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ASSOCIATION OF LOW BACK PAIN WITH PIRIFORMIS SYNDROME IN LONG SITTING HOURS AND ITS IMPACT ON FUNCTIONAL ACTIVITIES AMONG OFFICE WORKERS

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Low back pain, Piriformis syndrome, MODI

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Abstract

Background: *A neuromuscular condition known as piriformis syndrome (PS) is characterized by pain and numbness in the buttocks as a result of the piriformis muscle compressing or irritating the sciatic nerve. The piriformis syndrome can have a significant impact on an individual's quality of life. Low back pain is defined as pain that is localized between the 12th rib and the lower part of the gluteal folds, with or without pain radiating to the legs. Low back pain is the primary cause of activity limitation and can result in socioeconomic losses to an individual*

Objective: *To determine the association of piriformis syndrome and low back pain with long sitting hours and its impact on functional activities among office workers*

Methodology: *This cross-sectional study was conducted in office workers of Layyah. Sample size was 46. Age group was 25 years and above. Both males and females were included. Participants were selected through non-probability convenience sampling technique made aware of study. Written consent form was taken. Fair test was performed. Data collection tool was modified Oswestry disability index (MODI). Moreover, all the participants included in this study had vehicles. All the office workers and bankers were selected based on inclusion and exclusion criteria*

RESULTS*: A total number of 46 workers participated, who had an average age of 34.21 ± 5.05 years. The majority were male (60.9%), reported sitting for more than 8 hours a day. Most participants had reported mild pain and little functional limitations, especially standing, walking, and sleeping activities. There was a significant positive correlation between sitting duration and pain whilst performing walking (r_s = 0.578, p = 0.001), this means that pain during walking had increased as sitting duration increases.*

Conclusion: *Prolonged sitting among office workers was associated with mild low back pain and slight functional difficulties, especially during standing,*

walking, and sleeping. Overall, longer sitting hour's negatively affected daily physical activities and musculoskeletal health.

CHAPTER 1
INTRODUCTION

Piriformis Syndrome is a neuromuscular disorder that causes pain, tingling, and numbness in the buttock area due to compression or irritation of the sciatic nerve by the piriformis muscle. This condition can greatly affect a person's quality of life, leading to physical discomfort as well as psychological and social challenges that may negatively influence overall health and well-being. Although often underdiagnosed, piriformis syndrome is considered a significant contributor to non-discogenic sciatica and chronic lower back pain. Overall health and well-being may deteriorate as a result of the condition's psychological, social, and physical effects.[1]

The piriformis muscle is located deep within the gluteal region and lies in close proximity to the sciatic nerve. It plays an essential role in stabilizing the femur and enabling external hip rotation. Because of this anatomical relationship, tightness or inflammation of the muscle can result in neurovascular compression. Factors such as prolonged sitting, repetitive movements, and poor posture may worsen the symptoms of piriformis syndrome by placing continuous strain on the muscle, leading to irritation of the sciatic nerve. Recent observational studies have also shown that individuals with sedentary occupations are at a higher risk of developing piriformis muscle tightness.[2]

Piriformis Syndrome is a neuromuscular disorder caused by compression or irritation of the sciatic nerve by the piriformis muscle. Individuals with sedentary lifestyles are more prone to developing piriformis muscle tightness, which may contribute to piriformis syndrome and eventually result in lower back pain. The condition has been reported in approximately 5% to 36% of patients suffering from lower back pain. In addition, the prevalence involving the sciatic nerve is around 17%, while involvement of the common peroneal nerve is reported to be about 81%. Piriformis syndrome may arise from either primary or secondary causes. Primary causes are mainly associated with anatomical variations, whereas secondary causes include factors such as trauma, muscle overuse, or local ischemia. The condition is observed more frequently in females, with a female-to-male ratio of approximately 3:1.[3]

Piriformis Syndrome risk factors identified in high-quality studies (n = 10) include gender, increased body mass index (BMI), and occupational strain on the piriformis muscle, such as prolonged sitting, long hours of driving, and hazardous manual handling tasks. Moderate-quality studies (n = 14) further highlighted age and a previous history of lower back pain (LBP) as important contributing factors. In contrast, poor-quality studies (n = 4) suggested additional associations with piriformis muscle abnormalities, psychological stress, and unhealthy lifestyle habits. Among these factors, strenuous physical activity and gender were found to be particularly significant predictors of piriformis syndrome. Several of the identified risk factors, including elevated BMI, work-related injuries, excessive use of the piriformis muscle, and a prior history of lower back pain, are modifiable and may therefore be important targets for the early prevention and management of LBP.[4]

The use of computers has increased rapidly across almost all industries, especially among IT professionals who spend long hours working in front of screens. As a result, musculoskeletal disorders such as neck pain and lower back pain have become increasingly common. Prolonged sitting can contribute to tightness of the piriformis muscle, weakness of surrounding hip muscles, and eventually the development of Piriformis Syndrome and lower back pain. Individuals who spend extended periods sitting and experience lower back pain are also commonly found to have weakness in the gluteus medius muscle.

