53.57±13.55(56)	
Difficulty knee	Very strong3.8(14)	22.76±11.48(19)		35.69±19.55(31)		62.53±20.24 (69)		50.69±17.29(44)	
	Strong32.2(119)	34.74±11.14(31)		44.53±12.98(44)		60.77±16.00 (69)		51.37±12.17(50)	
	Moderate52.4(194)	48.90±13.69(50)	≤0.05	54.69±13.81(56)	≤0.05	63.18±13.60 (69)	0.223	55.00±11.82(56)	≤0.05
	Simple11.1(41)	60.64±9.95 (63)		66.51±12.47(69)		68.29±10.28 (69)		63.02±11.36(63)	
	No difficult 0.5(2)	63.0±0.0 (63)		56.0±0.0(56)		56.0±0.0 (56)		50.0±0.0(50)	

Discussion

This study was taken place to assess the quality of life among patients with symptomatic OA in Mosul city. The WHOQOL-BRIF scale was used for this study as quality of life scale [13]. Although OA is chronic disease increase with age, but in Mosul city it may occur in middle age and elderly. Most study that deal with severity of OA demonstrated that OA is disease associated with age [14]. This study illustrated the effect of BMI on the severity of OA [15, 16]. The result demonstrated that the OA was more common in female than male in 249 (81.4%). A study was done by Szilagyi et al. (2022) [17], established that among that the OA in female more than male, this is consoled for the autonomic feature of female is differ from male, the multiple pregnancy of the female in Mosul may be increased the possibility of develop OA in female than male in addition to that hormonal change especially in menopausal may also consider the related factor. In this study the percent of the OA in married people 236 (77.1%) are high comparing with other marital status, In a study conducted by Bazazan et al. (2014) showed that the married people have more suffered from OA than other marital status [18]. In line with that, Rabenda et al. (2006), demonstrated the effect married person more sever from OA than other marital status [19]. Subsequently the majority of Mosul community get married even early age comparing with other western counties, therefor the OA get high percent among married patients. The primary education as level of education in patients with OA get the higher percent in 104 (34.0%) among the other level of education. A study by Lee et al. (2021) (20), illustrated that the low level of education has more suffered from OA than other level of education. Thus, many of people leave school in early age to meet your need of living requirements, also they working in different jobs that needed excessive certain joints activity and stress. the house wife was contract the higher percent of 180 (58.8%)

among patients with OA. A study conducted by Shakoor et al. (2003) (21), showed the OA is more common in housewife people. Most housewife in Mosul city are females who fall upon them many responsibilities in cleaning, cooking and children education and even daily shopping that may contribute to increase possibility of develop OA especially when combined with other risk factors of OA.

The primary level of education was of high percent in 104 (34.0%) among other level of education. A study conducted by Marks (2014) illustrated that OA was frequent in 41% of graduates [22]. Compared to 24% in high school. Also another study showed OA is more common in primary level of education [23]. To make ends meet, the majority of the patients who took part in this research and sought advice from the private clinic ended their education and went to work. Because of this, the majority of individuals were dropping out of school at a young age in order to work and support themselves. Housework was the common jobs that associated with symptomatic OA. In a study in 2018 illustrated the house wife through the house work or which mean in Mosul community is the house wife that were working in house associated with many difficulties as needed squatting or lift and carry a shopping bag with 5 kg, bend or kneel down, climbing stairs up and down and others [24]. This fact that also given reason of the OA was more common in female than male especially married people that may additional responsibility towards family. The monthly income of less than 500000 was frequent in 179 (58.5%). A study in 2007 show the effect of monthly income in OA Rationally the patients with low input may associated with occupations that require heavy lifting and repeated motions are linked to osteoarthritis [25]. A higher frequency of OA is linked to poor educational levels and low socioeconomic position, as determined by blue-collar activities. Patients with OA were used certain drugs that 183 (59.8%) of patients were used NSAIDs as analgesic and aid in treatment. A study in showed that this drug may play a role in decease pain associated with OA whereas the pain is common symptoms which may affect to quality of life and may consider the common agent that make patients visit the clinic [26]. Muscle relaxant were taken as aid factor for relieving of pain and stiffness that associated with OA and may be used in those patients that cannot tolerated or contraindication of using NSAIDs. Study take place in 2022 showed the effect of muscle relaxant on OA [27]. In this study frequent of 288 (94.1%) of patients used vitamin D as supplement, Vitamin D play role in OA through reducing pain and improving muscle strength and physical function among patients with OA. WHOQOL-BRIF scale was used to assess the quality of life among patients with symptomatic OA. the odema is one symptom of OA and according to this study showed that increase severity of odema mean that more bad quality of life. rationally the bad quality of life associate with sever odema meaning that the odema may obstacle the many of daily physical activity a walking, sitting and even in lie down more ever the effect on exterior and elegance of person especially in female and this may reflex on social life, physical activity and psychological life (domains of QOL) [28].

