

PREVALENCE OF PIRIFORMIS TIGHTNESS DUE TO LONG HOURS SITTING AMONG BANKERS OF FAISALABAD CITY

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Date of Received: 28/09/2019

Date of Acceptance: 07/10/2019

ABSTRACT

Introduction: Subsequent population among adults and old age group--particularly of sedentary lifestyle--is vulnerable to Low Back Pain and piriformis tightness among which they might experience radiating or localized pain over the region of piriformis muscle. The setting may be because of prolonged sitting, poor body mechanics or unsupportive chair ergonomics but putting a fat wallet in back pocket aggravates the symptoms further described as wallet neuritis or fatty wallet syndrome. The culture of putting wallet in back pocket--oblivious of its harms--is galvanizing among our population and lesser population intends to pay heed over its prevention from the root. **Methods:** Convenient sampling technique of **Study design:** Cross Sectional Study 190 subjects among Bankers of Faisalabad. city has been inducted for further preview. Piriformis stretch test was performed as confirmatory evidence prior to rule out correlated sign and symptoms. **Results:** Frequency distribution of the correspondent set of individuals has been done that showed about 65.4% had piriformis stretch test ran positive and ratified the evidence of prevailing piriformis tightness among them.

Key words: Piriformis tightness, sedentary individuals, Low Back Pain, wallet neuritis

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Article Citation: Mughal S, Ahmad M, Malik B K. Prevalence of piriformis tightness due to long hours sitting among bankers of Faisalabad city. *IJAHS*, Jan-Mar 2020;01(55-59):01-05.

INTRODUCTION

Piriformis syndrome is a neuromuscular disorder caused by the irritation of sciatic nerve impinged at the site of piriformis. PS is often misdiagnosed or underdiagnosed as it gives symptoms similar to intervertebral disc herniation, radiculopathy or sacroiliac joint dysfunction or sacrolitis.¹ It is over diagnosed or misdiagnosed and people with low back pain confers more to PS symptoms but might be overlooked by the practitioner because of the patient's misinterpretation and overlapping symptoms with other lower leg diseases. However, people with 6-7% conferring to low back pain symptoms also shows positive PS signs.²

Prevalence of PS is more common among women than men inculcating a ratio of 3:1 with profound explanation of their wider quadriceps femoris muscle angle in OS Coxae. Men on the other side may contribute to aggravate symptoms with

putting wallet while sitting on the affected side that can cause buttock pain, external tenderness over the greater sciatic notch, aggravation of the pain through sitting and augmentation of the pain with maneuvers that increase piriformis muscle tension. Biomechanics of the muscle include of its movements as external rotator, weak abductor and weak flexor of the hip, providing postural stability during ambulation and standing.⁷ Piriformis muscle acts as an external rotator when angle of hip flexion is 60° or less and the function changes when angle of hip flexion is greater than 60°, so that it becomes an internal rotator of the hip.⁸ Study upon MSD issues among bankers in Kuwait showed that these diseases are more prevalent and affect women than men (84% compared to 74%). Furthermore, they suffer from most disability attacks. They may be attributed to different workloads or anatomical differences.³ Sedentary behavior has recently been defined as

“any working behavior characterized by an energy expenditure of ≤ 1.5 METs while in a sitting or reclining posture”.⁴ The definition acknowledges the posture but also the energy expenditure in sedentary sittings. Like in the amalgam of physical activities, physical in activities, such as; sitting at a desk, in a vehicle, watching television, have been coded with MET values ranging from 1.0-2.5, but standing activities, such as watering the lawn or garden, which are not classified as sedentary in the above definition due to the straight upright posture in which they are performed, are coded with a MET value of 1.5.⁵ Increased use of computer screens in people working in banks mostly writers, data entry operators and people from long sitting hours are prior to develop cramps in upper extremity, and MSDs in lower extremity.⁹ Prolonged sitting in workstations for more than several hours is best accredited in many with plenty of risk factors including posture, alignment of the body, working hours, ergonomics of the furniture. In contrast non-modifiable features are obesity, female gender and congenital anomalies. People using chairs for longer durations need to have cushions adjusted at their back so neck is stabilized.

Alongside, back of the chair mostly straight so spine alignment is adjusted and hip be placed at the back of the chair without any gap to minimize any play left. Base of the feet while sitting doesn't matter as this has nothing to do with adjustments. Although, changing posture more often is mandatory as this shifts the pressure from prime movers to secondary muscles and saves from fatigue. Phenomena for cramps and MSDs is simple; prime movers get fatigued shifting all the work to secondary muscle groups and then causing fatigue. Brain is adjusted to firing signals to secondary muscle groups giving pre movers some rest thus constituting to bad posture and disease.⁶

Aims and Objectives:

To determine the prevalence of Piriformis

tightness among bankers of Faisalabad city, Pakistan.

To determine whether putting wallet in back pocket aggravate the symptoms or not.

MATERIAL AND METHODS

This Cross-sectional study was selected to evaluate the Prevalence of Piriformis tightness among male bankers of Private and Public-sector banks of Faisalabad city. Data were collected from 190 male bankers through convenient sampling technique. Informed consent form was signed before data collection and modified questionnaire was used to collect data. Data was collected from bankers of public and private sector Banks, which include HBL bank, Allied bank, bank Alfalah, Bank al Habib, MCB, Bank of Punjab, Dubai Islamic Bank. Faisal bank, Meezan bank. Bankers included were the healthy males, 20-60 years of age or who have long sitting posture. Bankers associated with other morbidities or trauma causing buttock pain, have recent surgery, who did not have long sitting posture were excluded from the study. Piriformis tightness was checked through seated piriformis stretch test. SPSS version 21 was used to analyze the data and results were drawn.

