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RESEARCH ARTICLE
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FACTORS OF DIFFERENT TYPES OF JOINT LEADING TO JOINT PAIN IN PATIENTS OF OSTEOARTHRITIS VISITING HAYATABAD MEDICAL COMPLEX.

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ABSTRACT

Objective: To identify frequency and factors of different types of joint leading to joint pain in patients of osteoarthritis visiting hayat abad medical complex.

Study design: Descriptive cross-sectional study

Place and duration of study: 6 months duration

Methodology: This descriptive cross-sectional study with 320 sample size and ages 18 to 60 years while the Sampling method was a non probability convenience sample. Semi-structured questionnaire was designed by the researcher to collect data .Data was collected from 1st October 2021 to 1st March 2022. Questions regarding the involvement of major and minor joints like the knee joint, elbow,neck,wrist ankle,hip and small joints of the hand and foot and factors associated with the pain and inflammation in the joint were asked . Other variables were age, gender, occupation, type of joint, stress, treatment options and previous trauma to the joint. A 10% sample was used for Pre-testing to check the questionnaire's feasibility and sequence of questions. The sample was analysed by SPSS version 22.

Results: The sample size was 320 out of which 65%were females while 35% were males.In majority of cases knee joints were associated with pain 34.38%, wrist joint 15%, hip joint 13.43% and neck 8.75% due to poor posture 15%,back joints 13.13%, labour working in construction and industries were10% and twisted posture was 13.37%. Factors leading to joint pain were obesity among 20% of patients and overweight 32.18% ,stress found in 16.88%while moderate stress was in 35% of individuals. Patients taking conservative treatment in which regular exercise was found among 27.18%, weight loss in 16.88%, treatment with NSAIDs in 15%, antibiotics 33.43% and steroids were taken by 7.5% of patients. Road traffic accidents were 12.8% history of fall were 11.87% while fracture was found in 7.5% of patients.

CONCLUSION: The study concluded that the knee joint, hip joint, wrist joint and back and neck joints were the most affected joints. Obesity, low education, poor posture and stress were the contributing factors leading to joint pain.
KEYWORDS: Types of joint, obesity, BMI, leading factors to joint pain, types of treatments, stress.

Introduction

Chronic disease of the joint leads to pain and disability involving the joint,bone,ligaments,synovial membrane, capsule and periarticular muscles. Osteoarthritis is one of the diseases which influence the quality of life whereas its treatment options remain limited.Large joints like kneejoints,hipjoints and hand joints are frequently affected by osteoarthritis with increasing age.[1]The knee joint is innervated by both sensory and sympathetic peripheral nerve fibres, which perform actions such as nociception, vasoregulation and proprioception.[2]Sensory nerve fibres are myelinated and unmyelinated fibres. The joint capsule, synovium,menisci, ligaments and subchondral bone are innervated by these sensory myelinated and unmyelinated fibres.[3]The articular cartilage of the joint is not innervated by these fibres because cartilage is avascular under normal conditions.[4]The Aβ fibres are activated by the movement of the joint whereas the Aδ and C fibres are activated by thermal stimuli, inflammatory mediators,and noxious mechanical and chemical stimuli.[5]Aδ fibres project from the periphery to laminae I and V of the dorsal horn of the spinal cord, whereas second-order neuron synapse with C fibres in lamina II of the dorsal horn.[6]The main symptoms of Osteoarthritis (OA) are joint Pain, reducedjoint function and joint stiffness.[7]Swelling and crepitus in joints, reduced range of motion, joint instability, muscle weaknessand psychological distress related to pain are also commonly seen in patients with OA.[8]Chronic fatigue is also prevalent in patients with OA, which can lead to heightened pain and depression. Among these symptoms, pain is the most dominant and a major driver of clinical decision-making and is best framed within a biopsychosocial model.[9]Poor pain management is the major reason for total joint replacement.[10]

The patients taking(NSAID) non-steroidal anti-inflammatory drugs for the management of osteoarthritis, rheumatoid arthritis, joint discomfort and low back pain, about 26% of the individuals are using analgesic medication. In osteoarthritis patients 70% take prescription medication to control joint symptoms.[11]

