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RESEARCH ARTICLE

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PREVALENCE OF PATELLOFEMORAL PAIN SYNDROME IN PATIENTS WITH ANTERIOR KNEE PAIN IN SOUTH GUJARAT

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ABSTRACT

Introduction: Abstract- Patellofemoral pain (PFP) is recognized as one of the most common lower-extremity disorders encountered by orthopedic physical therapists. PFPS is defined as pain around (peripatellar) or behind the kneecap (retro patellar) that is aggravated by activities loading the knee joint, such as running, squatting, climbing stairs or even prolonged sitting with knee flexion above 90 degree. It is one of the most common knee conditions clinicians encounter in young and active individuals. It is estimated that 22.7% of the general population is affected by PFP at some point, while the prevalence in adolescents is slightly higher at 28.9%. **Objective:** To find the prevalence of PFPS in Surat, Gujarat. **Method:** In the present correlational study, prevalence was found using patellar tilt test and KUJALA questionnaire, patients with anterior knee pain, aged between 18 to 35 years were included. Statistical analysis was done by using SPSS 26.0 version **Result:** The prevalence of PFPS in Surat, Gujarat was 20.7%. **Conclusion:** The prevalence of PFPS in Surat, Gujarat was 20,7% of general population.

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INTRODUCTION

Patellofemoral pain (PFP) is recognized as one of the most common lowerextremity disorders encountered by orthopaedic physical therapists (Mascal, 2003). PFPS is defined as pain around (peripatellar) or behind the kneecap (retro patellar) that is aggravated by activities loading the knee joint, such as running, squatting, climbing stairs or even prolonged sitting with knee flexion above 90° (Manojlović, 2022). Patellofemoral pain syndrome (PFPS), also historically described as chondromalacia of the patella (Cook, 2012). The latter specifically refers to the finding of softened patellofemoral cartilage on plain radiography, magnetic resonance imaging, or knee arthroscopy. It is one of the most common knee conditions clinicians encounter in young and active individuals (Piva, 2005). It is estimated that 22.7% of the general population is affected by PFP at some point, while the prevalence in adolescents is slightly higher at 28.9% (Manojlović, 2022). It has also been reported that females, as compared with their male counterparts, are significantly more likely to experience PFP (Ireland, 2003). There is a high incidence of this condition among physically active populations; it affects 8.75% of the individuals involved in intense physical training and has a significant impact on their occupational activities (Nunes, 2013). In addressing the gaps in our knowledge, this research endeavors to provide valuable insights for healthcare professionals, researchers, and individuals affected by PFPS. The ultimate goal is to enhance our ability to prevent, diagnose, and treat this challenging condition,

thereby optimizing the overall health and well-being of those grappling with Patellofemoral Pain Syndrome. As per my search, there is no study available showing the prevalence of patellofemoral pain syndrome in Surat, Gujarat population, so this study will provide information about prevalence of PFPS in Surat. Hence aim of the study was to find Prevalence of PFPS among age group of 18-35 years in Surat, Gujarat.

Study Design: Observational Study.

Study Population- Patients of Patellofemoral pain with 18-35 years of age group.

Sampling Technique: Convenient sampling.

Study Duration- 1 year.

Sample Size- The prevalence was calculated through, $n = z^2(1-p)/d^2$ where, confidence interval set at 95% and precision at 0.10 so 92 subjects were taken for prevalence (Pourhoseingholi, 2013).

Study Setting- Different physiotherapy OPD and other clinical OPDs of Surat.

Inclusion Criteria Patient willing to participate in the study will be included if they meet the following criteria: • Both male and female • 18-35 years age group • Anterior or retro patellar knee pain of the

following activities- prolong sitting, stair climbing, squatting, running, jumping/hopping. • Positive Patellar tilt test¹⁴ • Patients with KUJALA score below 8033.

Exclusion Criteria • Signs and symptoms of meniscal or other intra-articular injury conditions. •Cruciate or collateral ligament involvement. • Tenderness over the Patellar tendon, Iliotibial band, or Pes Anserinus tendon. Evidence of the knee joint effusion. • A history of dislocation. • Previous surgery on Patellofemoral joint. • Sinding-Larsen-Johansson syndrome.

Outcome measure-Patellofemoral pain syndrome was confirmed by positive Patellar tilt test (Smith, 2008). 2. Prevalence was found through KUJALA questionnaire (Padasala, 2019).

Procedure-Ethical clearance was taken from Institutional ethical committee. • Subjects were preliminary screened based on the inclusion and exclusion criteria. Demographic details were obtained from all the subjects (annexure 4). The purpose of the study was explained and all the participants were asked to give written informed consent (annexure 1,2,3). • Participants were chosen through convenient sampling method.

