

Prevalence of Patellofemoral Pain Syndrome in Auto-Rickshaw Drivers Dwelling in Kolhapur

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ABSTRACT

Background Patellofemoral Pain Syndrome (PFPS) stands as one of the chief origins for knee pain felt in the front, marked by discomfort around or behind the kneecap, particularly when doing things like sitting for long times, bending down, climbing steps, and resting on knees. It often links with issues in how the body moves, muscle weaknesses, and using the knee joint too much. PFPS might truly impact how well someone functions and their life quality if it is not found and treated soon. Work conditions play a big part in creating problems with muscles and bones. Drivers of auto-rickshaws face special risk because of sitting for extended periods in a stiff position, bending the knee repeatedly while operating the vehicle, experiencing shaking, and bad workspace setups. Those elements might raise strain upon the joint between the kneecap and thigh bone, making people prone to developing PFPS. Even though there is a possible danger, not much study looks closely at how widespread PFPS is among drivers of auto-rickshaws, mainly within the group of people in India. Knowing the extent of PFPS in this work setting is crucial for finding it early, stopping it, and putting in place suitable physical therapy methods.

Aim of the study- To determine the prevalence of patellofemoral pain syndrome among Auto-Rickshaw Drivers residing in Kolhapur.

Procedure- This study involved a total of 203 people. These were auto-rickshaw drivers chosen by chance in Kolhapur city. This was done after applying the inclusion and exclusion criteria. We used the Numerical pain rating scale for measurement of pain. The Kujala questionnaire was also used for pain. Finally, data was gathered using the SNAPPS Questionnaire, which was in the Marathi language.

Out come measure- Numerical Pain Rating Scale, Kujala Questionnaire, SN APPS Questionnaire, **Result** -The current study aimed to find out how common Patellofemoral Pain Syndrome (PFPS) is among auto-rickshaw drivers in Kolhapur city. Out of 203 participants, 26 drivers were identified as having PFPS, showing a prevalence of 12.80%. The results show that a some of auto-rickshaw drivers have pain in the front of their knees, which makes it hard for them to do their jobs.

Conclusion- This current research found that 12.80 % of auto-rickshaw drivers in Kolhapur had Patellofemoral Pain Syndrome (PFPS). This means 26 out of the 203 drivers studied had this issue. The results suggest that some drivers have pain in the front part of their knee. This pain is probably linked to sitting for long times, moving their knees over and over, and work stress.

Keywords- Patellofemoral Pain Syndrome. Numerical Pain Rating Scale, Kujala Questionnaire, SNAPPS questionnaire.

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INTRODUCTION

Prevalence of patellofemoral pain syndrome in Auto-Rickshaw Drivers Dwelling in Kolhapur.

The patella, which is the largest sesamoid bone in the human body, sits inside the quadriceps femoris muscle's tendon near the front of the knee^[1] Here are the jobs the patella does It gives a place for the quadriceps tendon and the patellar ligament to connect. It makes the moment arm of the patellar ligament longer, which boosts how well the quadriceps muscle can straighten the leg. It lessens

the rubbing between the tendon and the femur, keeping the quadriceps tendon safe from friction. It acts like a shield to guard the deeper parts of the knee joint. A group of illnesses known as the Patellofemoral discomfort Syndrome (PFPS) cause discomfort in the knee's peripatellar area. This condition is characterized by a slow, increasing pain that gets worse when you stoop, climb stairs, or squat, among other activities.^[2] It is characterized as acute discomfort that occurs without radiation^[2]