Lower back pain is a widespread health problem that affects nearly 90% of people at some point in their lives, with almost half experiencing recurrent episodes. It is defined as pain occurring between the lower rib margin and the gluteal fold, with or without radiation into the lower limbs. One of the

major contributing factors to piriformis syndrome is prolonged sitting, which can lead to piriformis muscle tightness and subsequent lower back pain. The condition is reported more frequently in women, with a female-to-male ratio of approximately 3:1, possibly due to anatomical differences such as a wider pelvis.

The piriformis muscle plays an important role in external rotation of the hip and also assists in hip flexion and adduction. In addition, it helps maintain posture during sitting and standing and contributes significantly to dynamic stabilization of the hip during daily activities. In piriformis syndrome, hip joint mechanics may become altered, leading to noticeable changes in hip flexion and extension during walking. Abnormal biomechanics involving the pelvis, lower back, and lower limbs may further contribute to shortening and tightness of the piriformis muscle.

Anatomically, the piriformis muscle originates from the anterior surface of the sacrum, specifically around the first to fourth sacral foramina, the margin of the greater sciatic foramen, and the sacrotuberous ligament, before inserting onto the superior border of the greater trochanter of the femur. The muscle is closely associated with the sciatic nerve, and in some cases, its tendon may fuse with the tendons of the gluteus medius and obturator internus muscles before insertion.

Several risk factors have been associated with piriformis syndrome and piriformis muscle tightness. These include female gender, obesity, piriformis muscle atrophy, occupations involving heavy lifting, repetitive bending activities, microtrauma, and direct injury to the gluteal region. Furthermore, patients with lower back pain often demonstrate reduced strength of the gluteus medius muscle and decreased hip abduction force. The gluteus medius is primarily responsible for hip abduction, while its anterior fibers assist in hip flexion and internal rotation, and its posterior fibers aid in hip extension and external rotation. The muscle also plays a key role in stabilizing the pelvis and preventing pelvic drop on the opposite side during the stance phase of walking.[5]

Low Back Pain is described as pain occurring between the lower margin of the 12th rib and the gluteal folds, with or without radiation of pain into the legs. Among individuals aged 18 to 56 years, the risk factors for low back pain vary widely and may include psychosocial, personal, and occupational factors.

Low back pain is considered one of the leading causes of physical activity limitation and may contribute to significant socioeconomic burdens for individuals, communities, and healthcare systems. Occupational factors, particularly prolonged sitting during work hours, play a major role in the development of non-specific low back pain. Employees who spend at least half of their work shift in a seated position are more likely to experience such symptoms. This association is commonly linked to increased stress on the intervertebral discs and muscle fatigue resulting from extended periods of sitting. [6]

In previous studies there is a high prevalence of piriformis tightness and its relationship with low back pain in individuals with prolonged sitting however there is little proof that it directly affects office workers' functional activities. Therefore, the aim of our study is to evaluate the association of piriformis syndrome with low back pain together with its effect on daily functional activities in office workers displayed to long sitting hours and will provide a more comprehensive understanding of occupational musculoskeletal dysfunction and supports the need for targeted ergonomic and physiotherapy interventions.

CHAPTER 2
LITERATURE REVIEW

Low Back Pain refers to pain experienced in the area between the lower border of the 12th rib and the gluteal folds, which may or may not extend into the lower limbs. In people aged 18 to 56 years, the development of low back pain is influenced by a variety of factors, including psychosocial, individual, and occupational determinants.

Low back pain is recognized as one of the major causes of reduced physical activity and disability, often leading to considerable socioeconomic consequences for individuals, society, and healthcare systems. Occupational factors,

especially prolonged sitting during working hours, are strongly associated with non-specific low back pain. Workers who remain seated for a significant portion of their workday are at a greater risk of developing such symptoms. This is thought to occur due to increased pressure on the intervertebral discs and muscle fatigue caused by maintaining a sitting posture for extended periods.[2]

Alaca and Acar et al. (2025) conducted a scoping review to examine the relationship between sitting habits, posture, sitting duration, and the risk of developing Low Back Pain among office workers. A comprehensive search of major electronic databases up to March 2024 identified 22 relevant studies involving a total of 7,814 participants. The methodological quality of the included studies was assessed using the Mixed Methods Appraisal Tool, with most studies being rated as high quality.

