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Review Article

**KNEE PAIN COMMON DIAGNOSIS: SYSTEMATIC REVIEW  
IN LITERATURE**Riyadh Ahmed Almashni <sup>1\*</sup>, Nasser Saeed AlGhamdi<sup>2</sup><sup>1</sup> Albaha University, Medical College of Albaha University, Albaha, Saudi Arabia<sup>2</sup> Prince Mohammed Bin Naif For Aviation Medicine Center, Riyadh, Saudi Arabia**Abstract:**

*This review is aiming to discuss the knee pain common diagnosis . The present review was conducted by searching in Medline, Embase, Web of Science, Science Direct, BMJ journal and Google Scholar for, researches, review articles and reports, published over the past years. Books published on knee pain common diagnosis . If several studies had similar findings, we randomly selected one or two to avoid repetitive results. On the basis of findings and results this review found Pain was identified as the reason for 2237 (40%) of the visits. .One-fifth of the pain patients had experienced pain for over six months. Analysis of the diagnoses revealed half of the pains to be musculoskeletal. Patients experienced considerable limitations in various activities of life due to pain Our results confirm that pain is a major primary health care problem, which has an enormous impact on public health.<sup>1</sup>*

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## INTRODUCTION:

The knee joint consists of an articulation between four bones: the femur, tibia, fibula and patella. There are four compartments to the knee. These are the medial and lateral tibiofemoral compartments, the patellofemoral compartment and the superior tibiofibular joint. The components of each of these compartments can suffer from repetitive strain, injury or disease [1].

Chronic knee pain is long-term pain, swelling, or sensitivity in one or both knees. The cause of your knee pain can determine the symptoms you experience. Many conditions can cause or contribute to chronic knee pain, and many treatments exist. Each person's experience with chronic knee pain will be different [2].

Temporary knee pain is different from chronic knee pain. Many people experience temporary knee pain as a result of an injury or accident. Chronic knee pain rarely goes away without treatment, and it isn't always attributable to one incident. It's most often the result of several causes or conditions.<sup>3</sup>

## METHODS:

The present review was conducted Jan 2019 in accordance with the preferred reporting items for systematic reviews and meta-analyses (PRISMA) declaration standards for systematic reviews. We reviewed all the topics on Knee pain common diagnosis. To achieve this goal, we searched Medline, EMBASE, Web of Science, Science Direct, and Google Scholar for, researches, review articles and reports, published over the past 15 years. Books published on Knee pain common diagnosis. Our search was completed without language restrictions. Then we extracted data on study year, study design, and key outcome of Knee pain common diagnosis. The selected studies were summarized and unreproducible studies were excluded. Selected data are shown in the Table 1.

### Inclusion criteria

Papers were included if they were based on the knee pathology and used MRI and arthroscopies in some of their patients.

### Exclusion criteria

Randomized controlled trials on many evaluations of selected populations, and furthermore, it is outside the scope of this review to assess whether these reflect best clinical practice.

### Data extraction and analysis

Information relating to each of the systematic review

elements was extracted from the studies and collated in qualitative tables. Direct analysis of the studies of knee pain common diagnosis is done with extreme caution, as different sampling techniques can provide bias as an overview of the assemblage.

## RESULTS:

Findings from UK studies were summarised with reference to European and international studies. During a one year period 25% of people over 55 years have a persistent episode of knee pain, of whom about one in six in the UK and the Netherlands consult their general practitioner about it in the same time period. The prevalence of painful disabling knee osteoarthritis in people over 55 years is 10%, of whom one quarter are severely disabled [4].

Although surgeons often decide to proceed with arthroscopy on clinical assessment alone, the accuracy of such assessment in predicting findings of arthroscopy is between 35 and 70% [5,6]. In England, approximately 80 000 knee arthroscopies were performed in the National Health Service in the financial year 2002–2003 [7].

Although magnetic resonance imaging (MRI) scans are often considered to give the ultimate diagnostic certainty, in reality, the performance of MRI as a diagnostic tool of internal derangement of the knee when compared with arthroscopy has not been tested in a systematic and reproducible fashion. Studies assessing MRI versus arthroscopy have not been reliably compared, making it harder to decide the correct level of clinical significance to the published data [8].

