

Prevalence Of Knowledge About Sleeping Posture in Diabetic Patient Who Have High Chances of Frozen Shoulder

Seby Anna Kurian Varkey¹, Dr. Shraddha Mohite^{*2}

¹(Final year) Krishna College of Physiotherapy, Krishna Viswa Vidyapeeth, Karad, Maharashtra, India.

Email ID: annaseby21@gmail.com

^{2*} Associate Professor Department of Musculoskeletal Physiotherapy, Krishna Viswa Vidyapeeth, Karad, Maharashtra, India.

Email ID: shraddha95mohite@gmail.com

Corresponding Author:

Dr. Shraddha Mohite

^{2*} Associate Professor Department of Musculoskeletal Physiotherapy, Krishna Viswa Vidyapeeth, Karad, Maharashtra, India.

Email ID: shraddha95mohite@gmail.com

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ABSTRACT

Background:

Frozen shoulder, a condition characterized by stiffness and pain in the shoulder joint, is a common complication in diabetic patients due to reduced tissue elasticity and chronic inflammation. Poor sleeping posture can exacerbate shoulder discomfort and mobility issues, yet there is limited awareness about its role among diabetic patients at high risk of developing frozen shoulder.

Objective:

This study aims to evaluate the prevalence of knowledge about proper sleeping posture among diabetic patients who have a high risk of developing frozen shoulder, with the goal of identifying gaps in awareness and providing recommendations for education and prevention.

Methods:

A cross-sectional study was conducted among diabetic patients at high risk of frozen shoulder in a clinical setting. Data were collected using a structured questionnaire that assessed participants' awareness of the impact of sleeping posture on shoulder health, their current sleeping practices, and any associated shoulder symptoms.

Results:

Preliminary findings indicate a significant lack of awareness about the relationship between sleeping posture and shoulder health among the participants. Many reported sleeping in positions that could potentially aggravate shoulder stiffness, such as lying on the affected side or using inadequate support. Additionally, a positive correlation was observed between poor sleeping posture and the severity of frozen shoulder symptoms.

Conclusion:

The study highlights a critical gap in knowledge about proper sleeping posture among diabetic patients at high risk of frozen shoulder. Awareness campaigns and targeted educational interventions focusing on optimal sleeping practices could play a vital role in preventing or alleviating frozen shoulder symptoms in this vulnerable population.

Keywords: Diabetes, frozen shoulder, sleeping posture, patient education, prevention, awareness.

1. INTRODUCTION

Codman coined the phrase "frozen shoulder" for the first time in 1934. He talked about a deceptively subtle shoulder ailment that was accompanied by discomfort and trouble sleeping on the afflicted side. The disease's characteristic decline in forward elevation and external rotation was also noted by Codman. The same ailment had already been called "peri-arthritis" by Duplay in 1872, long before Codman. Naviesar first used the term "adhesive capsulitis" in 1945. This more contemporary

term, though still in use, is regrettable since, while synovitis and capsule contracture are linked to frozen shoulder, capsular adhesions are not connected with frozen shoulder.[1]

Diabetes is characterized by weight loss and polyuria, and it was initially recorded by the Egyptians. However, the term diabetes mellitus (DM) was first used by the Greek physician Aetaeus. Diabetes means "to pass through" in Greek, while mellitus is the Latin word for honey, which denotes sweetness. With almost one death every ten seconds, diabetes is a leading cause of long-term illness and early mortality. It also takes more lives each year than HIV/AIDS combined.[2]

The long-term metabolic illness Diabetes mellitus is an increasingly prevalent worldwide issue that has significant social, health, and economic ramifications. According to estimates, 285 million individuals worldwide (or roughly 6.4% of the adult population) suffered from this illness in 2010. Without better treatment or prevention, this figure is predicted to rise to 430 million. Diabetes impacts are nephropathy, somatic and autonomic neuropathy, cardiovascular disorders, periodontal disease, retinopathy, immune system damage, and diabetic foot.[3]

One common musculoskeletal condition is shoulder pain. The frequency of symptoms connected to sleep is a significant factor that sets shoulder discomfort apart from other types of musculoskeletal pain. Many clinical research investigations have demonstrated that the main characteristics of shoulder discomfort include nocturnal pain, sleeplessness, and difficulty sleeping on the afflicted side. Furthermore, patients occasionally claim that they wake up in the middle of the night or early in the morning with shoulder pain for the first time, without any warning signs or particular triggers.[4]

Rarely does frozen shoulder manifest itself before the age of 40. It often does so between the ages of 50 and 60. Of the two women (58%) compared to men (42%), more prone to get frozen shoulder. 6–17% of patients also have problems with their contralateral shoulder. Though the precise cause is still unknown.[5]

