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Research Article

**KNOWLEDGE, ATTITUDE AND PRACTICE OF PRIMARY
HEALTH CARE PHYSICIANS IN THE MANAGEMENT OF
OSTEOARTHRITIS IN TAIF CITY, WESTERN REGION,
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Abstract:

Introduction: Osteoarthritis (OA) is the most common type of arthritis and the major cause of physical disability in the elderly. OA is often treated in primary care settings by primary health care physicians, and more can be done to relieve symptoms of OA through a variety of therapeutic options.

Methodology: This was a cross-sectional study was conducted to assess OA's knowledge, attitudes, and practices and its management among primary health care physicians in Taif city, Saudi Arabia. A self-administrated questionnaire was constructed for data collection.

Results: A total of 100 physicians were included in this study; 62% were males. The reported mean knowledge score was (67.6 ± 16.7), attitude score (80.4 ± 13.2), and practice score (52 ± 13.9). Age, degree of qualification, and the current position were significantly associated with the attitude score (P=0.005), (P=0.027), and (P=0.000), respectively. Gender was significantly associated with practice score (P=0.047).

Conclusion: This study reported adequate knowledge, negative attitudes, and relatively appropriate practice towards OA management among primary care physicians in Taif city, Saudi Arabia. Females significantly had better practices than males in this study. Younger physicians and specialists had the most positive attitudes towards OA management. Participants with family medicine diploma had high knowledge levels and more positive attitudes towards OA management.

Keywords: Osteoarthritis, primary care, knowledge, attitude, and practice.

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INTRODUCTION:

OA is the commonest form of arthritis and often affects the hand, knees, feet and hips. There is substantial morbidity associated with OA, including disability and reduced quality of life. OA is the leading cause of lower extremity disability in older adults [1]. The number of people affected with symptomatic OA is likely to increase due to the ageing of the population and the obesity epidemic. OA has a multifactorial etiology and can be considered the product of an interplay between systemic and local factors. Old age, female gender, overweight, obesity, knee injury, repetitive use of joints, bone density, muscle weakness, and joint laxity all play roles in the development of joint OA, particularly in the weight-bearing joints. Modifying these factors may reduce the risk of OA and prevent subsequent pain and disability [2].

Radiographic OA is mainly assessed by the Kellgren and Lawrence score, which grades the severity of the disease from 0 to 4 by the appearance of osteophytes, joint space loss, sclerosis and cysts. These criteria were adopted by the World Health Organization (WHO) to define radiographic OA in epidemiologic studies; the history and the examination define clinical OA. Several standards have been proposed for the diagnosis of clinical OA; the most recognized may be the criteria of the American College of Rheumatology [3].

According to the American College of Rheumatology, criteria for the classification and reporting of OA of the knee include clinical and laboratory diagnostic criteria; knee pain plus at least 5 of the following nine criteria: age >50 years; stiffness <30 minutes; crepitus; bony tenderness; bony enlargement; no palpable warmth; ESR <40 mm/hour; RF <1.40; synovial fluid signs of OA. The Clinical and radiographic diagnostic criteria; knee pain plus osteophytes, plus at least 1 of the following three criteria: age >50 years; stiffness <30 minutes; crepitus [4].

According to the American College of Rheumatology criteria for the classification and reporting of OA of the hip if the pain is present plus either 1) hip internal rotation $\geq 15^\circ$; pain present on internal rotation of the hip; morning stiffness of the hip for ≤ 60 minutes; age >50 years, or 2) hip internal rotation $< 15^\circ$; ESR ≤ 45 mm/hour. If no ESR was obtained, hip flexion $\leq 115^\circ$ is substituted [5].

Patients may also be classified as having OA if they have pain plus 2 of the following three radiographic criteria: osteophytes (femoral or acetabular); joint

space narrowing (superior, axial, and medial); ESR <20 mm/hour [5].

American College of Rheumatology criteria for the classification and reporting of OA of the hand: on examination, there is hard tissue enlargement involving at least 2 of 10 selected joints, swelling in <3 MCP joints, and hard tissue enlargement of at least 2 DIP joints [6].