Among the 5 decision rules for deciding when to use plain films in knee fractures, the Ottawa knee rules (injury due to trauma and age >55 years, tenderness at the head of the fibula or the patella, inability to bear weight for 4 steps, or inability to flex the knee to 90 degrees) have the strongest supporting evidence. When the history suggests a potential meniscal or ligamentous injury, the physical examination is moderately sensitive (meniscus, 87%; anterior cruciate ligament, 74%; and posterior cruciate ligament, 81%) and specific (meniscus, 92%; anterior cruciate ligament, 95%; and posterior cruciate ligament, 95%). The Lachman test is more sensitive and specific for ligamentous tears than is the drawer sign. For meniscal tears, joint line tenderness is sensitive (75%) but not specific (27%), while the McMurray test is specific (97%) but not sensitive (52%). Compared with the physical examination, MRI is more sensitive for ligamentous and meniscal damage but less specific. When the differential

diagnosis for acute knee pain includes an exacerbation of osteoarthritis, clinical features (age >50 years, morning stiffness <30 minutes, crepitus, or bony enlargement) are 89% sensitive and 88% specific for underlying chronic arthritis. Adding plain films improves sensitivity slightly but not specificity. Plain films for pseudogout are not sensitive or specific, according to limited-quality studies [9].

The prevalence of pain as a reason for seeing a physician in primary care. We also performed an analysis of the localization, duration and frequency of pains, as well as the diagnoses of patients having pain. A total of 28 physicians at 25 health centers in Finland collected the data, comprising 5646 patient visits. Pain was identified as the reason for 2237 (40%) of the visits. The most common localizations were in the lower back, abdomen and head. One-fifth of the pain patients had experienced pain for over six months. Analysis of the diagnoses revealed half of the pains to be musculoskeletal. Patients experienced considerable limitations in various activities of life due to pain. A quarter of the pain patients of active working age received sick leave. Our results confirm that pain is a major primary health care problem, which has an enormous impact on public health [10].

Retrospective cohort epidemiology study. Female basketball, soccer, and volleyball players (N = 546) were recruited from a single county public school

district in Kentucky consisting of 5 middle schools and 4 high schools. A total of 357 multisport and 189 single-sport (66 basketball, 57 soccer, and 66 volleyball) athlete subjects were included due to their diagnosis of patellofemoral pain (PFP) on physical exam. Testing consisted of a standardized history and physician-administered physical examination to determine the presence of PFP. This study compared self-reported multisport athletes with sport-specialized athletes participating in only 1 sport. The sports-participation data were normalized by sport season, with each sport accounting for 1 season of exposure. Incidence rate ratios and 95% confidence intervals (CI) were calculated and used to determine significant differences between athletes who specialized in sport in early youth and multisport athletes [11].

Specialization in a single sport increased the relative risk of PFP incidence 1.5-fold (95% CI 1.0–2.2,  $P = .038$ ) for cumulative PFP diagnoses. Specific diagnoses such as Sinding Larsen Johansson/patellar tendinopathy (95% CI 1.5–10.1,  $P = .005$ ) and Osgood Schlatter disease (95% CI 1.5–10.1,  $P = .005$ ) demonstrated a 4-fold greater relative risk in single-sport compared with multisport athletes. Incidence of other specific PFP diagnoses such as fat pad, plica, trauma, pes anserine bursitis, and iliotibial-band tendonitis was not different between single-sport and multisport participants ( $P > .05$ ).<sup>11</sup>

**Table (1) Results from Sequencing Studies.**

Diagnosis	Authors	Design	Population	Main Results
<b>Osteoarthritis</b>	Peat et al .(2001)	Narrative review.	Findings from UK studies were summarised with reference to European and international studies.	During a one year period 25% of people over 55 years have a persistent episode of knee pain, of whom about one in six in the UK and the Netherlands consult their general practitioner about it in the same time period. The prevalence of painful disabling knee osteoarthritis in people over 55 years is 10%, of whom one quarter are severely disabled.
<b>internal derangements of the knee</b>	Crawford et al (2007) <sup>8</sup>	a systematic review of MRI and arthroscopy in the diagnosis	Coleman scoring methodology	MRI is highly accurate in diagnosing meniscal and anterior cruciate ligament (ACL) tears. It is the most appropriate screening tool before therapeutic arthroscopy. It is preferable to diagnostic arthroscopy in most patients because it avoids the surgical risks of arthroscopy. The results of MRI differ for medial and lateral meniscus and ACL, with only 85% accuracy.