Various shoulder disorders have been linked to sleeping posture as a potential cause.[6]

The prevalence of self-reported shoulder pain in the UK has been estimated at 16%. This has been linked with significant sleep disturbance. Common sleeping positions. There are eight different ways to perform lateral decubitus: (1) right (both hands under cheek, arms parallel); (2) right (bottom forearm under head, top arm relaxed with hand in front of face); (3) supine (arms parallel to body); (4) supine (hands behind head); (5) left (both hands under cheek, arms parallel); (6) left (bottom forearm under head, top arm relaxed with hand in front of face); (7) prone (hands in front of forehead); (8) prone (arms parallel to body).[7]

Diabetes can lead to a decrease in blood flow to the muscles and connective tissues, which can impair muscle function and coordination. This can result in muscle weakness and stiff joints.[8]

Proper sleeping posture has the potential to exacerbate discomfort and pain associated with the condition.[9]

Many people do not sleep with their frozen shoulder in the proper posture as advised.[10]

Given the significant burden of diabetes and its association with frozen shoulder, this study aims to assess the prevalence of knowledge about proper sleeping posture among diabetic patients. By raising awareness, we seek to highlight the importance of optimal sleeping positions in mitigating discomfort and reducing the risk of further complications.[11]

2. METHOD

This study uses an observational design to determine how many diabetes patients who are at high risk of experiencing frozen shoulder are aware of the importance of good sleeping posture.

At a medical facility that specializes in managing diabetes, the study was carried out.

The target demographic consists of diabetic individuals between the ages of 40 and 60 because frozen shoulder is more common in this age range.

Participants in the study comprised both male and female patients.

A purposive sample technique was used to choose 81 individuals in all.

Inclusion Criteria:

1. Patients diagnosed with diabetes mellitus.
2. Patients at high risk of frozen shoulder (e.g., complaints of shoulder pain, reduced shoulder mobility, or nocturnal shoulder discomfort).
3. Age between 40 and 60 years.
4. Willingness to participate and provide informed consent.

Exclusion Criteria:

1. Patients with previous shoulder injuries or surgeries.

2. Non-diabetic individuals.
3. Patients with other systemic conditions that may influence shoulder mobility (e.g., rheumatoid arthritis, stroke).

Data Analyse:

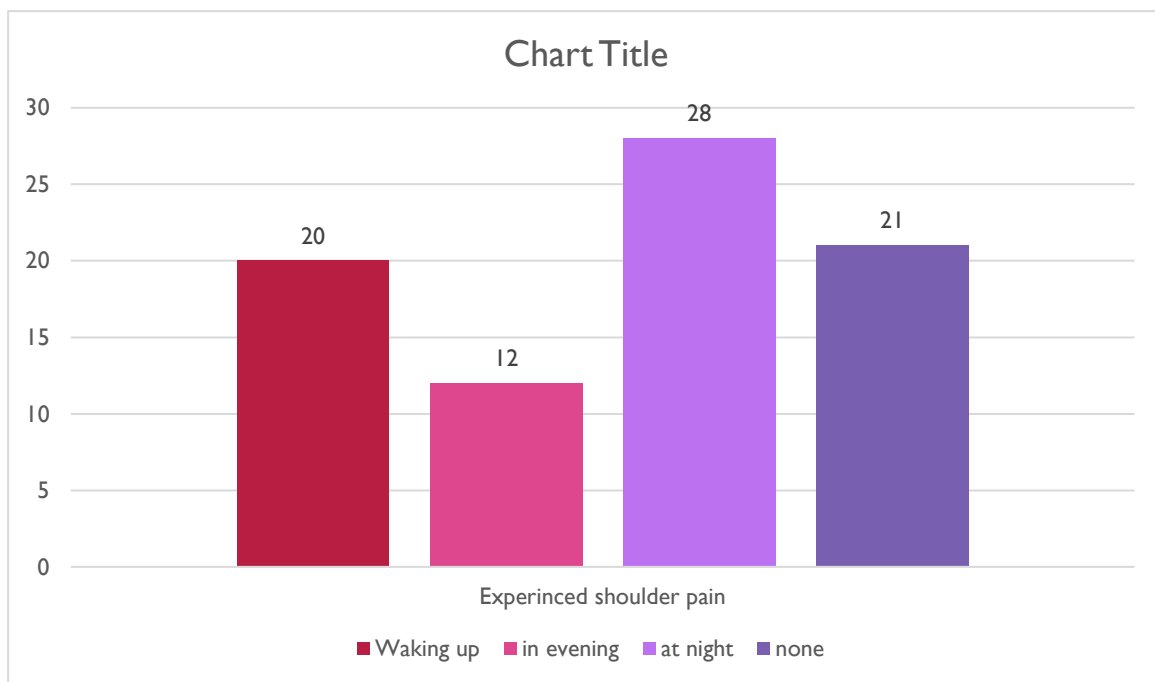
- 1) This bar chart illustrates the distribution of experienced shoulder pain among participants at different times of the day. The four categories represented are:

Waking up (Blue) – 20 participants reported experiencing shoulder pain upon waking up.