The review found that the most commonly investigated factors associated with low back pain were sitting duration, sitting posture, and sitting behavior. Evidence regarding sitting duration was inconsistent, as some studies reported no significant association, whereas others identified a positive relationship between prolonged sitting time and the prevalence of low back pain. In contrast, poor sitting posture showed a more consistent association with low back pain. The strongest and most reliable relationship was observed with sitting behaviors, particularly prolonged static sitting and limited movement breaks during work hours.

Overall, the findings suggest that low back pain among office workers is influenced by multiple factors. The review emphasized that ergonomic interventions should not only aim to reduce sitting time but also improve sitting posture and encourage regular movement. Such a comprehensive approach may be more effective in the prevention and management of low back pain in workplace settings.[7]

Ali, Khan et al. (2024) conducted an analytical cross-sectional study using a non-probability convenience sampling technique in chartered universities located in Peshawar. The study included office workers experiencing low back pain or leg pain, while individuals with systemic disorders, traumatic injuries, or congenital spinal deformities were excluded. A total of 148 participants were enrolled, the majority of whom were male (85.8%) and married (68.9%).

The findings revealed that 64.2% of the participants were diagnosed with Piriformis Syndrome, indicating a notably high prevalence of the condition among office workers. Participants affected by the syndrome also demonstrated significant limitations in daily activities, suggesting considerable functional impairment associated with the disorder. In contrast, 35.8% of the participants reported no symptoms.

Overall, the study concluded that piriformis syndrome is a common and clinically significant musculoskeletal condition among office employees. These findings highlight the importance of early identification, preventive strategies, and workplace interventions to reduce the impact of the condition in occupational settings.[1]

Khan, Shafiq et al. 2023 conducted a cross-sectional study investigated the predisposing factors and its association with low back pain in office workers. Data were collected using a convenience sampling technique from private office setups in Faisalabad, Pakistan. After screening about 400 people, 250 office workers between the ages of 26 and 50 who had at least two years of work experience were included. The Visual Analogue Scale was used to gauge pain intensity, and the seated piriformis test was used to measure piriformis tightness. To determine occupational and ergonomic risk factors, a structured questionnaire was employed. 76% of participants had piriformis tightness, according to the results. Piriformis tightness and low back pain were found to be significantly correlated ($p < 0.05$) by statistical analysis. Long workdays, bad sitting posture, inadequate foot support, and uncomfortable chairs were found to be major risk factors. The study highlights how workplace ergonomics contribute to the development of low back pain associated with piriformis.[8]

Yuwono and Wahyuni 2021 performed a study. This study, which was carried out at DKI Jakarta, looked at the connection between office workers' low back pain and how much time they spend

sitting. The results demonstrated that the prevalence of low back pain was significantly higher in employees who sat for half or more of their working hours than in those who did not. A significant correlation between the amount of time spent sitting and low back pain was found through statistical analysis (p = 0.044). Low back pain was 3.5 times more common in people who sat for extended periods of time. These findings lend credence to theories that prolonged sitting causes intervertebral disc stress and muscle fatigue. Long periods of sitting are a significant occupational risk factor for low back pain, according to the study.[6]

Previous research has demonstrated that prolonged sitting, poor posture, and sedentary occupational behavior are closely associated with Low Back Pain and piriformis muscle tightness among office workers and students. Several studies have reported a high prevalence of piriformis tightness and symptoms related to Piriformis Syndrome in individuals who spend extended periods in sitting positions. While some researchers mainly investigated factors such as sitting duration, posture, and workplace ergonomics, others identified a significant relationship between piriformis muscle tightness and low back pain.

Therefore, the present study aims to collectively examine these associated factors and evaluate their influence on functional activities among office workers.

2.1: OBJECTIVE

The objective of this study is to determine association of low back pain with piriformis syndrome in long sitting hours and its impact on functional activities among office workers.

2.2: Hypothesis:

2.2.1: Null hypothesis:

There is no significant association of low back pain with piriformis syndrome in long sitting hours and its impact on functional activities among office workers.

2.2.2: Alternate hypothesis:

There is significant association of low back pain with piriformis syndrome in long sitting hours and its impact on functional activities among office workers.

CHAPTER 3

MATERIAL & METHODS:

3.1. STUDY DESIGN

It was a Cross sectional study.

3.2. SETTING

This study was conducted in Layyah, Punjab,Pakistan..

3.3. DURATION OF THE STUDY

The study duration was 6 months after approval of synopsis

3.4. SAMPLE SIZE

Sample size was 46 using OpenEpi tool .[2]

Sample Size For Comparing Two Means

Input Data

Confidence Interval (2-sided)	95%
Power	80%
Ratio of sample size (Group 2/Group 1)	1

	Group 1	Group 2	Difference*
Mean	4.81	6.19	-1.38
Standard deviation	2.01	1.2	
Variance	4.0401	1.44	

Sample size of Group 1	23
Sample size of Group 2	23
Total sample size	46

*Difference between the means

Results from OpenEpi, Version 3, open source calculator--SSMean
Print from the browser with ctrl-P
or select text to copy and paste to other programs.