Runner's knee, patellofemoral tendon disease, anterior knee pain syndrome, and chondromalacia patella fall under the purview of PFPS, regardless of whether they are linked to other conditions like osteoarthritis in the knee.^[2] In the general population, PFPS is 22.7% prevalent, and in an occupational setting, it can be categorized as Musculoskeletal Disorder (MSD) class two or three According to the findings of the European Working Conditions Survey.^[2] Transportation workers spend more than eight to ten hours a day stuck in traffic. Drivers who work as professional drivers (such as those in trucks, buses, autorickshaws, and taxis) lead unhealthy lifestyles. They are susceptible to a variety of health issues that are directly caused by their working environment including exposure to air pollution, elevated temperatures, shift work, irregular seasonal variations.^[5] Long sitting, vibration, forward posture, are all part in driving, and any of these factors might cause musculoskeletal issues. More significantly, drivers must wait for fares for extended periods of time while they are seated.^[5] A study took place in China during 2018. Its goal was to find out how common PFP and knee pain are among young people generally. Also, researchers wanted to check for any links between PFP and things like age, whether someone was male or female, or their BMI.^[6] Twenty-seven percent of individuals reported having patellofemoral pain, and knee discomfort was found to 35.6 percent of participants have it.^[6] The prevalence of PFP was not shown to be significantly predicted by gender, age, or BMI, Activities involving knee flexion more than 60° and knee movement in front of the toes.^[6] Research shows that people who drive for a living, especially auto rickshaw drivers, tend to have more body aches and joint issues. This happens because the way their vehicles are built is not good for the body's shape and movement. This may be due to the fact that drivers are more at risk for back and Long-term vibration exposure, poor road condition, the vehicle's shock-up system, heavy lifting, and frequent lifting can all cause neck strain. The higher risk of joint pain (cervical neck, shoulder, back pain, knees) is associated with prolong vibration exposure and frequent lifting.^[6] A syndrome like PFPS is defined by a group of illnesses that share symptoms and have a major influence on the person's life It is found that the literature contains relatively little information when analysed, and considerably less when looking for specific information on worker populations.^[7] In order to shed light on the current understanding of this issue, the aim of this research is to demonstrate the prevalence of PFPS in various occupational contexts among non-athlete workers.^[7] Muscular tightness, muscular weakness, and joint tissue limitation can all lead to patellofemoral joint

hypomobility, which puts more strain on the joint and causes PFPS. Joint hypomobility can also result from a restriction in medial glide caused by the patellofemoral joint's lateral connective tissue, which keeps the patella from moving back into the trochlear groove. This makes the kneecap move out of place. The side angle of the joint gets bigger. The kneecap pushes hard against the outer part of the thigh bone groove. This leads to muscles being out of balance, which puts more pressure on the joint connecting the kneecap and thigh bone.^[8]

People with PFPS often bend their knees too much. This helps to tighten their muscles. However, it also puts more stress on the knee joint. This happens because their thigh muscles and the muscles on the back of their thigh are not as working as much as they are in other patients.^[9] Many things about how the legs move are known to be part of the many causes of PFPS. People have argued for a long time if the kneecap moving out of place is the main reason for PFPS. A difference in how the vastus medialis or vastus lateralis muscles turn on is believed to cause PFPS. Older studies showed that the kneecap moving wrong is a big part of this problem. But newer studies suggest that problems with movement, not the vastus muscles being uneven, are the main thing causing the kneecap to move incorrectly.^[10] These imbalances could be linked to the femur's internal rotation as a result of the hip's external rotators and abductors being weak. Rearfoot eversion, stiffness in the iliotibial band with imbalance and tightness in the hamstrings are other possible causes of femoral internal rotation. The retinacula, synovium, infrapatellar fat pad, and subchondral bone of the patella and trochlea are among the innervated structures in the patellofemoral area that are considered to be overloaded in PFPS, especially during weight-bearing knee flexion.^[10] Increased patellofemoral stresses, which commonly result from poor lower limb biomechanics in sports like drop landings with bow knee, are a common cause of complaints in athletes. These movement problems change how the Patellofemoral joint works and cause pain. These issues include not being able to control hip turning well, the foot flattening too much, the thigh bone pointing forward too much, and the shin bone turning.^[11] A self-report questionnaire called the Survey Instrument for Natural History, Aetiology or Prevalence of Patellofemoral Pain (SNAPPS) was created expressly to determine the prevalence of PFP in the population by differentiating between individuals who have the ailment as well as those who don't. It shows good dependability over time. It also has strong ability to find true positives or true negatives. This score is over ninety percent when telling the difference between general knee pain and

pain from the kneecap. Clinical characteristics and a map of knee pain were used in its design. Europe, China, and Africa have all studied and utilized SNAPPS, which has already been translated into eleven languages.^[12]

METHODOLOGY

An Observational Study conducted using Convenience sampling. The study conducted on Auto rickshaw drivers dwelling in Kolhapur for a duration of 6 months. Study started after getting Approval from Institutional Ethics Committee. Sample size was 203. study subjects were selected fulfilling exclusion and inclusion criteria.

