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Prevalence Rate of Patello Femoral Pain Syndrome in Both Genders in 20-40 Years Old Adults

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ABSTRACT

Anterior knee pain also known as patello femoral pain syndrome (PFPS) is believed to be common in young, active females. Anterior knee pain (AKP) common orthopedic condition problem seen in children, adolescents, adults and older age individuals. PFPS is common condition causing knee pain in both athletes and non-athletes. A prevalence rate of 25% has been commonly cited in most of the literature. To measure the prevalence rate of patello femoral pain syndrome or anterior knee pain among adults between 20-40 years and study the gender differences. The sample was taken from those who attended orthopedic department and physiotherapy department OPD for various musculoskeletal issues; all the participants were asked to complete the anterior knee pain questionnaire (AKPQ), a functional outcome tool developed to document symptoms of AKP. Total subjects involved 568 among them, the males were 260 and the females were 308. Total 568 participants included in study among this all 119 is positive for anterior knee pain (=20.95) percent. Females are prone to develop PFPS compare to males. Prevalence rate among females are 21.75 percent and males are 20 percent. Anterior knee pain is common in active young adolescent group 20-40 year age and prevalence rate is also high. Females are more prone to develop PFPS. Overuse of muscles in sports activity, participation in work related strenuous physical activity, reduce flexibility of muscles increases chances of occurrence of anterior knee pain.

Keywords: *anterior knee pain, patello femoral disorders, physical activity, anterior knee pain questionnaire, prevalence rate*

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INTRODUCTION

Anterior knee pain (AKP) is a common orthopedic problem seen in children, adolescents, adults and older age individuals. PFPS is a conditions that are typically non traumatic in origin and result in peripatellar or retro patellar knee pain. PFPS is more common in people who take part in specific sports activity like jumping, football, tennis sort sprinting running. Patello femoral pain syndrome mainly affects adolescent age group of women without any changes such as increased Q-angle or significant disease related changes and other visible changes include crepitus and functional shortage. A number of structures around the patello femoral joints such as synovium infrapatellar fat pad may individually or collectively contribute to PFPS[15].Patello femoral pain syndrome (PFPS) is the most common diagnosis in outpatients presenting with knee pain.[18]The patello femoral pain syndrome (PFPS) is a common cause for " anterior knee pain" and mainly affects young women without any structural changes such as as increased Q-angle or significant pathological changes in articular cartilage[17].Anterior knee pain or patello femoral pain syndrome (PFPS) has been described as a common diagnosis among young, active females[3]·Patello femoral pain is exceedingly common in young adolescents as increased sports importance and activity.Prevalence is defined as the number of cases of a condition existing in a population at a given time divided by the number of individuals in a given population.[4]. Cause of anterior knee pain are multifactorial thisincludes overuse injuries of the extensor apparatus, patellar instability, chondral and osteochondral damage.[16] The pain disturbs not only the sports related activities but also the activities of daily living and thereby restricts their physical activities of choice. Anterior knee pain (AKP) is

symptomatic presentation characterized by pain in the anterior side of the knee, associated with activities such as sitting, squatting, ascending, or descending stairs , after pronlonged sitting with knee flexed and other similar activities.

Many authors did study on PFPS and found prevalence rate between 15 -45%[1] Prevalence of patello femoral knee pain depends on various factors like age ,sex, occupation, life style , daily activity.[2]According to Urwin et al, after low back pain the knee is the second most common site for musculoskeletal pain in adulthood in the United Kingdom[5]. Most of time it is undiagnosed at physiotherapy outpatient department. Most of time physical therapist treat and patella femoral pain and tibio femoral pain with same treatment. Lee Studies available in India regarding incidence and prevalence rate of PFPS.

MATERIALS AND METHODS

Material used in this study is anterior knee pain questionnaire (AKPQ).it was developed by author Kujala et al[6]it is a reliable and valid questionnaire for anterior knee pain patients to measure pain intensity and functional disability because of knee pain. In this study we used Gujarati version of Kujala score as participants are Gujarati it is also reliable and valid tool[19]

Gujarti version of Kujala score is valid and reliable tool.[19] This is a 13 item questionnaire that ask patient about their ability to perform a number of activities and also questions about their knee pain. The score has a range from 0 to 100 and the highest score indicates lower pain and less disability and lower score indicates more pain and higher level disability. Height measurement scale and weighing scale used to measure height and weight of all participants. We have also measure BMI data for all individual participants.