All times crepitus as one of the symptoms and has negative impression on the patients with OA through the sound of crepitus implies the big problem in the joint and given idea there are some fracture in joints or near bones which given a feeling of anxiety, fears and even obsessiveness in patients with OA that may lead to badly quality of life. The stiffness in this study takes in different time in morning, in rest, and in over all day and if compare the severity of stiffness in different times showed the overall time stiffness is more badly QOL compering with morning and rest stiffness. A study in 2022 demonstrated the effect of stiffness and pain in QOL domains [3]. Although, the stiffness especially in morning

and in rest may associate with bad feeling and worse QOL but the overall day stiffness may lead to disturb in daily physical activity significant difficulties when using the toilet, shower, bath, putting on socks, and doing hard chores, as stated by OA [29]. Patients often reported difficulties jogging, doing heavy chores, getting in and out of the bath, kneeling, and squatting, in addition to that it may lead to anxiety and sadness, which negatively impacted their quality of life (QOL).

The patients with usually ability of knee bending and knee extension freely without any restriction of pain was got good quality of life compering with patients that have difficulties in knee bending and knee extension. According to the Womac scale as using to assess the daily activity in patients with OA, as one of daily activity was ability of knee extension and knee bending and consider the with this two movement of the knee became freely that mean improve daily physical performance, social life, and improve the psychological life and as result of that it good QOL [30]. Pain is the most common symptom that compels people to consult a doctor and is the primary cause of functional limits and a worse quality of life [4]. In particular, it was shown that there was a substantial correlation between the pain locations and the effect of OA on quality of life [1]. The QOL of the individuals in this research who experienced ongoing pain was poor or worse. Since pain is frequently seen as a crucial warning signal that aids in the body's defense against acute tissue damage and inflammation, a research published in 2022 the impact of pain in OA patients [31]. Pain regulation becomes significantly more difficult when acute pain is not eased and turns into chronic pain [32, 33]. Patients with OA may feel a dull, agonizing pain or unpredictable. A crucial first step in starting OA therapy is changing one's lifestyle, which can also have some positive effects from better management. Patients with no changes to their lifestyle had a higher quality of life, which indicates that their condition was less severe. In 2013 study conducted by Martin et al. (2009) demonstrated that food and activity modifications might enhance quality of life [34]. Exercise, losing weight, mental health, using a western toilet, praying while seated, and food habits were among the lifestyle changes. Patients with OA were taught specific lifestyle modifications and medication regimens that, when followed, could reduce pain and stiffness, enhance function, improve mobility, increase leisure time, lower anxiety and depressive symptoms, and generally improve quality of life. the simple difficulties in OA showed good QOL comparing with strong difficulties. In a study in Turkey, detected the difficulties in knee OA [35]. The difficulties of knee meaning that difficult in walking, in doing in daily activity that with time may lead to negative effect to physical activity and lead to decrease the chance of leisure and lack of social relationship, subsequently, creates a state of depression and deterioration of psychological condition that overall lead to decrease QOL. In this study the no difficulties exhibit as not real statistic result there for not involved in the result of the study due to the only one patient has no difficulties.

Conclusion

The study illustrated the patients with symptomatic OA as pain, crepitus, stiffness especially in morning, in rest, and night stiffness, that increased the severity of the symptoms decrease the QOL. Also, the decrease ability of knee extension and knee bending may associate with bad QOL. In addition to that increase both odema and difficulties of knee may exhibit bad QOL.

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Conflict of Interest

The authors declare no conflict of interest.

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