In the evening (Orange) – 12 participants experienced shoulder pain in the evening, making it the least reported time for pain.

At night (Gray) – 28 participants reported experiencing shoulder pain at night, making it the most common time for pain occurrence.

None (Yellow) – 21 participants reported no shoulder pain at any time of the day.



3. RESULT

The highest number of participants (28) experienced shoulder pain at night, which aligns with findings that frozen shoulder and musculoskeletal issues often worsen during sleep due to prolonged immobility or improper sleeping posture.

20 participants reported experiencing pain upon waking up, possibly indicating that poor sleeping posture contributes to discomfort.

The least affected time was the evening, with only 12 participants reporting pain, suggesting that daytime activities may not be as significant in triggering symptoms as nighttime posture.

Notably, 21 participants reported no shoulder pain, indicating that not all diabetic patients in the study experience this complication.

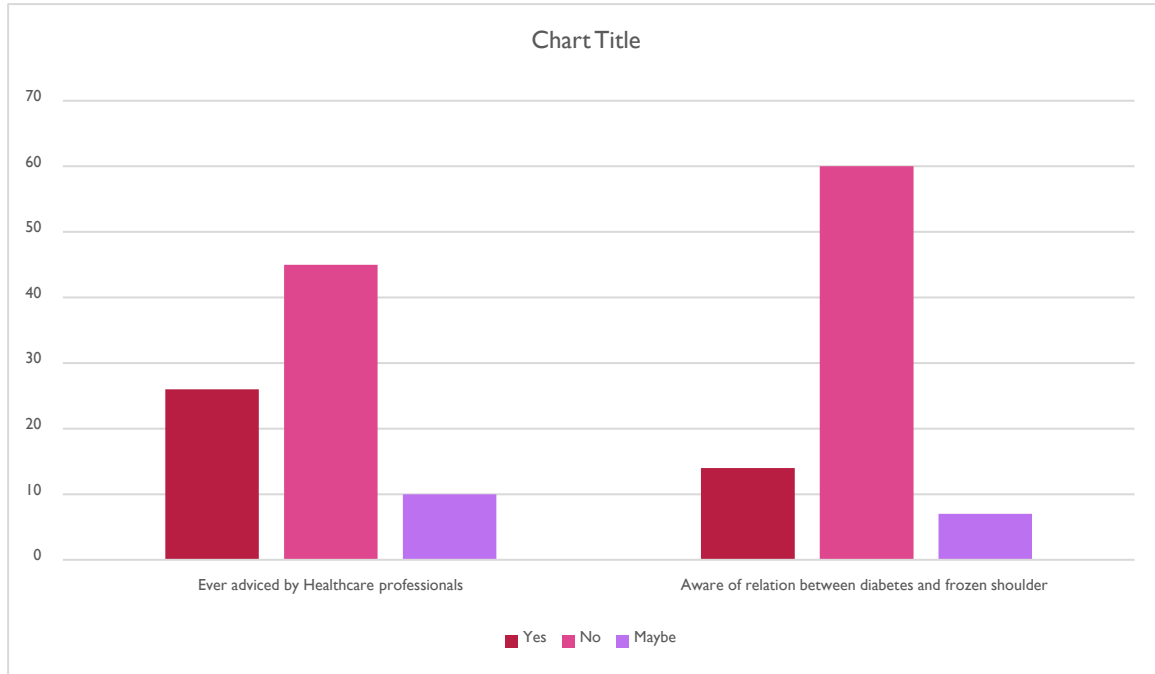
- 2) This bar chart presents data on two aspects related to diabetic patients and their awareness of frozen shoulder:

1. Advice from Healthcare Professionals:

- **Yes (Blue):** Around 25 participants reported receiving advice from healthcare professionals regarding frozen shoulder and its management.
- **No (Orange):** More than 40 participants indicated they had never received advice from healthcare professionals on this topic.
- **Maybe (Gray):** A small number of participants (approximately 10) were uncertain whether they had received such advice.