To find prevalence, the diagnostic criteria was patients having anterior knee pain with positive Patellar tilt test. Patellar tilt test is a component of knee examination which may be used to test for patellofemoral pain syndrome. The test is performed with Patient in supine, knee relaxed in 20° flexion. Examiner holds the patella between their thumb and forefinger, and pushes the patella down in an attempt to flip the lateral edge of the patella upwards. Elevation of the lateral patella to less than neutral suggests an abnormal result, where 0 to 20° elevation is normal (Verma, 2012). The patients who tested positive for Patellar tilt test will be asked to fill KUJALA scoring questionnaire. Demographic details of patients was taken (Annexure 4). • The demographic data collection includes; age, body mass index, the side of the affected knee, chronicity, vitals and the Kujala score. In case of bilateral PFPS, the patients were informed to evaluate the more affected side. Patients will be asked to fill a KUJALA scoring questionnaire, which is valid and reliable for patellofemoral pain syndrome (Sherman, 2014) • The Kujala score is assessed from a self-administered questionnaire for patients with PFPS that consists of 13 questions that include presence of a limp, support, walking, stairs, squatting, running, jumping, prolonged sitting with the knees flexed, pain, swelling, abnormal painful kneecap (patellar) movements (subluxations), atrophy of the thigh and flexion deficiencies. Total scores range from 0 to 100. The lower score means more symptoms and a greater severity of deficits. A higher Kujala score indicates a higher functional activity level and a lower level of symptoms (Sherman, 2014).

STATISTICAL ANALYSIS

The data was entered using Microsoft excel 2019 and it was analysed using SPSS 26 version software. Descriptive analysis of participant's PFPS Score was done.

RESULTS

The study included the sample of 92 participants(male and female) with 18 to 35 years of age. The study was conducted in SPB physiotherapy OPD and different OPD'S from Surat.

Table 7.2.1.1 Descriptive Characteristics of All Variables

CHARACTERISTICS	Mean ± SD
AGE(Years)	25.0 ± 4.97
97 BMI	25.80533

Table 7.2.1.2 shows Frequencies of Patellar tilt test

Patellar tilt test	1	2
	Positive	negative
counts	18	74
% of total	19.6%	80.4%

Table 7.2.1.3 shows Frequencies of PPFS through KUJALA questionnaire

PPFS	0	1
	NEGATIVE	POSITIVE
COUNTS	73	19
% OF TOTAL	79.3%	20.7%

DISCUSSION

It is confirm that PFPS is a common pathology among adolescents, the general population, and those with high levels of activity, such as elite athletes and military populations. Patellofemoral pain is often cited as an overuse injury, with short periods of overuse or an increase in physical activity, is thought to be a particular risk factor. Annual prevalence in the general population is reported as 22.7% and in general adolescent population it is reported as 28.9%⁹. Information about Prevalence of patellofemoral pain syndrome in Surat, Gujarat was not available so, the major objective of this study was to calculate prevalence of Patellofemoral pain syndrome, in Surat, Gujarat and association of common intrinsic risk factors in development of patellofemoral pain syndrome. In our current study, we included the sample of 92 participants (male and female), of 18 to 35 years of age group, to find prevalence with unilateral PFPS. The study was conducted in different OPD's from Surat. In which, mean age of the participants were 25.0± 4.97. Prevalence was found using two outcomes, which were, positive Patellar tilt test and KUJALA 1questionnaire. Guilherme S. Nunes et al, conducted a study, in which it was suggested that patellar tilt can be used to evaluate patello femoral pain syndrome. Also, Laurie A. Hiemstra et al, conducted a study which showed that Kujala score is a valid outcome to diagnose patellofemoral pain syndrome¹¹. Urho M. Kujala et al conducted the scoring of KUJALA questionnaire in his study "Scoring of Patellofemoral Disorders"¹². In present study, 18 subjects were diagnosed with positive patellar tilt test and 19 subjects were found positive for PPFS with KUJALA questionnaire out of total number of 92 subjects, so the percentage of total positive subjects were 20.7% and number of 92 subjects, so the percentage of total positive subjects were 20.7% and negative were 79.3%. Hence the prevalence of patellofemoral pain syndrome in Surat, Gujarat is found to be 20.7% of total general population. The study was limited to one geographical location. The patients can also be taken from different zones and cities of Gujarat.

CONCLUSION

In this study, its concluded that prevalence of patellofemoral pain syndrome in Surat, Gujarat is 20.7% in general population.

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