<b>acute knee pain: fractures, meniscal or ligamentous injuries</b>	Jackson et al (2003) <sup>9</sup>	peer-reviewed studies of decision rules for fractures.	MEDLINE search from 1966 to October 2002	Among the 5 decision rules for deciding when to use plain films in knee fractures, the Ottawa knee rules (injury due to trauma and age >55 years, tenderness at the head of the fibula or the patella, inability to bear weight for 4 steps, or inability to flex the knee to 90 degrees) have the strongest supporting evidence. When the history suggests a potential meniscal or ligamentous injury, the physical examination is moderately sensitive (meniscus, 87%; anterior cruciate ligament, 74%; and posterior cruciate ligament, 81%) and specific (meniscus, 92%; anterior cruciate ligament, 95%; and posterior cruciate ligament, 95%). The Lachman test is more sensitive and specific for ligamentous tears than is the drawer sign. For meniscal tears, joint line tenderness is sensitive (75%) but not specific (27%), while the McMurray test is specific (97%) but not sensitive (52%). Compared with the physical examination, MRI is more sensitive for ligamentous and meniscal damage but less specific. When the differential diagnosis for acute knee pain includes an exacerbation of osteoarthritis, clinical features (age >50 years, morning stiffness <30 minutes, crepitus, or bony enlargement) are 89% sensitive and 88% specific for underlying chronic arthritis. Adding plain films improves sensitivity slightly but not specificity. Plain films for pseudogout are not sensitive or specific, according to limited-quality studies.
<b>prevalence of pain as a reason for seeing a physician in primary care.</b>	Pekka et al (2001) <sup>10</sup>	Follow up case report	A total of 28 physicians at 25 health centers in Finland collected the data, comprising 5646 patient visits	Pain was identified as the reason for 2237 (40%) of the visits. The most common localizations were in the lower back, abdomen and head. One-fifth of the pain patients had experienced pain for over six months. Analysis of the diagnoses revealed half of the pains to be musculoskeletal. Patients experienced considerable limitations in various activities of life due to pain. A quarter of the pain patients of active working age received sick leave. Our results confirm that pain is a major primary health care problem, which has an enormous impact on public health.
<b>anterior knee pain patellofemoral pain</b>	Randon et al (2015) <sup>11</sup>	Retrospective cohort epidemiology study.	Female basketball, soccer, and volleyball players (N = 546) were recruited from a single county public school district in Kentucky consisting of 5 middle schools and 4 high schools	Specialization in a single sport increased the relative risk of PFP incidence 1.5-fold (95% CI 1.0–2.2, $P = .038$ ) for cumulative PFP diagnoses. Specific diagnoses such as Sinding Larsen Johansson/patellar tendinopathy (95% CI 1.5–10.1, $P = .005$ ) and Osgood Schlatter disease (95% CI 1.5–10.1, $P = .005$ ) demonstrated a 4-fold greater relative risk in single-sport compared with multisport athletes. Incidence of other specific PFP diagnoses such as fat pad, plica, trauma, pes anserine bursitis, and iliotibial-band tendonitis was not different between single-sport and multisport participants ( $P > .05$ )

## DISCUSSION:

These data show that osteoarthritis is the single most common cause of disability in older adults, and most patients with the condition will be managed in the community and primary care. A literature search identified studies of incidence and prevalence of knee pain, disability, and radiographic osteoarthritis in the general population, and data related to primary care consultations.

MRI is able to detect most internal derangements of the knee efficiently. MRI has a higher specificity (i.e. correctly identifies the absence of an internal derangement of the knee) than sensitivity (i.e. accurately identifying an internal derangement of the knee).

A careful physical examination should be sufficient

to decide whether to refer patients with potential meniscal and ligament injuries, and we prefer clinical criteria rather than plain films for evaluating osteoarthritis. We do not recommend using plain films to diagnose pseudogout.

Osteoarthritis is a major cause of disability in both the developed and developing world. With the population aging, the prevalence of osteoarthritis is increasing and its consequences are impacting significantly on society. This is one of the reasons why osteoarthritis has been adopted as a major focus (along with osteoporosis, rheumatoid arthritis, back pain, and musculoskeletal trauma) by the global initiative—the Decade of Bone and Joint Disease. Adequate studies on the costs of osteoarthritis are urgently required so that cogent arguments can be made to governments to appropriately fund

prevention and treatment programs for this condition. Its recognition as a major cause of disability, particularly in the aging population, should increase community focus on this important condition.

Early sport specialization in female adolescents is associated with increased risk of anterior knee-pain disorders including PFP, Osgood Schlatter, Sinding Larsen-Johansson compared with multisport athletes.

### CONCLUSIONS:

Knee osteoarthritis sufficiently severe to consider joint replacement represents a minority of all knee pain and disability suffered by older people. Healthcare provision in primary care needs to focus on this broader group to impact on community levels of pain and disability. Patients experienced considerable limitations in various activities of life due to pain. A quarter of the pain patients of active working age received sick leave. Our results confirm that pain is a major primary health care problem, which has an enormous impact on public health

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