If the patient has <2 enlarged DIP joints, then deformity of at least 1 of the 10 selected joints is necessary in order to classify the symptoms as being due to OA. OA and its related complications are one of the major healthcare problems around the globe. The major complications of OA are functional decline and inability to perform activities of daily living, spinal stenosis in cervical and lumbar OA, NSAID-related gastrointestinal bleeding and joint effusion [7]. The risk factors of OA can be divided into person-level factors, including age, gender, obesity and genetics and diet, and joint-level factors, including injury and abnormal loading of the joints. Knee malalignment is the strongest predictor of progression of knee OA [8]. Obesity is the greatest modifiable risk factor for OA. Subjects with a BMI >30 kg/m² were 6.8 times more likely to develop knee OA than normal-weight controls. A recent meta-analysis reported that the pooled odds ratio for developing OA was 2.63 (2.28, 3.05) for obese subjects than normal-weight controls. OA affects all aspects of life through pain and limitation of mobility [9].

An epidemiological analysis in Saudi Arabia showed 766 (13%) cases of clinical OA of the knee in the 5,894-adult population (13%). The prevalence of OA increased with increasing age reaching 30.8% in those aged 46-55 years and 60.6% in the age group 66-75 years [10].

General Practitioners are considered to play principal roles in implementing preventive measures, early detection and management of chronic disease within any health care system. Also, identifying the most prevalent risk factors and maintaining follow-up practices could be applied easily within the process of general practice [11].

The researcher needs to evaluate the Knowledge, attitude and practice (KAP) of OA and its management because (KAP) surveys can assess communication processes and sources essential for defining effective activities in prevention and control. KAP studies may evaluate needs, problems, and barriers in health care

program and solutions to improve the quality and accessibility of services [12].

Allen et al. in North Carolina, United States, reviewed recent studies of OA epidemiology, including research on prevalence, incidence, and a broad array of potential risk factors at the person level and joint level, and summarized that OA is a complex, multifactorial disease. There is still much to learn regarding mechanisms underlying incidence and progression. However, there are several known modifiable and preventable risk factors, including obesity and joint injury; efforts to mitigate these risks can help to lessen the impact of OA [13].

Litwic et al. in Oxford, United Kingdom, concluded at the end of the chapter that OA is the commonest joint disease worldwide and mainly occurs in later life. It tends to be slowly progressive and can cause significant pain and disability. Symptoms and radiographic changes are poorly correlated, and thus defining it for research purposes is challenging. Established risk factors include obesity, local trauma and occupation. These may explain some of the geographic variation seen. There is conflicting evidence regarding the roles of nutrition, smoking and sarcopenia.

Interestingly, low BMD appears to be protective. The burden of OA is physical, psychological and socioeconomic. It can be associated with significant disability, such as reduced mobility and activities of daily living. Psychological sequelae include distress, devalued self-worth and loneliness. Given the high frequency of OA in the population, its economic burden is large [14].

As a result, it is important that they are familiar with the different treatment services in order to provide the best possible care. Many studies have been conducted in various countries to assess OA in hospitals or PHC settings [15]. OA is a silent disease and more likely to be misdiagnosed and undertreated in general practice. No similar study up to the researcher's knowledge was carried out among primary care physicians in Taif city in this regard. OA can be prevented, diagnosed, and treated before disability occurs.

Aim of the study

This study aims to assess OA's knowledge, attitudes, practices, and management among primary healthcare physicians in Taif city.

Specific objectives

- To assess the level of Knowledge, Attitude and Practice of Primary Health Care Physicians in The Management of OA in Taif City.
- To study the association between demographic data and good practice of OA management.

METHODOLOGY:

Study design

A cross-sectional study design was conducted.

Study area

The study was carried out at Taif city; it is located in the Makkah region of western Saudi Arabia on the eastern slopes of the Sarawat Mountains at an altitude of 1,700 meters above sea level with an area of 1036 km². One of the most important characteristics of Taif is its location, which is characterized by its proximity to Mecca. The population of the province in 1435 is estimated at 993.8 thousand people, 12.79% of the total population of the Makkah region.