RESULTS

Frequency Distribution tests shows the piriformis test performed over patients to check the validity of disease. 65.4% had their tests went positive while 34% negated the result. This means the test acquainted positive results in 65.4% of the participants. While other negate the test and might correspond to some other related diseases out of the scope of this study.

Piriformis test	Frequency	Percent
Positive	125	65.4
Negative	65	34.0
Total	190	99.5
System	1	.5
	191	100.0

Frequency distribution test shows 31.4% of the population not putting wallet in the back pocket; 36.6% said they do it a little; 19% said they put wallet often; and 10% said they put wallet continuously in their back pocket. Thus, putting wallet is an aggravating maneuver as it is placed just beneath the piriformis muscle and pressure builds that can stress sciatic nerve.

Frequency distribution shows that all the questionnaires were filled with full participation among which most people who were catered belongs to age group 30-40 years that is 39%. Rest assured were 20-30 years of age that is 31% and then declining with order 40-50 and 50-60.

DISCUSSION

This study supports the hypothesis of presence of Piriformis tightness among bankers due to long hours sitting. Population taken was through random sampling and attributed to be of 190. Among which 65% had their piriformis test ran positive while 36% negated the tests which ascertains as an indicator for the presence of ailment among bankers. Although this was correlated with putting wallet in the back pocket. 36% said they do put wallet in their back pockets with showing some positive symptoms with aggravation factors of the disease. These people who put wallet had pain from moderate to severe levels which indicate their pain has increases due to some external pressure asserted by wallet. Warner, Munawar et al, in May 2018 studied the prevalence of Piriformis syndrome among university of Lahore male students. They collected data from randomly selected male students from university of Lahore.

The cross-sectional study was conducted, and data was collected to check the prevalence of Piriformis syndrome. It was found that out of 113 students, 73(65%) had no pain and 34(30%) had localized pain while (5%) radiating pain was found. This confirmed the prevalence of radiating pain to be 5% resulting in pain and numbness in

buttocks and radiating down up to leg, caused by long sitting together with keeping wallet in back pocket. students did not take any medical intervention. In this study we find that weak muscles due to long sitting along with poor body posture are some causes that leads to PS.¹⁰ Akrouf, Crawford et al. in 2010 studied "Musculoskeletal disorders among Bank Office Workers in Kuwait".

The Data was collected from 750 employees from 36 branches of same Bank Company. There was a cross-sectional study to check the different Musculoskeletal disorders (MSDs) that occurs in Bank workers. A self-administered questionnaire was used to trigger MSDs and a result showed 80% suffered at least one episode of MSD while 42% suffered at least one disabling episode. The most affected body parts were the lower back (51%), neck (53.5%) shoulders (49.2%) upper back (38.4%). Study implicates 51% of the population who had problems to lower back and further radiating to thigh and legs.¹¹ Exactly what piriformis tightness prevalence has to developed among Bankers of Faisalabad city; nothing changed only the course and area of the pain that changes. Study has its setbacks and short comings, but it ended with a strong point on bankers with certain MSDs that has lopsided slide onto the lower extremity. Piriformis tightness with radiating is most prone to develop in long sitting and this thus exacerbates of what is necessary for lifestyle modifications and prompt medication measures.

Henneman, Somjen & Carpenter in 1965 studied "Functional significance of cell size in spinal motor neurons." Piriformis muscle is a postural muscle so it has the tendency to become overactive, hypertonic and weak. Nicholson S believes that gluteus muscle is the most neglected muscle; since we spend most of the time in sitting irrespective of walking and standing, gluteus muscle becomes weak and causes hyper tonicity and over activation of piriformis muscle thus leading to Piriformis syndrome. That's why



Putting wallet aggravate symptoms	Frequency	Percent
No	60	31.4
a little bit	70	36.6
moderately	37	19.4
extremely	20	10.5
Total	190	100

postural muscles have abundant red fibers, smaller neurons that are easier to activate. Neurons continuously fire impulses to retain normal posture and piriformis easily gets excited leading to muscle fatigue, strain, spasm, hypertonicity and weakness which serve as a leading cause to PS among sedentary people who barely walks and stand irrespective of sitting for long hours. The study indicates piriformis and gluteus as core muscles of the body.¹² We usually neglect gluteus and so with that when it gets fatigued, piriformis replaces the odd and functions on the debut. With its consistent functioning, piriformis does get fatigued and impinges sciatic nerve passing beneath it is causing PS.

Limitations of the Study:

Risk factors associated with piriformis tightness must be thoroughly evaluated. Majority of the data was collected from a staff that had more bench work, so they didn't have much knowledge of importance of physical activity. External trauma was not considered. Female population were excluded.

Suggestions:

Knowledge should be given to community about their health. People should visit doctor annually. People should notice if any of the symptoms exist about their health or any discomforting condition is prevalent. Chair ergonomics be maintained and according to gender and biomechanics appropriate. All subjects should have personal health care knowledge. All subjects should be informed about importance of physical activity. Proper ergonomics must be used at home and workplace. All subjects should be given

important psychological support regarding stress management, reduction of fear and avoidance. All subjects must be made cognizant of their illness and disease-oriented treatment.

CONCLUSION

Study was conducted over 190 participants of the banker's community thus conducting a research over piriformis tightness due to long sitting correlated with aggravating symptoms by putting wallet in the back pocket. Studies proponent hypothesis that 65.4% of the population had piriformis test positive and yet with wallet neuritis. Wallet does aggravate the symptoms. For conformation, we performed piriformis stretch test to eradicate other possible outcomes regarding pain associated symptoms.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Mansoor Ahmad	Conduct study, Data collection and analysis	
2	Kaab bin Maalik	Literature review, conduct study and article writing	
3	Samraiz Mughal	Database search, proof read and final editing of the manuscript	