METHODOLOGY

We have included individuals of both genders aged 'between' 20-40 years attending orthopedic department OPD and physiotherapy department OPD, PDU hospital, Rajkot for any musculoskeletal complain. Ethical approval had taken from institutional ethics committee PDU medical college Rajkot registration number ECR/635/INST/GJ 2014/RR-20 the study was conducted over a period of 1 month. Number of persons participated were total 568. Among them maleswere 260 and females were 308. The sample included all the patients coming for orthopedic OPD from different socio- economic backgrounds, doing different physical activities. We excluded persons less than 20 years and persons more than 40 years to avoid pediatric and congenital knee disorders and age related degenerative disorders.We Excluded subjects who have neurological issues, injury around knee joint, taken physiotherapy treatment in past last 3 months and not willing to participate in survey.

We have taken all participants' age, height and weight. The Gujarati version AKPQ was taken for all participants. A cut off of 83 on the AKPQ was chosen those individuals with anterior knee pain; recommendations made in the study by Kujala et al [6] So subjects whom Kujala score is less than 83 score counted as positive. As we have done survey in Gujarat we have used Gujarati version of AKPQ Kujala score. Gujarati version of Kujala score is valid and reliable tool [19]. Prevalencerate was then calculated by number of positive cases divided by the total number of subjects in various samples and total population in the study.

Table 1 Total number and percentage of persons showed positive for AKP (N=568)

	Male	**Female**	**Total**
Subjects	260	308	568
Positive for AKP	52	67	119
Percentage	20	21.75	20.95

Table 2 Gender, Age, Height, Weight

Variable	**Construct**	**Frequency**	**Percentage**
Gender	Male	260	45.77
	Female	308	54.22
Variable	**Mean**	**Standard deviation**	**Range**
Age	30.66	±2.291	21-40
Height (in cm)	161.93	±2.21	142-178
Weight (in kgs)	59.7	±5.66	37-90

Figure 1 bar diagram for positive cases and number of subjects

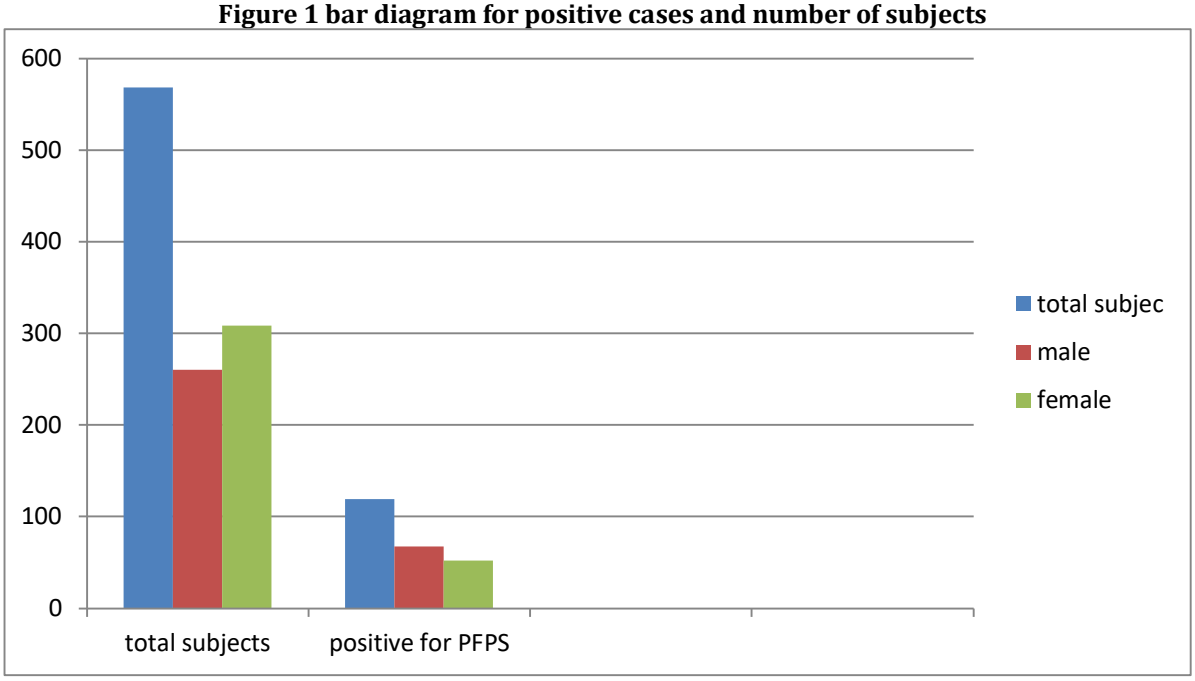
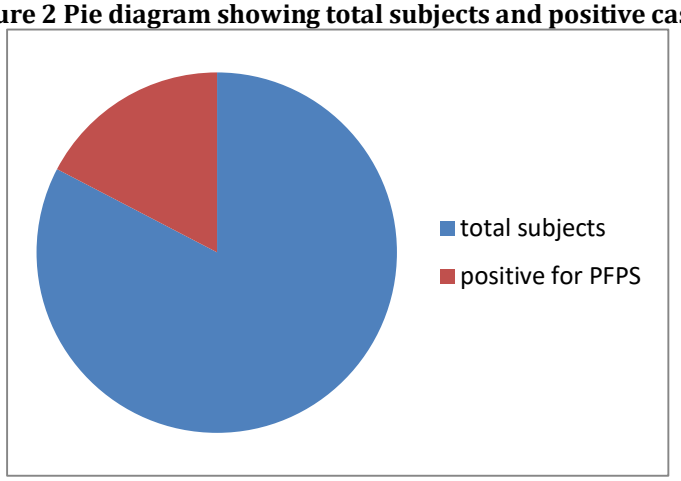