3.6. SAMPLING TECHNIQUE

It was Non-probability convenience sampling technique.

3.7. SAMPLE SELECTION

3.7.1. INCLUSION CRITERIA

- Age between 25 to 42 years. [9]
- Both gender. [9]
- Participants sitting on a hard surface for at least 1 year minimum of 6 hours per day. [6]
- Positive FAIR test. [7]

3.7.2. EXCLUSION CRITERIA

- Workers with a history of any previous spinal or legs injury.[9]
- Any known metabolic disease.[9]
- Participants with known psychological disorders.[1]
- Those worker who refuse to sign the consent form.[6]

3.8. DATA COLLECTION TOOL

- Modified Oswestry Disability Index (MODI)

3.8.1 MODI

One useful tool for assessing a patient's low back functional outcome is the Modified Oswestry Disability Index (MODI). As a patient reported outcome (PRO) tool, the Modified Oswestry disability index (MODI) is frequently used to evaluate patients who have undergone thoracolumbar spine surgery or who present with low back pain (LBP). [10]There are 10 sections each scored from 0 to 5 (0 = no difficulty, 5 = maximum difficulty).

Interpretations

0–20%	Minimal	Patient can cope with daily activities, little disability
21–40%	Moderate	Moderate limitation; some daily activities affected
41–60%	Severe	Severe disability; daily activities significantly affected
61–80%	Crippling	Very limited function; may need assistance
81–100%	Bed-bound	Patient is almost completely disabled

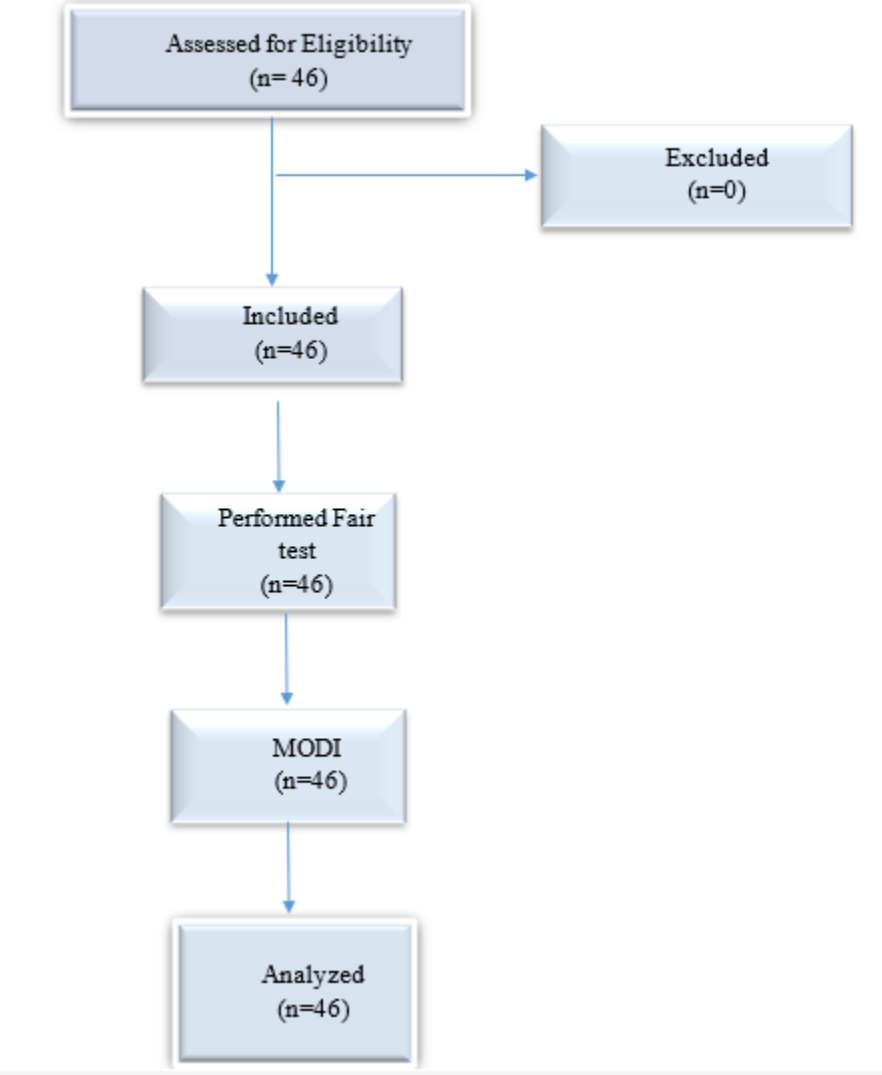
3.9. DATA COLLECTION PROCEDURE:

The subjects who met the inclusion criteria was included for this study. The nature of low back pain and disability index was properly explained to each and every subject. Written Consent was taken and after explaining low back pain and disability index form was distributed and asked to fill later the data was properly analyzed and interpreted.