Material

Numerical pain rating scale, kujala questionnaire, survey instrument for Natural history, aetiology or Prevalence of Patellofemoral pain Studies, Consent form.

Inclusion Criteria

Male drivers of autorickshaws, Age group from 30-55, Duration of driving since 5 years, Currently working in the same profession, Interested parties who are prepared to take part in the research, Daily Working hours 7-8 (hours), History of injuries to the lower limbs.

Exclusion Criteria

History of fractures, Congenital disorders of the musculoskeletal system, Other neurological and orthopedic conditions.

PROCEDURE

The plan for the study was first sent to the Ethics Committee at D. Y. Patil University to get approval before starting the research. Once the ethics approval was obtained meet the auto-rickshaw drivers stops and work zones in Kolhapur city to find people who might be included. The auto-rickshaw drivers were checked against the set rules for who could be included and not. The goal, aims, and value of the study were explained to those who qualified in language that was easy to grasp. The drivers were told about how the study would be done, how they would be checked, and that they could stop taking part any time. Drivers who agreed to join the study were asked to sign a consent form before they were included After getting consent, basic information like age, how long they had driven auto rikshaw, and how many hours they drove each day was reported. Drivers answered specific questions about having pain in the front of their knee, especially when doing things like sitting for a long time while driving, going up steps, bending low, kneeling, or doing regular tasks. Then, each person got the NPRS scale, Kujala questionnaire, SNAPPS questionnaire form to check the issues and problems with movement caused by pain around the kneecap. The researcher helped the participants whenever they needed it to make sure they understood everything

and filled out the forms correctly. The answers from the talks and the forms were carefully written down onto the data sheets and check forms made for the research. Using the answers and the scores from the forms, the people were sorted based on whether they had Patellofemoral Pain Syndrome (PFPS) or not. All the information gathered was put together and arranged neatly so it could be studied using statistics. This was done to figure out how common Patellofemoral Pain Syndrome is for people who drive auto-rickshaws.

RESULT

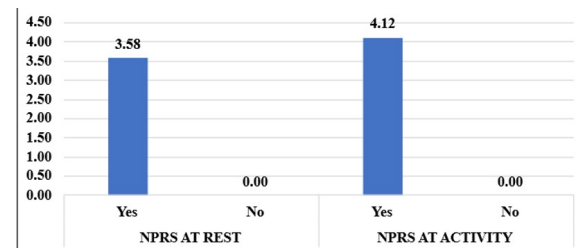
Table no 1 - This table is Show the age distribution of the people who took part in study.

	Minimum	Maximum	Mean	Std. Deviation
AGE	28.00	40.00	38.26	1.99

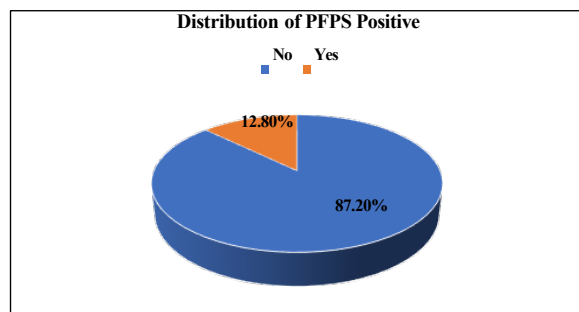
This is a simple explanation you can utilize: Participants in the study ranged in age from 28 to 40 years, suggesting that all subjects belonged to a rather limited adult age range.

The mean (average) age was 38.26 years, indicating that the majority of participants leaned towards the higher end of the age spectrum instead of being uniformly distributed throughout it.

The standard deviation (1.99 years) is very small, suggesting that participant ages vary very little. Most people clustered around the mean age of roughly 38 years; hence, there were only minor variations between them.



Parameters	PFPS Positive	Mean	Std. Deviation	p-value
NPRS AT REST	Yes	3.58	1.84	<0.001*
	No	0.00	0.00	
NPRS AT ACTIVITY	Yes	4.12	2.22	<0.001*
	No	0.00	0.00	
KUJALA SCORE	Yes	85.38	43.20	<0.001*
	No	228.22	16.03	
SNAPPS SCORE	Yes	5.50	2.08	<0.001*
	No	0.05	0.60	



Pai chart no.1- This pai chart show that 12.80% of participants have PFPS, while 87.20% do not.

