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Frequency of Shoulder Pain in Type 2 Diabetes Mellitus Patients

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Author`s Contribution

[2]Conception and design, [3-5]Collection and assembly of data, [3-5]Analysis and interpretation of the data, Statistical expertise, [3]drafting of article, [4]Critical revision of the article for important intellectual content, [1-5]Final approval and guarantor of the article

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A B S T R A C T

Background: Shoulder pain is the most common health related problem. Diabetic patients are also exposed and appeared to have prevalent shoulder pain due to diabetics and physical stress. Many other causes such as trauma, injury, bursitis, tendinitis is included. In this study, we analyzed the frequency of shoulder pain in diabetic patients.

Objective: To find out the frequency of shoulder pain in type 2 diabetes mellitus patients in Multan.

Methodology: It was a cross sectional study. Data was collected from different areas of Multan. The sample size was 120 patients which were selected through convenient sampling. Shoulder Pain and Disability Index (SPADI) was used to find out the frequency. Sample selection was computed through Cochran's formula. The data was analyzed by SPSS 21.0 Version.

Results: Total sample size was 120 out of which there were 52 participants who had shoulder pain and 68 participants did not report shoulder pain. 57% diabetics with shoulder pain who reported no difficulty during clothing. 32% reported that they had mild level of difficulty during clothing and 11% reported moderate level difficulty during clothing due to shoulder pain However, there were no one who reported severe level of difficulty during clothing due to shoulder pain. 31.67% participants who reported mild level of difficulty during reaching. 10% reported moderate level of difficulty and 2% reported severe level of difficulty during reaching activities whereas 57% reported having no difficulty in reaching. The mean of total SPADI score was 84.92.

Conclusion: The study investigated shoulder pain in Type 2 diabetes patients, assessing external rotation and glycated HbA1c levels. It emphasizes the importance of addressing musculoskeletal issues in diabetes management and promoting better understanding and treatment of shoulder pain in these patients.

Keywords: Frequency, Shoulder pain, Type 2 diabetes mellitus

Introduction

Shoulder pain is most common complaint in the world. Shoulder pain is becoming increasingly common throughout the world. It has considerable impact on individuals, and their families, communities, health care system and business also. It is difficult to know the exact cause of the shoulder pain. Shoulder pain is a result of number of different factors. If shoulder pain prolonged more than two months it considers as chronic shoulder pain.[1] Shoulder pain causes personal suffering disability and impaired quality of work and life, causes torn rotator cuff, swollen bursae sacs or tendons, bone spurs pinched nerve in neck and shoulder, old age.

The causes of shoulder pain include muscle strain, stress, tendinitis, bursitis, carrying heavy bags on shoulder, poor posture, sleeping at the effected side. Shoulder pain

includes impingement polymyalgia rheumatica, arthritis, biceps tendinitis, and adhesive capsulitis [2]

Some other factors of the shoulder pain are age, overuse through participation in activities and also any disease such as diabetics, arthritis also results in shoulder pain through genetics, hormonal influence, life style factors such as smoking, alcohol consumption, depression, anxiety. [3]

In primary care, shoulder pain ranks as the third most common musculoskeletal complaint. Each year, approximately 1% of adults with new shoulder pain seek consultation with their general practitioner (GP). Self-reported care-seeking for shoulder pain ranges from 16% to 26%. About 50% - 85% of those affected with shoulder pain doesn't undergo complete study. The symptoms are harmless and pain usually goes away. [4] The pain become chronic in 3 out of 10 people and had recurring shoulder pain. The risk of shoulder pain related issues becomes chronic with increasing age. [5]