2. Awareness of the Relationship Between Diabetes and Frozen Shoulder:

- **Yes (Blue):** Fewer than 15 participants were aware of the link between diabetes and frozen shoulder.
- **No (Orange):** The majority, around 60 participants, were unaware of this connection.
- **Maybe (Gray):** A small number (approximately 5) were unsure about the relationship.

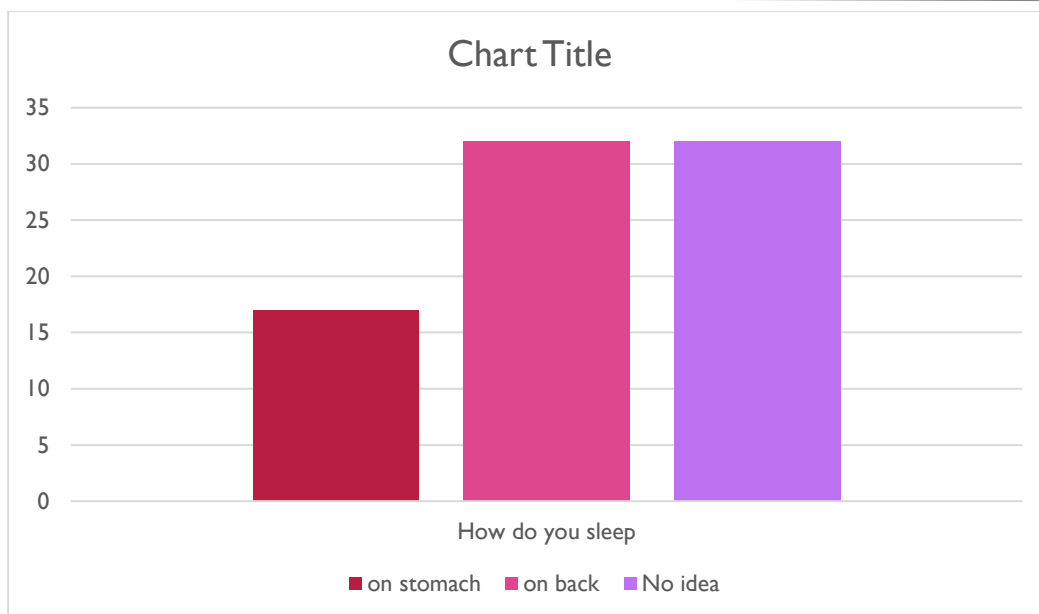


4. RESULT

- A significant proportion of diabetic patients have never been advised by healthcare professionals about frozen shoulder, suggesting a gap in patient education regarding musculoskeletal complications of diabetes.
- The majority of participants are unaware of the relationship between diabetes and frozen shoulder, indicating a lack of knowledge about this complication.
- The lack of awareness may contribute to poor prevention and management strategies, potentially leading to increased cases of shoulder pain and restricted mobility among diabetic individuals.

3) This bar chart illustrates participants' sleeping positions and their awareness of how they sleep. The categories are:

1. **On Stomach (Blue):** Around 15 participants reported sleeping on their stomach.
2. **On Back (Orange):** Approximately 30 participants indicated sleeping on their back, making it the most common sleeping position reported.
3. **No Idea (Gray):** Nearly 30 participants were unsure about their sleeping position.