3.9: Ethical Considerations

1. The rights of the research participants will be protected, and the ethical guidelines established by the GCUF Layyah ethical committee will be adhered to.
2. All participants will be required to sign written informed consent forms, which are attached.
3. All data collecting information will be kept private.
4. All study participants will remain anonymous.
5. The participants will be made aware that there will be no danger or drawbacks to the study's methodology.

3.10: Consort Flow Diagram



3.11: Data Analysis Procedure

Data was analyzed by using The Statistical Package for Social Science Software (SPSS) version 27.0 for window Microsoft, also Microsoft word and excel was used to generate graphs, tables etc. The quantitative data was presented in the form of mean and standard deviation. The categorical data was presented in the form of frequency and percentage.

CHAPTER 4
RESULTS
4.1 Sociodemographic

Demographics	Age	Gender	Sitting Hours
Mean	34.21	1.39	1.73
Std. Deviation	5.05	0.49	0.79

This table shows the demographic characteristics of 46 participants. The mean age was 34.21± 4.88 years, there gender mean was 1.39 ± 0.5.The mean daily sitting time was 1.73 ± 0.79 hours.

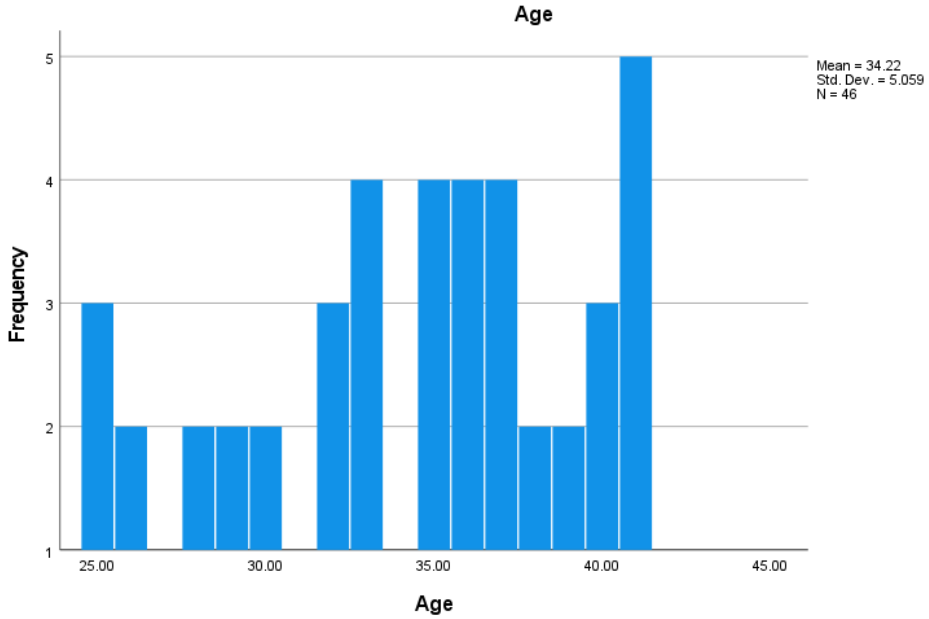


Fig 4.1 descriptive statistics of Age

4.2. Descriptive statistics of Gender

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Male	28	60.9	60.9	60.9
Female	18	39.1	39.1	100.0
Total	46	100.0	100.0	

Table 4.2 shows the gender distribution of the participants. Out of 46 office workers, 28(60.9%) were male and 18 (39.1%) were female, indicating a nearly equal representation of both genders