Study setting

The study was conducted in all MoH PHCCs inside Taif City and related to the Directorate of Health Affairs in Taif, 19 centers.

Study period

The study was conducted in approximately eight weeks period and started in 2019.

Study population

Primary health care physicians working in centers belong to the ministry of health in Taif city throughout the study period were included.

Sample size

All primary healthcare physicians working in centers belong to the ministry of health, which was available at the time of the study (around 100 physicians).

Inclusion Criteria

- Primary health care physicians are working in MoH in Taif city.
- Males and females.
- All nationalities.
- All degrees (resident, specialist and consultant).

Exclusion Criteria

- Physicians are working in hospitals.
- Physicians who are on vacations or who are absent.
- Physicians who are not working in ministry of health.

- Physicians who are working in the administrative office and not covering a clinic.
- Dentists.

Data collection tools

A self-administered questionnaire was constructed and comprised of 38 closed-ended questions, 6 items about sociodemographic characters, and 32 questions about knowledge, attitude, and practice in OA management. The validity of the questionnaire was assessed by 3 Family Medicine Consultants and 1 Community Medicine Consultant.

Scoring system

For knowledge items, a correct answer corresponded to a score of 1, and an incorrect answer was scored 0. Similarly, for attitude and practice items, positive attitude and good practice choices corresponded for a score of 1, whereas negative attitude and poor practice received 0. Knowledge, attitude, and practice items scores were summed for each scale separately, and score percentages were calculated. We used the median for each score as a cut-off point for good and poor knowledge (72.7%), positive and negative attitude (83.3%), and good and poor practice (54.5%).

Data entry and statistical analysis

Data entry and analysis were done using the Statistical Package of the Social Sciences (SPSS) statistical program version 26. Descriptive statistics were performed to express data in frequencies and percentages. Kruskal-Wallis test and Mann-Whitney U test were used for mean analyses of knowledge and attitude scores. A p-value significance value was set at ≤ 0.05 .

Ethical consideration

Permission from the regional Research and Ethical Committee in Taif city was taken for conducting the study. Permission from the director of primary care centers in Taif was obtained. Privacy of physician's information and confidentiality was maintained. All the subjects participated voluntarily in the study.

RESULTS:

Table (1) shows the sociodemographic characteristics of 100 primary care physicians. Most participants were males (62%), 42% aged 25-28 Years and 39% aged >31 years. The majority (99%) were Saudi populations. Most of them (61%) had MBBS, 35% had board-certified family medicine degree, and only 3% had a family medicine diploma. Most participants (71%) were residents, 24% were specialists, 4% were general practitioners, and 1% were consultants. More than half of them (57%) had >5 years of experience.

Table (2) indicates the participant's knowledge about OA management. The majority (91%) knew that multifactorial is the cause of OA, 89% knew that diagnosis of OA could almost be made by history and physical examination, 71% knew that OA patient could not be presented by morning stiffness lasts more than 30 minutes, 90% knew that plain radiography helps in confirming the diagnosis, 47% knew that radiographic changes in OA do not include symmetrical joint space narrowing, 85% knew that lab tests are not essential to make a diagnosis, 63% knew that ESR and CRP are not high in case of OA, 68% knew that treatment of OA should not base solely on radiographic abnormality, 61% knew that pathological features of OA do not include increasing synovial fluid viscosity, and 76% knew that recommendations for the management of OA do not have pharmacological therapy is the mainstay of OA management. Only 2% of the participants were aware that the knee joint was the least joint affected by OA.

Table (3) presents the knowledge mean score of the participants (67.6 ± 16.7). More than half of them (56%) had good knowledge regarding OA management.