The pie chart called Distribution of PFPS displays the share of male auto-rickshaw drivers in your research who were found to have Patellofemoral Pain Syndrome (PFPS). From all 203 people who took part: 87.20% (177 drivers) did not have PFPS 12.80% (26 drivers) did have PFPS. This suggests that most of the drivers were without PFPS. Yet, almost one in every eight drivers did suffer from it, meaning pain in the front of the knee is found in a good number of these drivers. This points out the job related danger and the need for ways to stop this among auto-rickshaw drivers.

PFPS Positive	Frequency	Percentage
No	177	87.20%
Yes	26	12.80%
Total	203	100.00%

Table no.2 -This table show that most participants (87.2%) do not have PFPS, while only 12.8% have PFPS.

We looked at 203 drivers of auto-rickshaws drivers for this study.

Among these people who took part, 26 drivers showed they had PFPS. That is 12.80% of the group. The rest, 177 drivers, which is 87.20%, did not have PFPS.

Table no. 3 -This table show that PFPS participants have poorer functional scores (KUJALA and SNAPPS, NPRS) and all differences are statistically significant ($p < 0.001$).

Comparison of NPRS Score across PFPS Status

Graph no 1- This graph show that only PFPS participants have pain (higher NPRS scores), while those without PFPS report no pain.

This graph called "Comparison of NPRS across PFPS Status" displays the typical pain level. This pain was gauged using the Numerical Pain Rating Scale (NPRS) for drivers who tested positive for PFPS and those who tested negative.

NPRS While Resting:

Drivers with PFPS said their average pain rating was

3.58.

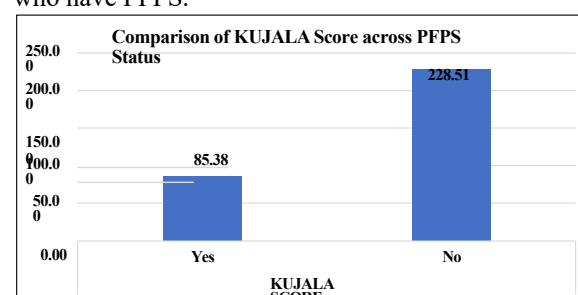
Drivers without PFPS showed a rating of 0.00. This means they felt no pain when resting.

NPRS During Action:

Drivers with PFPS noted an even greater average pain rating of 4.12.

Drivers without PFPS still reported 0.00. This means they felt no pain while doing things.

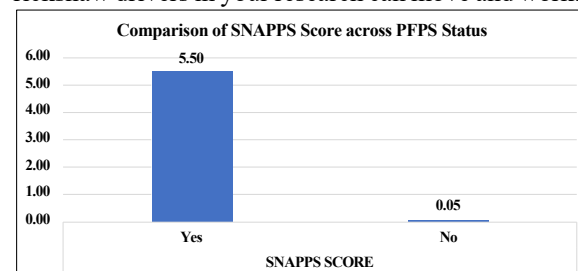
The picture plainly demonstrates that drivers who have PFPS feel some pain, ranging from mild to medium. This pain gets worse when they are active compared to when they are just sitting still. However, drivers who do not have PFPS said they felt no pain at all. This points to the idea that movement makes the front knee pain worse for auto-rickshaw drivers who have PFPS.



Graph no 2-This graph show that participants without PFPS have much higher Kujala scores (better function) than those with PFPS.

This graph called "Comparison of KUJALA Score across PFPS Status" presents how functional knee health differs for auto-rickshaw drivers who do and do not have PFPS, based on the Kujala Anterior Knee Pain Scale. Drivers who tested Positive for PFPS (Yes) averaged a Kujala score of 85.38.

Drivers who tested Negative for PFPS (No) had a much larger sum/total score of 228.51 (meaning the group without PFPS had better general knee use). The picture obviously proves that drivers found to have PFPS have lower Kujala scores. This signals worse knee function and more trouble with things like moving around, using steps, bending down, and sitting for long periods. On the other hand, drivers without PFPS display clearly better functional results. This verifies that PFPS really affects how well auto-rickshaw drivers in your research can move and work.