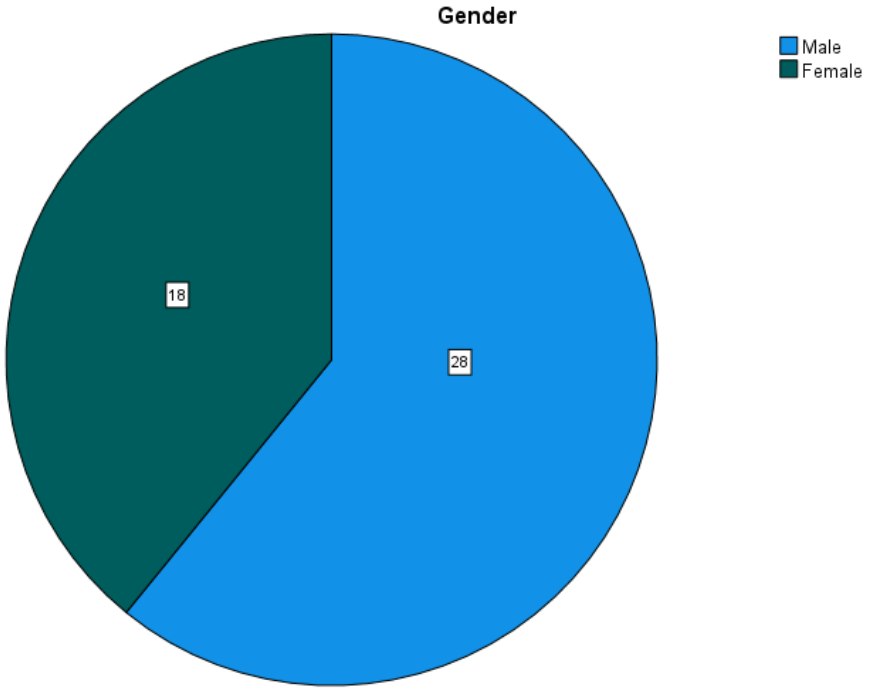


Fig 4.2 pie chart shows gender statistics

4.3. Descriptive statistics of sitting hours in a day

	Frequency	Percent	Valid Percent	Cumulative Percent
5-6 hours	21	45.7	45.7	45.7
7-8 hours	15	32.6	32.6	78.3
more than 8 hours	10	21.7	21.7	100.0
Total	46	100.0	100.0	

Table 4.3 shows the percentage distribution of sitting hours in a day. The majority of participants reported 21(45.5%) more than 8 hours sitting.

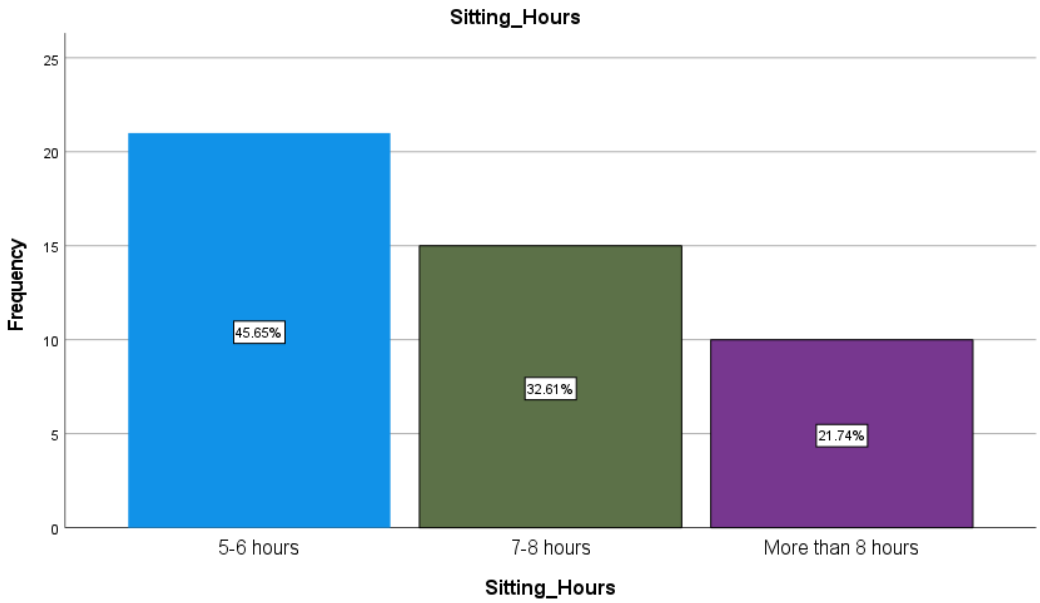


Fig 4.3 bar chart showing distribution of sitting hours

4.4 Descriptive statistics of MODI

	Mean	Std. Deviation
Pain intensity	1.13	.499
Personal care (washing, dressing etc.)	1.20	.542
Lifting	1.33	.920
Walking	1.30	.963
Sitting	1.22	.593
Standing	1.46	1.069
Sleeping	1.39	.954
Social life	1.17	.486
travelling	1.30	.756
work performance	1.04	.206

Table 4.5 shows the descriptive statistics of the MODI. Participants reported the greatest disability in standing activities (Mean = 1.46), followed by sleeping and lifting. Work performance had the lowest mean score (Mean = 1.04), suggesting minimal disability in work-related tasks.