Table (4) shows the participants' attitude towards OA management. The majority (93%) agreed that OA is a common health problem in Saudi Arabia, 79% agreed that OA is a part of growing old, 82% agreed that OA causes excessive anxiety and concern to patient, 80% disagreed that prescribing medications to asymptomatic patients with x-ray positive OA findings, 91% agreed that family involvement in management of patient with OA, 66% agreed that training prepared them adequately to manage patients with OA, 98% agreed that the primary health care physician could be a useful person to support OA patients, 57% disagreed that during OA counseling, education for weight loss should be offered only to obese adults ($BMI > 30 \text{ kg/m}^2$), 99% agreed that collaboration with other health professionals especially trained nurses, dietitians and physiotherapist is very important tool for OA patient care, 43% agreed that screening programs for OA is avourable to improve care of OA patients, all participants (100%) agreed that primary health care physicians can achieve a major role in control of OA, and 78% agreed that non-pharmacological therapy would be more beneficial then pharmacological therapy for most OA patients.

Table (5) presents the participants' mean attitude score (80.4 ± 13.2). More than half of them (59%) had negative attitudes towards OA management.

Table (6) shows the participants' practice of OA management. Most participants (73%) educate their patients and present self-management programs most of the time, less than half of them (44%) provide social support, 66% recommend aerobically and strengthening exercises, 65% recommend weight loss options programs, 31% suggest that assistive devices for ambulation and activity of daily living, 69% give oral non-opioid analgesics (e.g., Paracetamol) to their patients, 68% give topical analgesics (e.g., Capsaicin cream), 59% give non-Steroidal Anti-Inflammatory drugs, and 36% give nutritional supplements (e.g., Vitamin D). Most participants (61%) never give intra-Articular Steroid injection to OA patients, and 76% never give opioid analgesics.

Table (7) presents the practice mean score of the participants (52.0 ± 13.9) towards OA management. More than half of the participants (51%) had poor

practice.

Table (8) investigates the association between the sociodemographic characteristics and the knowledge, attitude, and practice mean score. Age was significantly associated with the attitude score ($P=0.005$), as more positive attitudes were detected among older age groups (>31 years) with (84.4 ± 12.5). Gender was significantly associated with practice score ($P=0.047$); better practice levels were found among female participants (55.8 ± 15). There was a significant association between the degree of qualification and attitude score ($P=0.027$). Participants with board-certified family medicine and family medicine diplomas had more positive attitudes (84.3 ± 11.4) and (91.7 ± 14.5), respectively. The current position was significantly associated with the knowledge score ($P=0.001$) and attitude score ($P=0.000$). Specialists had a higher knowledge score (74.7 ± 19.6) and attitude score (89.6 ± 10.5).

Table (1): The sociodemographic characteristics of the participants (n=100).

	Parameter	Frequency (%)
Age, y	• 25-	42 (42%)
	• 29-	19 (19%)
	• 31-	39 (39%)
Gender	• Female	38 (38%)
	• Male	62 (62%)
Nationality	• Egyptian	1 (1%)
	• Saudi	99 (99%)
Degree of qualification	• Board Certified Family Medicine	35 (35%)
	• Family Medicine Diploma	3 (3%)
	• Master's Degree	1 (1%)
	• MBBS	61 (61%)
Current Position	• Consultant	1 (1%)
	• General Practitioner	4 (4%)
	• Resident	71 (71%)
	• Specialist	24 (24%)
Years of experience	• <5	57 (57%)
	• 5 or more	43 (43%)

Table (2): The knowledge of the participants about OA.

Knowledge item		Correct answer	Frequency (%)
The cause of osteoarthritis is:	Ageing process	Multifactorial	91 (91%)
	Multifactorial		
	Unknown		
Diagnosis of osteoarthritis can almost be made by history and physical examination:	False	True	89 (89%)
	True		
	I do not know		
The least joint that can be affected by osteoarthritis is:	Hip	Knee	2 (2%)
	Knee		
	Shoulder		
	Wrist		
The patient usually presents with all of the following EXCEPT:	Bony swelling	Morning stiffness lasts more than 30 minutes	71 (71%)
	Limitation of motion		
	Morning stiffness lasts more than 30 minutes		
	Pain		
Plain radiography helps in confirming the diagnosis	False	True	90 (90%)
	True		
	I do not know		
Radiographic changes in osteoarthritis include all of the following EXCEPT:	Cystic formation	Symmetrical joint space narrowing	47 (47%)
	Osteophyte formation		
	Subchondral sclerosis		
	Symmetrical joint space narrowing		
Lab tests are essential to make a diagnosis:	False	False	85 (85%)
	True		
	I do not know		
ESR and CRP are high in the case of osteoarthritis:	False	False	63 (63%)
	True		
	I do not know		
Treatment of osteoarthritis should not base solely on radiographic abnormality:	False	True	68 (68%)
	True		
	I do not know		
Pathological features of OA include all of the following EXCEPT:	Bone sclerosis	Increase synovial fluid viscosity	61 (61%)
	Degeneration of articular cartilage		
	Increase synovial fluid viscosity		
	Synovitis		
Recommendations for the management of OA include all of the following EXCEPT:	Exercise has similar effects on pain compared with NSAIDs	Pharmacological therapy is the mainstay of OA management	76 (76%)
	Patient education is an essential tool to optimize OA management		
	Pharmacological therapy is the mainstay of OA management		
	Targeting modifiable risk factors		