Graph no 3- This graph show that individuals with

Patellofemoral Pain Syndrome have significantly higher SNAPPS scores than those without the condition.

This graph called “Comparison of SNAPPS Score across PFPS Status” shows how the SNAPPS survey results differ for auto-rickshaw drivers who have PFPS and those who do not.

Drivers who tested positive for PFPS (Yes) had an average SNAPPS score of 5.50. Drivers who tested negative for PFPS (No) had a really small average score of just 0.05.

The picture plainly reveals that drivers found to have PFPS mentioned much bigger SNAPPS scores when matched against those without PFPS. Bigger SNAPPS scores mean more problems and limits in daily tasks linked to pain in the front of the knee. On the other hand, drivers without PFPS had scores that were almost nothing, showing very few or no issues. This backs up the fact that PFPS greatly impacts how bad the symptoms are and the walking problems for auto-rickshaw drivers in your research.

DISCUSSION-

This study gathered data from a auto-rickshaw drivers. The main goal was seeing how often Patellofemoral Pain Syndrome (PFPS) shows up in participants who drive auto-rickshaws in Kolhapur city. We also aimed to learn how severe the pain felt and what limits it put on their daily activities. We used known ways for measuring this (NPRS, Kujala Anterior Knee Pain Scale, and the SNAAPS final questionnaire). These findings were helpful insights about how job strain leads to pain in the front knee for these specific workers. In our group, 12.80% of drivers, meaning 26 out of 203 people, suffered from PFPS. While the majority in the review (87.20%) were free from PFPS, the count we noted is important considering what auto-rickshaw driving needs. For sports people, PFPS often comes from too much effort or from large, sudden impacts. But, this group of workers mostly faces small strain over long periods, keeping their knees a bit bent, and pushing the foot pedals a lot. Keeping the knee bent beyond 60 to 90 degrees much more strongly pushes down on the joint under the kneecap. Auto-rickshaw drivers often hold their knees bent for extended stretches (around 7 to 8 hours daily). Using the clutch and brakes repeatedly causes small damages as moments go by. In time, this can lead to the kneecap moving wrongly, pressing too hard on one side, and bothering the sensitive areas near the kneecap. All these things are recognized for causing PFPS problems. The average figure we saw hints that even if driving an auto-rickshaw does not cause quick, major strain, being in that role regularly for a long time might pose a danger due to the body's posture.

This current research wanted to find out how common

Patellofemoral Pain Syndrome (PFPS) is for auto-rickshaw drivers in Kolhapur city. The findings revealed that 12.80% of the 203 drivers had PFPS. This shows that quite a few drivers deal with pain in the front of the knee and have trouble doing things because of problems with the patellofemoral joint. We can look at these results alongside an earlier study. Christopher J. Watson looked at how often professional drivers had musculoskeletal pain (MSPs). The review said that the average rate for knee pain was about 21.8% and for hip pain was 19.5%. This suggests that leg and hip problems are frequent for people who drive for a living. When you compare this review to our current study's rate of 12.8%, it is a bit less than the knee pain rate reported for professional drivers. One reason for this difference could be that the review looked at all kinds of general knee pain from muscles and bones. However, this study looked only at Patellofemoral Pain Syndrome, which is just one specific cause of knee pain. The review also pointed out that drivers of bigger vehicles usually had more musculoskeletal problems in their lower bodies than drivers of smaller or medium-sized vehicles. Since auto-rickshaws are considered light vehicles, this might help explain why the rate of PFPS in this study was somewhat lower. Drivers of heavy vehicles usually deal with more physical strain, shaking, and longer hours behind the wheel. These things can raise the chance of getting muscle and bone issues in their legs.