Figure 2 Pie diagram showing total subjects and positive cases



RESULTS

Total 568 participants included in this study among this all 119 have less than 83 AKPQ score and 449 have more than 83 AKPQ score. So prevalence rate is 20.95 percent. Prevalence rate among females are 21.75percentage (67 females positive among total 368) and Prevalence rate among males are 20 percent (52 males positive among total 260). Results showed that Females are prone to develop PFPS compare to males.

DISCUSSION

The anterior knee pain is common in adolescents and young males and females. Females are more prone to develop anterior knee pain. PFPS sometimes called as anterior knee pain etiology and management remain controversial. Patello femoral pain disorder is 'normal' or 'prevalent'. We found that PFPS mostly occurs in young adults but as increases the chances to develop anterior knee pain increases as flexibility reduces around knee structure and most of people starts their physical activity progression is short time. mostly it develops with overuse activity of knee muscles in short time duration. The patello femoral joint is one of the most heavily loaded in the human skeleton[7] Ruffin and kiningham 26 reported that of the 16478 patients presenting to family physicians with musculoskeletal complaints as a result of a variety of sports participation ,among all 11.3% diagnosed with anterior knee pain.[8] the frequency rate of AKP was 8.75% among military learners shown by wills et al[21]Most of time patella femoral pain was treated with conservative management as disease occurrence is because of altered biomechanics of patella

femoral joint and decrease flexibility of muscles around knee joint. In rare cases it requires surgical treatment.

There are several treatment modalities, conservative management available and also effective in the management of AKP; and that there are specific methods to address towards the particular causes of PFPS.[9] Baquie and brunkner[10]stated that PFPS was the most common complaint in physically active patients consulting their physicians and surgeons. Collaghan and selfe[11] conducted a literature review in order to describe the different prevalance and incidence rate of patello femoral pain syndrome or anterior knee pain. P,Devereaux and lachman[12] reported that 25% of the patients in their sports injury clinic had patello femoral arthralgia. Bolind et al [13] reported at prevalance of 15% for AKP among female cadets at United states naval academy and incidence of 33/1000 person years. The AKPQ was choosen because the reported validity and reliability for the test were deemed adequate.[14] The AKPQ has been criticized because it does not include the patients ability to kneel[15] which is commonly impaired functional activity. Most of authors in patello femoral pain study choose 83 cutoff points for positive AKPQ. The authors used formulas derived from Akobeng. Variations reported incidence and prevalence rate may be due to differing populations assessed and also inconsistencies in diagnosis and high quality evidences on which to base assessment. Less literature studies available for Indian population regarding incidence and prevalence rate study for PFPS patients. As it occurs and develop in young age population of country concerns for disease diagnosis and treatment is much important [16-21].

CONCLUSION

We have included an age group of 20-40 years in our study and in India this age populations represent more numbers in census populations and they are the main workforce of any society and can affect the economy of a country. In results of this study one third of this active productive group suffer with anterior knee pain which is a really a main concern. Awareness of this disease is very important as well as etiological factors and health education to prevent the occurrence of AKP will possibly limit the disability and increase productivity. Limited studies regarding prevalence and incidence rate of PFPS available in India. And there is no any study available for prevalence rate for PFPS in Gujarat. Importance of sports activity increases day by day in India as well as in Gujarat and also increasing number of patients of anterior knee pain

Hence, the healthcare professionals should assess the patients with anterior knee pain patients in OPD as it is potentially treatable condition and there is less literature on treatment aspects of this disease.

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CONFLICT OF INTEREST

Authors have no conflict of interest in this study.

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