Table (3): The knowledge mean score.

Parameter	Mean \pm SD
Knowledge score	67.6 \pm 16.7
Parameter	Frequency (%)
Good knowledge	56 (56.0%)
Poor knowledge	44 (44.0%)

Table (4): The attitude of the participants towards OA management.

Attitude item	Agree	Disagree	Not certain
OA is a common health problem in Saudi Arabia:	93 (93%)	3 (3%)	4 (4%)
OA is a part of growing old:	79 (79%)	15 (15%)	6 (6%)
OA causes excessive anxiety and concern to patient:	82 (82%)	1 (1%)	17 (17%)
Prescribing medications to asymptomatic patients with x-ray positive OA findings:	14 (14%)	80 (80%)	6 (6%)
Family involvement in management of patient with OA:	91 (91%)	1 (1%)	8 (8%)
Your training prepared you adequately to manage patients with OA:	66 (66%)	14 (14%)	20 (20%)
The primary health care physician could be a useful person to support OA patients:	98 (98%)	0 (0%)	2 (2%)
During OA counselling, education for weight loss should be offered only to obese adults (BMI>30kg/m ²):	32 (32%)	57 (57%)	11 (11%)
Collaboration with other health professionals especially trained nurses, dietitians, and physiotherapist, is a very important tool for OA patient care:	99 (99%)	1 (1%)	0 (0%)
Screening programs for OA is favourable to improve the care of OA patients:	43 (43%)	42 (42%)	15 (15%)
Primary health care physicians can achieve a major role in control of OA:	100 (100%)	0 (0%)	0 (0%)
Non-pharmacological therapy would be more beneficial than pharmacological therapy for most OA patients:	78 (78%)	6 (6%)	16 (16%)

Table (5): The attitude mean score.

Parameter	Mean \pm SD
Attitude score	80.4 \pm 13.2
Parameter	Frequency (%)
Positive attitude	41 (41.0%)
Negative attitude	59 (59.0%)

Table (6): The participants' practice about OA management.

Practice item	Most of the time	Never occurs	Occasionally
Patient education and self-management programs.	73 (73%)	7 (7%)	20 (20%)
Social support.	44 (44%)	23 (23%)	33 (33%)
Aerobic and strengthening exercises.	66 (66%)	11 (11%)	23 (23%)
Weight loss options programs.	65 (65%)	8 (8%)	27 (27%)
Assistive devices for ambulation and activity of daily living.	31 (31%)	36 (36%)	33 (33%)
Oral non-opioid analgesics (e.g., Paracetamol).	69 (69%)	7 (7%)	24 (24%)
Topical analgesics (e.g., Capsaicin cream).	68 (68%)	3 (3%)	29 (29%)
Non-Steroidal Anti-Inflammatory drugs.	59 (59%)	0 (0%)	41 (41%)
Intra-Articular Steroid injection.	8 (8%)	61 (61%)	31 (31%)
Opioid analgesics.	2 (2%)	76 (76%)	22 (22%)
Nutritional supplements (e.g., Vitamin D)	36 (36%)	28 (28%)	36 (36%)

Table (7): The practice mean score.