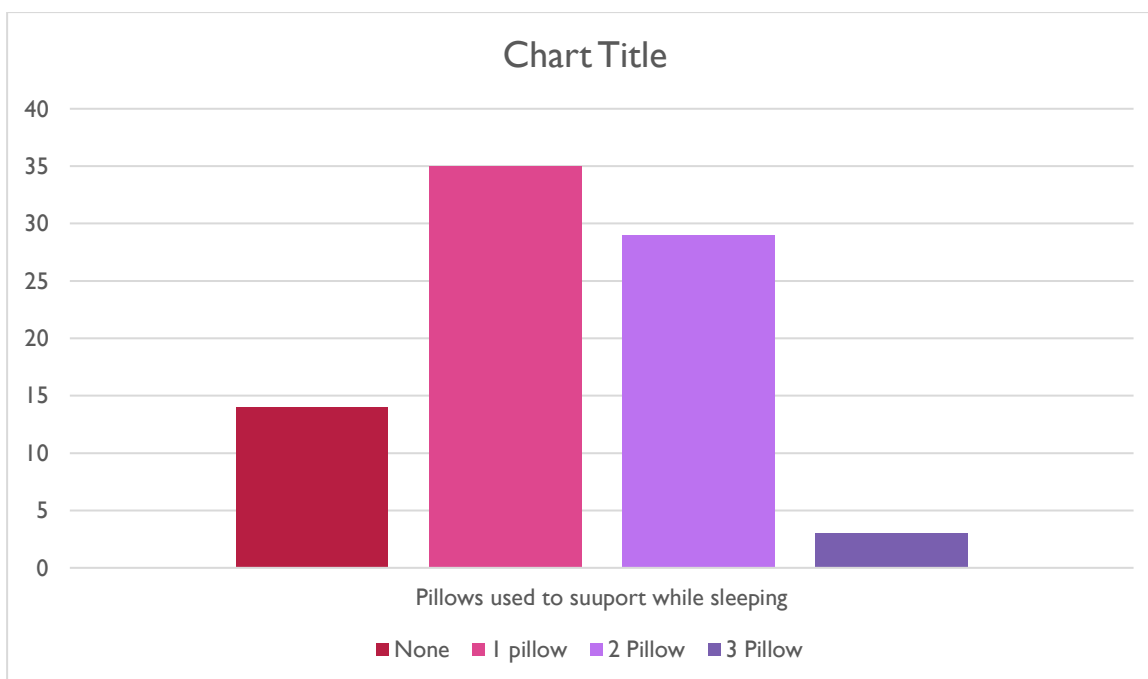


5. RESULT

- A significant proportion of participants either sleep on their back or are unaware of their sleeping posture. This lack of awareness suggests that many individuals may not actively consider or monitor their sleeping habits, which can be crucial for diabetic patients prone to musculoskeletal issues such as frozen shoulder.
- The smaller group of stomach sleepers (15 participants) could indicate that this position is less commonly preferred, potentially due to discomfort or other health considerations.

4) This bar chart represents the number of pillows participants use for support while sleeping. The categories are:

1. **None (Blue):** Around 15 participants reported sleeping without a pillow.
2. **1 Pillow (Orange):** Approximately 35 participants use one pillow, making it the most common choice.
3. **2 Pillows (Gray):** Around 30 participants sleep with two pillows.
4. **3 Pillows (Yellow):** Only a small number of participants (around 3-5) reported using three pillows.



6. RESULT

- The majority of participants (using either 1 or 2 pillows) seem to prefer some level of head or body support while sleeping.
- A notable proportion (around 15 participants) do not use pillows at all, which may indicate a preference for a flatter sleeping surface or a lack of awareness about the potential benefits of proper support.
- Very few participants (around 3-5) use three pillows, suggesting that excessive elevation is uncommon.

7. DISCUSSION

The findings of this study highlight a significant lack of awareness regarding the impact of proper sleeping posture on shoulder health among diabetic patients at high risk of developing frozen shoulder. Despite the established association between diabetes and musculoskeletal complications, particularly frozen shoulder, this study reveals that many individuals remain unaware of the role of sleeping posture in mitigating symptoms and preventing further complications.

The prevalence of frozen shoulder in diabetic patients is well-documented, with diabetes-associated changes such as reduced blood flow, chronic inflammation, and glycation of connective tissues contributing to the condition's development. Proper sleeping posture can play a critical role in alleviating nocturnal pain, reducing strain on the shoulder joint, and improving overall sleep quality. However, the results suggest that this critical aspect of disease management is often overlooked in clinical education and patient awareness programs.

A notable observation from this study was the high proportion of patients reporting nocturnal pain and difficulty sleeping on the affected side, which aligns with previous research indicating that nocturnal shoulder pain is a hallmark symptom of frozen shoulder. Additionally, patients who were unaware of proper sleeping posture often reported adopting postures that could exacerbate shoulder stiffness, such as lying on the affected side or using inadequate support.

The lack of knowledge about sleeping posture may stem from insufficient patient education regarding musculoskeletal complications of diabetes. Current diabetes management programs often focus on glycemic control and macrovascular complications, while musculoskeletal health receives limited attention. Incorporating sleeping posture education into diabetes care plans could help address this gap and improve outcomes for patients at risk of frozen shoulder.

Furthermore, the gender differences observed in this study, with women being more affected than men, are consistent with the literature. Hormonal and biomechanical factors may contribute to this disparity, warranting further investigation to tailor interventions effectively.

8. CONCLUSION

This study underscores the significant lack of awareness about proper sleeping posture among diabetic patients at high risk of developing frozen shoulder. The findings reveal that many patients adopt sleeping positions that may exacerbate shoulder discomfort, contributing to increased pain and reduced mobility. Proper education on sleeping posture is essential to alleviate nocturnal pain, prevent the progression of frozen shoulder, and improve the overall quality of life in this population.

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