The guidelines exist for the management of osteoarthritis but in spite of patients using inappropriate multiple analgesic medications to subside osteoarthritis joint pain. In the United States and the United Kingdom, 54% of patients are unaware of drug side effects and drugs taken prophylactically or at the onset of pain.[12]

In the United States, it has been determined which medications need to be combined for the treatment of osteoarthritis patients and if patients are taking medicationsit can cause gastrointestinal toxicity, hepatic complications and renal complications.[13]

Pain is the fourth leading cause of disability which is a major public health issueis estimated that worldwide 9.6% of men and 18.0% of females aged 60 years were affected with joint pain.[2]The purpose of the present study is to estimate the different types of joints and their associated factors with joint pain in patients visiting tertiary care hospitals.

Method and materials

It was a cross-sectional descriptive study conducted in tertiary care hospital of Peshawar 1st October 2021 to 1st March 2022. The study population included all the OPD patients of joint pain of osteoarthritis visiting the hospital and the target population was patients visited from all public hospitals of Peshawar. The sampling method was non probability convenience sampling, sample size was 320 individuals from 20 years to 60 years visiting hospitals. All the neurological patients, gynaecological patients, pregnant ladies and psychiatric patients were excluded from the study. The duration of the study was six months after the approval of the synopsis.

A semi-structured questionnaire was designed and consists of questions about demographic information, including age, gender, location, education, occupation, income, trauma, stress , treatment strategies, road side accidents and medicines used to subside the pain were the factors included in the

questionnaire. Pre-testing was done to check the feasibility, the sequence of questions weight was measured in kg while height was in meters or inches. The patient's age was from 20-80 years with diagnosed osteoarthritis pain in joints. The sample was analysed by SPSS version 22. Descriptive statistic was calculated for all the included variables the efficacy of the procedure was compared with the VAS scale. All the results were calculated and presented in the form of

Results

The sample size was 320 out of which 65% were females while 35% were males the joints associated with pain were the knee joint 34.38%, wrist joint 15%, hip joint 43% and neck 28% due to poor posture 15%, labor working in construction and industries were 10% and twisted posture was 13.37%. Factors leading to joint pain were obesity among 20% of patients and overweight 32.18% ,stress found in 16.88% while moderate stress found in 35% of individuals. Patients taking conservative treatment in which regular exercise and weight loss was found among 16.88%, treatment with NSAIDs in 15%, antibiotics 27.18% and steroids were taken by 7.5% of patients. Road traffic accidents were 12.8% history of fall were 11.87% while fracture was found in 7.5% of patients.

S.no	Gender	Frequency	Percentage
1	Female	208	65%
2	Male	112	35%
	Total	320	100%
	Location		
1	Rural	198	61.87%
2	Urban	122	38.13%
	Total	320	100%
	Education		
1	Primary	158	49.47%
2	Matric	134	41.8%
3	University	28	8.75%
	Total	320	100%

Table 1= Sociodemographic profile of a patient with joint pain

S.no	Joint s experienced pain		Percentage
1	Back joints	42	13.13%
2	Shoulder	26	8.12%
3	Neck	28	8.75%
4	Wrist	48	15%
5	Hip	43	13.43%
6	Knee	110	34.38%
7	Ankle	23	7.2%%
	Total	320	100%

Table 2= Joints frequently involved in pain and disability

S.no	Joint injury		Percentage
1	Nil	99	30.94%
2	Previous joint infection	29	9.1%
3	Joint dislocation	22	6.87%
4	Road traffic accident	41	12.8%
5	History of fall	38	11.87%
7	Muscle weakness	12	3.75%
8	Tendon trauma	9	2.81%
9	Sprains	8	2.5%

10	Fracture	24	7.5%
11	Others	38	11.87%
12	Total	320	100%

Table 3= Patient with previous joint injury

S.no	Occupation		Percentage
1	Housewife	58	18.13%
2	Labour (industry)	28	8.75%
3	Labor (hard work)	32	10%
4	Sports	21	6.56%
5	Climbing /walking	28	8.75%
6	Work in a twisted position	44	13.37%
7	Exercise (Gym)	28	8.75%
8	Work in a standing position	39	12.18%
9	Poor posture	48	15%
	Total	320	100%

Table = Joint pain in different occupations

S.no	Treatment options by patients		Percentage
1	NSAIDS	48	15%
2	Steroids	24	7.5%
3	Physiotherapy	55	17.18%
4	Use of antibiotics	87	27.18%
5	Exercise and Weight loss/ reduction	54	16.88%
6	Surgical procedure	52	16.25%
	Total	320	

Table = Treatment options for patients with joint pain.