Also, the study review said that pain in muscles and bones for drivers could come from pushing on their joints, sitting too long, and moving their legs over and over while driving. These job things also matter for auto-rickshaw drivers. Using the gas and brake pedals all the time, keeping the knee bent for a long while, and not getting chances to rest or move can put more strain on the knee joint. This can lead to PFPS forming different key thing the review pointed out was that some pain in the arms and legs might actually be pain coming from the back. However, the studies used did not make it clear if the back was the real cause of that pain. For our current study, the check looked only at PFPS symptoms and what limits the knee joint had. Because of this, we did not look at how much the back might be causing the knee pain. In general, both our study and the review show that drivers often have muscle and bone trouble in their legs because of what their jobs require. Even though the rate of PFPS for auto-rickshaw drivers in Kolhapur city (12.8%) is less than the general rate of knee pain found in professional drivers, the results still show it is key to see the risks from the job. We need to put in place ways to stop knee problems for these workers. ^[20] The goal of the current study was to ascertain how common Patellofemoral Pain Syndrome (PFPS) was among

Kolhapur city auto-rickshaw drivers. In this study, the prevalence of PFPS was found to be 12.80% among the 203 drivers examined. This indicates that a notable proportion of auto-rickshaw drivers experience anterior knee pain and functional limitations related to the patellofemoral joint.

The results of a systematic review in the field of patellofemoral pain Syndrome research can be compared with the current study's findings. According to that review, PFPS is a common musculoskeletal condition across different populations, including adolescents, athletes, and military personnel. The review reported a point prevalence of 13.5% among military populations and 12–13% in the female general population. Interestingly, the prevalence observed in the present study (12.8%) is very similar to the prevalence reported in a general population and military groups. This similarity suggests that occupational factors such as prolonged sitting, repetitive knee flexion during driving, and long working hours may contribute to PFPS among auto-rickshaw drivers in a way comparable to physical or occupational stresses seen in other populations. None the less, compared to highly active groups, the prevalence revealed in this study is lower. For instance, the comprehensive review found that the incidence was 16.7% to 29.3% among female top athletes and 35% among multi-day amateur cyclists. These higher values may be due to the increased mechanical load on the knee joint during intense physical activity and repetitive knee movements involved in sports and endurance activities. According to the review, the annual prevalence of PFPS is roughly 22.7% in the general population, 35.7% in professional cyclists, and 28.9% in adolescents.

Compared with these findings, the prevalence observed in auto-rickshaw drivers in the present study is relatively lower. This difference may be explained by the moderate physical demands of driving compared to high-intensity athletic activities, although prolonged sitting and occupational strain may still predispose drivers to knee discomfort. Another important factor is sex distribution. Many studies included in the systematic review reported higher prevalence among females, especially in athletic populations. In contrast, the present study included only male auto-rickshaw drivers, which may partly explain the slightly lower prevalence rate observed. Over all, the results of this study corroborate previous research showing that PFPS is a prevalent musculoskeletal disorder across a variety of demographics. Although the prevalence among auto-rickshaw drivers is lower than that seen in athletes and highly active individuals, it is still comparable to that reported in general and occupational populations.

This findings emphasise the significance of early detection, ergonomic awareness, and preventive measures to lessen knee discomfort and functional limitations in drivers of autorickshaws. ^[19]

Pain Characteristics (NPRS Analysis)

Looking at pain levels showed that drivers who had PFPS reported these average pain scores: Average pain score when not moving: 3.58 and Average pain score during moving: 4.12

On the other hand, the group without PFPS said they felt no pain at all. It makes sense that pain goes up when they are moving compared to when resting. This matches how PFPS usually shows up. Discomfort gets worse with things that put more pressure on the kneecap joint. This includes sitting for a long time, which is sometimes called Stiffness, going up or down stairs, bending down low, and doing knee movements over and over again. The average pain score during activity is in the low to medium level. This means that even if the problem is not making them really unable to function right now, it is clearly affecting what they can do comfortably. It is important to note that if medium pain keeps going, people might start moving differently, their thigh muscles might get weaker, and their body mechanics could get worse if nothing is done about it. From what doctors see, the fact that moving causes pain highlights that the problem is mainly mechanical for these people.

Functional Impairment (Kujala Scale Findings)

Function assessed using the Kujala Anterior Knee Pain Scale was much lower in individuals with PFPS than in those without PFPS. The Kujala scale measures pain when people do things like: Going up and down stairs, Bending down, Running and jumping, Sitting for a long time supporting one leg and having swelling. Lower numbers mean worse function and pain when doing everyday tasks. For those who drive auto-rickshaws, staying seated a lot without much shifting of posture likely puts extra strain on the kneecap. This can harm the movement and ability of their knees. Even though the typical mark of

85.38 shows just small to mid-size issues with how it works, not a really bad failure, it is still something we need to see. Even small problems with function that are not obvious can hurt a person's ability to work and their joint health over time. PFPS is more than simply feeling pain; it is an issue related to muscle function and how the body actually moves.