Shoulder pain is a frequently reported musculoskeletal issue, and research has indicated a significantly elevated prevalence of shoulder disorders in individuals with diabetes, standing at 27.5%. In contrast, the rate among the general medical population is notably lower at 5%. This study aimed to quantify the association between Diabetes Mellitus and the occurrence of shoulder pain. Additionally, it sought to investigate potential relationships with other risk factors. The study involved interviews and examinations of patients at diabetic clinics. The study assessed external rotation in both shoulders and measured glycated HbA1c in all diabetic patients. Shoulder discomfort was reported by 25.7% of diabetic patients, whereas only 5.0% of general medical patients mentioned similar symptoms.[6] 4.3% of patients with diabetes and 0.5% of all medical patients met criteria for shoulder pain. This indicates a higher prevalence of painful or stiff shoulders among diabetic patients compared to those in the general medical group. Although the overall prevalence of shoulder pain is lower than previously indicated, it still persists at a higher rate among individuals with diabetes. [4]

Methodology

It was a cross sectional study. Data was collected from type 2 diabetic patients. The patients from different hospitals of Multan including Nishtar Hospital, Khurshid Rafiq Hospital, Family Health Care and Maternity Home, Ch. Pervaiz Elahi Institute of Cardiology, Bakhtawar Amin Hospital, Civil Hospital, DHQ, Hospital, Mukhtar A Sheikh Memorial Welfare Hospital, Aleem Surgical Hospital and Siyal Hospital were included. Ethical Approval was also taken with ref no (**PT/2021/REC/IRB/023**). The sample size was 120 patients which were selected through convenient sampling. Sample selection was done by following inclusion and exclusion criteria. Male and female type 2 diabetic population of age 35-50 were included, the patients with shoulder pain in the 5th cervical (C5) dermatome distribution, restriction of active and passive range of motion especially in external rotation and GH abduction of greater than 25% as compared to other shoulder, patients with rotator cuff tear history, having significant history of trauma to shoulder or any kind of inflammatory joint disease and patients who had CVA accident affecting the shoulder were also included. The population who were not diabetic was excluded. The data underwent analysis using SPSS Version 21.0. The duration of this study was six months from August 2019 to January 2020. The data in the study were collected using the (SPADI) as the assessment tool.

Results

There were 65% males (78) and there were 35% females (42) in the current study. More males were the part of the sample size. The frequency of shoulder pain was calculated as 43% males were more prone to shoulder pain as compared to female.

There were 43% diabetic patients who reported shoulder pain and 57% reported that they did not have shoulder pain. Total sample size was 120 out of which there were 52 participants who had shoulder pain and 68 participants did not report shoulder pain.

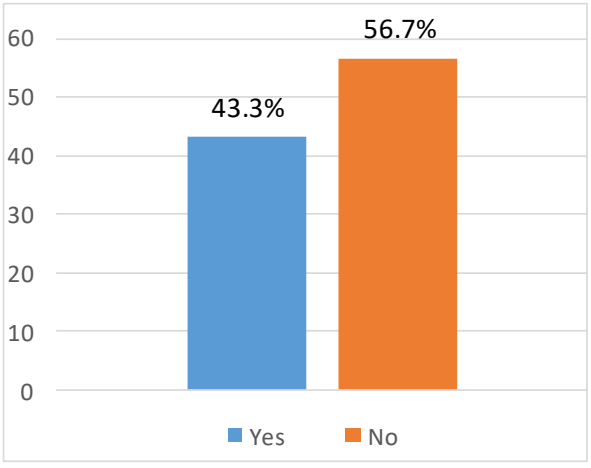

Figure 1. Graphical representation of shoulder pain among diabetic patients

Discussion

The goal of the study was to find out the comparison between the results of foam roller massage group A and cross frictional massage group B on iliotibial band syndrome In the

current study, it was observed that 43% of the sampled patients experienced shoulder pain. In contrast, a study conducted by Laslett L et.al found that among diabetic patients, only one-third reported complaints specifically related to shoulder pain or related symptoms. [7] On the contrary, Green S et. al found a prevalence of 14.7% for shoulder pain among a group of 102 diabetic patients.[8] Similarly, Mathew AJ et. al reported a comparable finding with 16.4% of their study participants experiencing shoulder pain. [9] Another study discovered that adhesive capsulitis of the shoulder had a prevalence of 10% among cases of type 1 diabetes and 22% among cases of type 2 diabetes within a group of 291 patients. [10]