S.no	Stress		Percentage
1	Mild Stress	154	48.12%
2	Moderate Stress	112	35%
3	Severe Stress	54	16.88%
	Total	320	100%

Table = pain in joint associated with depression

Discussion

In the social environment especially in industrialized societies low back pain is a common pathological condition causing morbidity which affects people. This study is about the sociodemographic and physical functional profile of the patient with acute, chronic and sub-acute back pain of nonspecific and specific origin. These pains were managed in the physiotherapy institution of the city of Manaus/Am. This is a descriptive and retrospective study with quantitative data and evaluates 151 medical charts and less than 18 years were excluded from the study. In the study, the prevalence of low back pain was 17% with 82.5% abnormal postural position. In the present study 13.35% were affected with low back pain and 13.13% were working in a twisted position.14In the present study 13.13% is back joint pain while 13.37% were working in twisted position. In the present study patients with joint pain were taking NSAIDS 7.5%, exercise and weight loss 16.88% to treat the pain in different joints

Arthritis pain affects millions of people worldwide the sensory innervation of joints of diarthrodial joints leads to pain generation. Nerves of the joint during inflammation are sensitized to mechanical stimuli via the action of ion channel ligands, eicosanoids, neuropeptides and proteinase-activated receptors.[15]

The study was conducted by the WHO STEPS Survey 2019 from all seven provinces of Nepal including rural and urban areas both the study estimated the prevalence of joint pain and its relationship with demographic profile and behaviour factors in the Nepal population,it was a cross-sectional study, population-based health survey. The study population was male and female from 15 to 69 years. The outcome of the study was joint pain related to joint stiffness,pain and inflammation for more than 1 month in one year.the prevalence of joint pain in the Nepal population was found to be 17% (95% CI 14.3% to 20.2%) in female and older adults.The education status was primary education,smokers,homemakers and lowest wealth quintile living in Karnali province of Nepal. In multivariable analysis joint pain was associated with progressive age OR (AOR)=2.36; 95% CI 1.56 to 3.55), while gender (AOR=1.47; 95% CI 1.19 to 1.82) and physical activity was (AOR=0.40; 95% CI 0.25 to 0.65). The study showed an increased prevalence of joint pain in the Nepal population.[16]
In our study 65% were female and 35% were male while the educational status was primary education 49.47% and education at university level was 8.75% there was no history of smoking because most of the females were involve in joint pain in our study and living in rural areas 61.87% history of fall 11.87%.
While transitioning from early (disease duration ≤6 months for RA and ≤3 years for SpA) to long-standing disease, differences in pain evolution emerged as a function of age ($P < 0.001$), sex ($P = 0.050$), and ethnicity ($P = 0.001$) in RA, and as a function of age ($P = 0.048$) in SpA; younger age, males, and Caucasians exhibited lower pain in the latter phases of both diseases. Highly educated participants (RA, $\beta = -3.8$, $P = 0.007$; SpA, $\beta = -6.0$, $P < 0.001$) for both diseases and Caucasians ($\beta = -5.6$, $P = 0.021$) for SpA presented with low pain early in the disease, with no changes throughout the disease course.Being older, female, non Caucasian and having lower education was found to be associated with worse pain in early and/or long-standing IRDs, despite universally accessible health care. Early identification of at-risk populations and implementation of multidisciplinary strategies may reduce patient-reported health outcome disparities.[17] In the present study,females are more prone to joint pain as compared to males, education also influence the results of the present study as the primary education got 49.47% of patients with joint pain as compared to university 8.75% same is the case in rural areas the 61.87% suffering from joint pain as compared to urban areas 38.13%. Patients with joint pain who were standing for a long time were 12.18%.

Conclusion

The study concluded that the knee joint, hip joint, wrist joint and neck and back joints were the most affected joints. Obesity, low education, working in standing position and twisting posture and stress were the contributing factors leading to joint pain.use of antibiotics were more effective way to reduce joints pain along with other treatments.

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