Symptom Severity (SNAPPS Questionnaire)

The SNAPPS scores clearly showed the difference between drivers who had PFPS and those who did not: PFPS Positive average and 5.50, PFPS Negative average: 0.05. This big gap between the two sets of drivers means those with the problem felt much more pain. The SNAPPS survey details exactly what kind of pain is felt in the front of the knee, making it better

for finding the right diagnosis. When the results from NPRS, Kujala, and SNAPPS all line up, it makes the study's core results stronger. Using several proven tools improves how well the study measures what it intends to measure and makes it less likely that mistakes in measuring caused the results.

CONCLUSION

This study shows that some auto-rickshaw drivers experience patellofemoral pain, mainly due to long hours of sitting and continuous driving, which place repeated stress on the knee joint. This pain, especially in the front of the knee, can affect their daily activities and make simple tasks like walking, climbing stairs, or sitting for long periods uncomfortable. The use of the Kujala scale and pain rating scales helped in understanding how severe this problem is among drivers. Factors such as poor posture while driving and insufficient rest appear to contribute significantly to this condition. Identifying symptoms early is important to prevent the pain from getting worse over time. Simple measures like regular exercise, stretching, and maintaining proper sitting posture can help reduce discomfort. It is also important to create awareness among drivers about protecting their knee health. Overall, patellofemoral pain is quite common in this group and requires proper attention, care, and preventive strategies to improve their quality of life.

REFERENCES

1. Cox CF, Sinkler MA, Black AC, Launico MV, Hubbard JB. Anatomy, bony pelvis and lower limb, knee patella. InStatPearls [Internet] 2023 Oct 27. StatPearls Publishin. [1]
2. Pereira P, Baptista JS, Costa JC. Prevalence to patellofemoral pain syndrome in occupational context: a systematic review [2]
3. Mohokar AP, Deoke AR, Soaji AV. Prevalence & risk factors of musculoskeletal impairments among auto-rickshaw drivers in a city of central India. IOSR Journal of Dental and Medical Sciences. 2018;17(2):49-54. [5]
4. P, István B, Liang M. The relationship between patellofemoral pain syndrome and hip biomechanics: A systematic review with meta-analysis. In Healthcare 2022 Dec 28 (Vol. 11, No. 1, p. 99). MDPI.Xie [6]
5. Pereira P, Baptista JS, Costa JC. Prevalence to patellofemoral pain syndrome in occupational context: a systematic review. [2]
6. Abdo N, Youssef EF, Ibrahim MM. Efficacy of adding manual therapy to hip and knee exercises in patients with patellofemoral pain syndrome: a double-blinded randomized controlled clinical trial. Scientific Reports. 2025 Sep 23;15(1):32655. [8]
7. Z, Zheng W, Wang H, Gao Y, Wang C. Effects of functional strength training on pain, function, and lower extremity biomechanics in patients with patellofemoral pain syndrome: a randomized clinical trial. Journal of Orthopaedic Surgery and Research. 2025 Jan 16;20(1):50.[9]
8. Callahan EA, Chin KE, Chu SK. Current evidence of evaluation and management of the athlete with patellofemoral pain syndrome. Current Physical Medicine and Rehabilitation Reports. 2025 Aug 5;13(1):30.[10]
9. Chahar S, Shriya S, Yadav P, Sinha S, Mehra P, Mohanta S, Vakharia KS, Uppal H. Kinesio tape combined with supervised rehabilitation provides satisfactory outcome in treating patellofemoral pain syndrome. Journal of Arthroscopic Surgery and Sports Medicine. 2026 Jan 9;7(1):18-24.[11]
10. Brady WS, Boonprakob Y, Kwangsawad T, Buahong A, Asawaniwed P, Khachornsaengcharoen N, Callaghan M, Selfe J. Thai version of the Survey Instrument for Natural History, Aetiology and Prevalence of Patellofemoral Pain: Cross-cultural validation and test-retest reliability. Asia-Pacific journal of sports medicine, arthroscopy, rehabilitation and technology. 2021 Oct 1;26:1-7.[12]