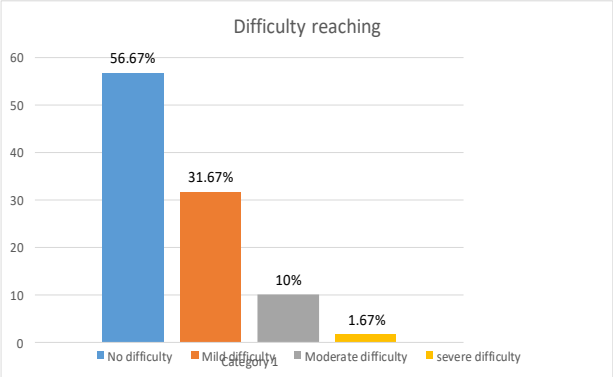

Figure 2. Graphical representation of difficulty in reaching due to shoulder pain.

In a research conducted by J Lietz, N Ulusoy, and A Nienhaus in Turkey, it was discovered that the prevalent age range for individuals experiencing frozen shoulder was typically between 40 and 60 years old. Frozen shoulder, medically known as adhesive capsulitis, is characterized by pain and stiffness in the shoulder joint, often leading to restricted mobility. This study's findings align with the common understanding that frozen shoulder predominantly affects individuals in their middle years, usually between the ages of 40 and 60.[11] Certain authors have posited that the increased occurrence of frozen shoulder in older individuals may be linked to it being an inflammatory reaction associated with age-induced alterations in the shoulder joint and/or its tendons.

A 2013 study by Janakiraman B et. al found that, 79% had diabetes for around 11-15 years, 10% had for more than 15 years and 11% had diabetes for 6-15 years. It was 10 years, and 1% of the population had diabetes that only lasted 2-5 years. [12] Conversely, a longer duration of diabetes was found to be associated with a greater likelihood of developing frozen shoulder. Furthermore, there is some indication of a comparable link between the length of time an individual has had diabetes and the likelihood of developing frozen shoulder in patients with type 1 diabetes when compared to those with type 2 diabetes. [13]

Similar studies by Uddin et al. in 2014, several key findings were published. The average pain score for the SPADI was reported to be 56.7%, while the disability score for the SPADI was 51%. Interestingly, diabetic patients were found to have higher scores in both pain and disability compared to non-diabetics. Nonetheless, there were no statistically significant variations in pain and disability observed between individuals with frozen shoulder who had diabetes and those who did not.

In this study, the researchers also found that 59.3% of the participants were taking medication, 14.8% were receiving physical therapy, 9.3% were receiving both medication and physical therapy, and 16.7% were not receiving any treatment at of their pain and disability. Studies have shown that exercise may be the main treatment option for patients with diabetes who are experiencing musculoskeletal problems. Exercise not only helps manage the pain and associated problems associated with manifestations of arthritis but can also prevent these musculoskeletal problems Furthermore, it focuses on how to they improve posture, stretch and strengthen short, weak muscles, thereby preventing disability and disability ultimately physical therapy The aim is to increase the daily functioning and independence of people with diabetes, and by improve their overall quality of life.[14] Because there hasn't been enough accessible education and continuous awareness initiatives, it's a bit challenging to gauge how informed people are about the positive effects of exercise and physical therapy. Many folks are still in the dark about the healing potential that physical therapy can offer. Although the researchers did their best, this study, like any other, had some limitations that might have affected its precision. The sample size was on the smaller side, making it tricky to apply the findings broadly. This study was conducted over a short period of time and therefore may not reflect all factors related to musculoskeletal problems in patients with diabetes. With sufficient time, knowledge on this topic could be expanded.

Conclusion

This study examined the frequency of shoulder pain among individuals diagnosed with Type 2 diabetes mellitus. The findings provide valuable insights into the prevalence and impact of shoulder pain within this diabetic population. Through the assessment of external rotation and glycated HbA1c levels, the study contributes to our understanding of musculoskeletal complications associated with diabetes. The results underscore the need for continued research and awareness regarding the management and treatment of shoulder pain in Type 2 diabetes mellitus patients. Further studies could shed light on potential

interventions to alleviate this discomfort and enhance the quality of life for individuals living with diabetes.

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