Parameter	Mean ± SD
Practice score	52.0 ± 13.9
Parameter	Frequency (%)
Good practice	49 (49.0%)
Poor practice	51 (51.0%)

Table (8): The association between the sociodemographic characteristics and the knowledge, attitude, and practice mean score.

Parameter	Knowledge score	Attitude score	Practice score	
Age, y	25-	67.8±13.8	75.8±12.4	52.9±14.8
	29-	63.2±16.8	82.5±13.9	52.7±14.4
	31-	69.5±19.4	84.4±12.5	50.9±13
	P-value	0.236	0.005	0.931
Gender	Female	67.7±14.9	81.8±12.6	55.8±15
	Male	67.5±17.9	79.6±13.6	49.8±12.9
	P-value	0.957	0.396	0.047
Nationality	Egyptian	36.4±	75±	63.7±
	Saudi	67.9±16.5	80.5±13.3	51.9±14
	P-value	0.113	0.479	0.347
Degree of qualification	Board Certified Family Medicine	70.7±21.1	84.3±11.4	53.3±11.1
	Family Medicine Diploma	54.6±24.1	91.7±14.5	36.4±9.1
	Masters Degree	54.6±	66.7±	63.7±
	MBBS	66.7±13.2	77.9±13.5	51.9±15.3
	P-value	0.084	0.027	0.134
Current Position	Consultant	81.9±	75±	54.6±
	General Practitioner	45.5±7.5	73±12.5	50±11.8
	Resident	66.2±14.8	77.9±12.8	52.5±15
	Specialist	74.7±19.6	89.6±10.5	50.8±11.4
	P-value	0.001	0.000	0.971
Years of experience	<5	66.9±15	78.6±13.5	52.2±15.5
	5 or more	68.5±19	83±12.5	51.8±11.9
	P-value	0.39	0.066	0.969

DISCUSSION:

Physicians in primary care play an important role in the care and education of people with OA. They can enhance awareness and encourage OA patients to adopt a healthier lifestyle, which will lead to better pain management and disability 16. This study aims to assess OA's knowledge, attitudes, and practices and its management among primary health care physicians in Taif city, Saudi Arabia.

This study found that most participants had adequate knowledge about OA management; however, only 2% were aware that the knee joint was the least joint that can be affected by osteoarthritis. The mean knowledge score of the participants (67.6 ± 16.7) and more than half of the participants (56%) had good knowledge regarding OA management. A cross-sectional reported inadequate knowledge regarding OA management among primary healthcare physicians in Al-Jouf, Saudi Arabia. They also found that the majority of physicians in the study (75.3%) considered OA as a common health problem in Saudi Arabia¹⁷; our findings found 93% of the physicians agreed that OA is a common health problem. Multifactorial is the primary cause of OA,¹⁸ our study found that 91% of physicians knew that, which was much higher than Hamoud¹⁷ (59.7%) and Tawfeeq¹⁹ (78.4%). Alami et al. stated in their qualitative study in France that practitioners employed in PHCC had a good knowledge of osteoarthritis and its management²⁰.

The mean attitude score in this study was (80.4 ± 13.2), and 59% of the physicians had negative attitudes towards OA management. The majority (82%) believed that OA causes anxiety to the patients. This was consistent with Paskins et al., who reported that most patients with OA disease in the UK live with intense pain, and their treatment is either ineffective or ineffective, which causes them anxiety²¹.

The majority of participants in this study agreed that non-pharmacological therapy is better than pharmacological therapy. This was consistent with a study conducted in Australia, which reported no cure for OA²². Most participants in our study disagreed that prescribing medications to asymptomatic patients with x-ray positive OA findings; this was consistent with many previous studies^{17,19, 23}. SA et al. conducted a study in Canada and found a clear discordance in OA conservative management and heterogeneity in PHCC physicians' perceptions of osteoarthritis diagnosis, especially radiography²³. Bedsons et al. noted that doctors should avoid using the word OA due to the difficulty of correlating the diagnostic test (radiography) with symptoms,

diagnosis, and result, as well as concern about the label's potential for damage²⁴.