4.5 Frequency and percentage distribution of MODI

Variables / Sections	Mild Difficulty / Mild Pain n (%)	Moderate Difficulty / Moderate Pain n (%)	Severe Difficulty / Severe Pain n (%)	Very Severe Difficulty / Very Severe Pain n (%)	Worst Condition / Unable to Perform n (%)
Pain intensity	42 (91.3%)	3 (6.5%)	–	1 (2.2%)	–
Personal care (washing, dressing etc.)	39 (84.8%)	6 (13.0%)	–	1 (2.2%)	–
Lifting	38 (82.6%)	5 (10.9%)	1 (2.2%)	1 (2.2%)	–
Walking	39 (84.8%)	5 (10.9%)	–	–	1 (2.2%)
Sitting	39 (84.8%)	5 (10.9%)	1 (2.2%)	1 (2.2%)	–
Standing	35 (76.1%)	7 (15.2%)	1 (2.2%)	1 (2.2%)	1 (2.2%)
Sleeping	36 (78.3%)	6 (13.0%)	2 (4.3%)	1 (2.2%)	–
Social life	40 (87.0%)	4 (8.7%)	2 (4.3%)	–	–
travelling	38 (82.6%)	4 (8.7%)	2 (4.3%)	2 (4.3%)	–
work performance	44 (95.7%)	2 (4.3%)	–	–	–

Table 4.6 shows the frequency and percentage distribution of MODI. Overall, the majority of participants reported mild difficulty or mild pain across all sections. The highest proportion of mild responses was observed in work performance (n = 44, 95.7%), followed by pain intensity (n = 42, 91.3%) and social life (n = 40, 87.0%). Severe to very severe difficulty or pain was reported by a small proportion of participants, with the highest frequency noted in standing and sleeping section.

4.6Normality of MODI

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pain intensity:	.516	46	.000	.289	46	.000
Personal care (washing, dressing etc)	.489	46	.000	.407	46	.000
Lifting	.465	46	.000	.413	46	.000
Walking*	.472	46	.000	.357	46	.000
Sitting	.491	46	.000	.425	46	.000
Standing	.426	46	.000	.495	46	.000
Sleeping	.442	46	.000	.479	46	.000
social life	.509	46	.000	.405	46	.000
travelling	.482	46	.000	.463	46	.000
work performance	.540	46	.000	.209	46	.000

This table shows the results of the data normality test. All variables had p-values < 0.05, indicating that the data was not normally distributed.

4.7: Correlation of pain after long sitting with walking

		Pain with long Sitting
Walking	Correlation Coefficient	0.578
	Sig. (2-tailed)	.001
	N	46

There was statistically significant correlation between Pain in walking after prolong sitting (r_s = 0.578, p = 0.001), indicating that Pain in walking has significant association with prolonged sitting.

4.8. Correlation of pain in standing with walking after long sitting

		Walking
Standing	Correlation Coefficient	0.278
	Sig. (2-tailed)	0.05
	N	46

This table shows relation of pain in standing with walking. A positive correlation was observed (p=0.05) and showed higher the level of pain in walking, higher the level of pain in standing.

CHAPTER 5

5.1. DISCUSSION

The current study was conducted to determine the relationship between Piriformis Syndrome and Low Back Pain with prolonged sitting and its impact on the functional activities of office workers. In a recent study in 2021, they found that sitting for long durations of time was highly correlated with low back pain and poorer physical function in office workers. The results of this study are the same, with participants who spent more hours sitting reporting that they had more pain with walking and standing tasks. Both studies highlighted that prolonged sitting causes muscular stiffness and postural stress, and causes functional discomfort. The current study, however, found that most participants had mild disability levels, as

opposed to the 2021 study that had a higher percentage of moderate disability. [6]

Likewise, a 2022 study of office workers who were sedentary for long periods of time revealed that the effects of sitting for extended periods were detrimental to their spine's posture and the musculoskeletal pain of these workers was particularly in the lower back and hip region. The results corroborate the results of the current study which revealed a higher disability score for standing and sleeping on the MODI scale. The previous study, on the other hand, found higher correlations between sitting time and high pain intensity, and the current study detected mostly low pain and functional disabilities. This difference might be because of the differences in sample size, occupational set-up, or in the amount of activity they perform each day. [5]

The results of a study published in 2023 indicated that office workers who spend more than 6-8 hours per day sitting were significantly less mobile and reported increased discomfort while walking during activities. The current study also showed a strong positive correlation between the duration of sitting and the presence of walking pain (r_s = 0.578, p = 0.001). Both studies indicate that diminished physical activity and sitting for extended periods of time are associated with musculoskeletal impairments. The current study did not, however, have a high percentage of people with severe disability. [8]

A study carried out in 2024 looked at how sedentary behaviour affects functional performance in desk-based workers and found that ergonomic awareness and frequent movement breaks led to a decrease in the intensity of pain. The results of the current study are similar to those found in the present study, in that those who reported a high amount of sitting time were more uncomfortable when standing and walking. The findings of the previous study and the recommendations of the present study strongly recommend the use of ergonomic interventions in the workplace, stretching exercises and physical activity programs. [1]