The current study reported a mean practice score of (52.0 ± 13.9) and more than half of the physicians (51%) had a good practice. The majority of the physicians recommend education and self-management programs to their patients and educate them about the importance of weight loss to control joint pain. Abdul-Qahar et al. found out that majority of patients with knee OA were obese. This result may be explained by an increase in stress and force on the weight-bearing joints. This additional physical load can cause cartilage breakdown, leading to OA in overweight subjects²⁵. Similar findings were discovered in a study conducted in the United States by Felson et al., who discovered that overweight people had a higher bone density, which may be a risk factor for OA²⁶.

More than half of the physicians in this study reported using NSAIDs, and most of them used Paracetamol to manage OA. This was consistent with the findings of a previous study conducted in Turkey in 2002 to determine PHC physicians' drug preferences for OA. According to the cited report, anti-inflammatory and anti-rheumatic products were the leading groups, accounting for 59.6% of the prescription drugs for OA among the examined physicians²⁷. One of the main goals in OA management is to alleviate discomfort in the affected joints. For the treatment of OA pain, a variety of modalities are available. As a result, PHC physicians should be aware of both proven and unproven OA medications since any misunderstanding about OA drugs can negatively affect patient care and safety²⁸. Rosemann et al. reported that pain treatment was not performed according to prevailing guidelines. GPs felt frustrated about the impact of counselling regarding lifestyle changes but, on the other hand, admitted having no systematic approach to it. Patients stated to be aware of the impact of lifestyle on OA but lacked detailed information, e.g. on how to exercise. Several suggestions were made concerning improvement¹⁶. Mamlin et al. demonstrated that family physicians in the US were more likely to examine for crepitation, joint stability, and quadriceps muscle strength than were general internists. Patients with OA of the knee treated by family physicians were more likely to receive non-steroidal anti-inflammatory drugs or oral corticosteroids. They were less likely to receive aspirin, acetaminophen, or narcotics compared with patients treated by general internists²⁹.

In this study, only 2% of the physicians prescribed opioid analgesics, which was lower than the percentage reported by Tawfeeq¹⁹. This could be

attributed to drug shortages or most physicians' fear of patients misusing these drugs; this is consistent with the Rosemann et al. who described a reluctance among PHCC physicians to prescribe opiates for OA, owing to patients' automatic rejection of these "strong" drugs, in addition to physicians' perceptions 16.

This study revealed inadequate practices of PHCC physicians regarding assistive devices and intra-articular steroids injection. The majority of PHCC physicians did not recommend intra-articular steroid injections to OA patients due to a lack of preparation, consistent with Homoud17 in Saudi Arabia and Tawfeeq19 in Iraq.

We found a significant association between gender and practice score as female physicians had better practices towards OA management. Age, degree of qualification, and current position were significantly associated with the attitude score. Younger physicians and specialists had the most positive attitudes towards OA management. Participants with family medicine diploma had high knowledge levels and more positive attitudes towards OA management. Tawfeeq19 also reported more positive attitudes among younger participants with >5 years of experience and physicians with a higher speciality. These findings were consistent with Schonberg et al. in the United States, which found that physicians in PHCC with higher scientific qualifications perceived stronger attitudes toward osteoarthritis than physicians with lower qualifications 30.

CONCLUSION:

This study reported adequate knowledge, negative attitudes, and relatively appropriate practice towards OA management among primary care physicians in Taif city, Saudi Arabia. Low levels of knowledge were recording regarding the fact that the knee joint is the least affected joint by OA. Most participants reported no cure for OA, and the physicians usually give NSAIDs and non-opioid analgesics as treatment modalities. Poor practices were detected regarding assistive devices and intra-articular steroids injection. Females significantly had better practices than males in this study. Younger physicians and specialists had the most positive attitudes towards OA management. Participants with family medicine diploma had high knowledge levels and more positive attitudes towards OA management.

Recommendations

PHC physicians can participate in well-planned Continuing Medical Education (CME) activities such as workshops and group discussions with primary care doctors. More national multi-center research on

physician awareness, attitudes, and procedures in primary care centers must be funded. Medical education should be maintained and tracked on an ongoing basis.

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