More recent literature (2025) also indicates that sitting for extended periods of time can lead to tightness of the piriformis muscle, low back pain and reduced quality of life in office workers. In the present study, extended sitting time was correlated with pain and some mild functional limitation in the daily activities, in line with the above studies. However, the disability scores observed in the present study were lower than the scores obtained in some recent international studies, which may be attributed to the differences in lifestyle, occupational demands, and working environment in terms of culture. [7]

A possible explanation of relatively low level of disability as seen in the present study is the relative youthfulness of the age group and active working population studied. While sitting for extended periods of time was something common in working in an office, many participants were still able to engage in their normal employment tasks and everyday activities with minimal, if any, discomfort. This tells us that early symptoms of this piriformis syndrome and low back pain may be controllable, but latex their impact can result in chronically worse musculoskeletal issues down the road. Hence early identification and strategies of prevention are crucial to minimise disability in the future and to promote occupational health.

In an interesting way, another outcome of this study was the observation that with prolonged sitting, physical comfort was not only affected but so were activities of daily living like standing, walking, sleeping, and traveling. Long periods of sitting can decrease muscle flexibility, create postural stress and put strain on the gluteals and lumbars. Overt time, these biomechanical changes may add to muscle tightness and discomfort with movement related activities. The results of the study encourage the need to adopt a proper ergonomic posture, frequent stretches and periodic breaks from sitting while working in an office setting to reduce musculoskeletal strain and enhance the quality of office worker life.

5.2. CONCLUSION

The finding of this current study was that long working hours when sitting was correlated with mild to moderate low back pain and functional limitations among the office workers. The most commonly reported of the daily functions, and the most affected function of those who participated

in both activities and work, was standing, followed by sleeping and lifting. Prolonged sitting was associated with pain during walking and standing, both of which in turn were related to the pain during standing in the present study, and the results showed a significant positive correlation between prolonged sitting and pain during walking and standing, which suggests that long sitting time may be related to increased risk of musculoskeletal pain and decreased functional performance. Longer sitting seems to have negative effects overall, on physical health and activity among those who work in an office.

5.3. LIMITATIONS

1. Small sample size used in the study.
2. Study was conducted in limited area.
3. Result may not generally applicable.

5.4. RECOMMENDATIONS

1. The awareness of low back pain due to piriformis syndrome should be raised.
2. Posture focused exercises should be done.
3. More emphasis should be placed on raising awareness of necessity of maintaining appropriate sitting posture during work and computer/laptop usage.

REFERENCES

1. Ali H, Khan S, Kundi MKJJoR, Research C. Prevalence of Piriformis Syndrome among Prolonged Sitting Office Workers and its Effects on Physical Activity and Quality of Life. 2024;2(2):30-3.
2. Nawaz MA, Mahmood H, Arshad MS, Javeria H, Younas Z, Hasan S, et al. ASSOCIATION OF PIRIFORMIS SYNDROME WITH LONG SITTING HOURS AND ITS IMPACT ON DAILY FUNCTIONAL ACTIVITIES AMONG UNIVERSITY STUDENTS. 2025.
3. Nazir S, Asmat G, Ashfaq U, Saeed TJPBJ. Frequency of Piriformis Syndrome among Female Physiotherapy Students of Gujranwala, Pakistan: Piriformis Syndrome among Female Physiotherapy Students. 2022:103-7.
4. Othman IK, Mohamad N, Sidek S, Bhaskar RN, Kuan CSJS, Engineering, Studies H. Risk factors associated with piriformis syndrome: A systematic review. 2020:215-33.
5. Dahiya T, Verma T, Fatima A, Verma R, Bhushan BJIjohs. Incidence of Piriformis Tightness and to determine correlation with gluteus medius weakness in Indian IT–Professionals: A cross sectional study. 2022;6(S6):4137-46.
6. Yuwono A, Wahyuni OD, editors. The relationship between sitting duration and low back pain on office workers in DKI Jakarta 2021. 1st Tarumanagara International Conference on Medicine and Health (TICMIH 2021); 2021: Atlantis Press.
7. Alaca N, Acar AÖ, Öztürk SJJoB, Rehabilitation M. Low back pain and sitting time, posture and behavior in office workers: A scoping review. 2025:10538127251320320.
8. Khan RS, Shafiq Z, Mehar R, Akhtar A, Sabir UB, Ammar M, et al. A Cross-Sectional Study Concerning Piriformis Tightness: Identifying Predisposing Factors and its Association with Low Back Pain in Office Workers. 2023;3(2):19-31.
9. Kaur R, Balakrishnan R. Prevalence of Lower Back Pain and Disability Due to Improper Sitting Posture Among Non-Medical Employees. 2024.
10. Kumar R, Alostaz M, Bansal A, Varley E, Nemani V, Leveque J-C, et al. Describing functional low back pain disability in the American population: a crowd-sourced evaluation of the Oswestry disability index. 2024;24(11):2165-71.