



# Prevalence of Orthopedic Problems in Medical Staff in KSA

Manal Abdulaziz Murad <sup>1</sup>, Ahmed Abdulilah Alabdali <sup>2</sup>, Hoda Jehad Abousada <sup>3</sup>, Riyadh Tawfeeq AlMalki <sup>4</sup>, Alanoud Abdullah Alharbi <sup>5</sup>, Abdulbari Hamoud Albalawi <sup>6</sup>, Ahmed Abdulqader Alzahrani <sup>7</sup>, Jassim Mubarak Aljassim <sup>8</sup>

<sup>1</sup>Assistant Professor of Family Medicine, Consultant Family Medicine, Family Medicine Department, King Abdulaziz University, Jeddah, Mmurad@kau.edu.sa

<sup>2</sup>Senior Registrar Orthopedic Surgery, King Fahad General Hospital, MBBS, Saudi, Arabian Board of Orthopedics, Jeddah, KSA, Alabdali.ahmed@gmail.com

<sup>3</sup>Corresponding author: KSA (Postal Address: Jeddah, 22338, email: dr.huda1992@outlook.com)

<sup>4</sup>IBN SINA NATIONAL COLLEGE, MBBS (Intern), King Fahad General Hospital, Jeddah, KSA, Rtwm.dr20@gmail.com

<sup>5</sup>General Practitioner (MD) at King Fahad Specialist Hospital (KFSH), Qassim, KSA, Alanoud.alwahbi@gmail.com

<sup>6</sup>Intern, MBBS (Intern), Hail General Hospital, Hail, KSA; Abodi12358@gmail.com

<sup>7</sup>Orthopedic Surgery Resident (MD), East Jeddah Hospital, Jeddah, KSA; aalzahrani621@moh.gov.as

<sup>8</sup>Emergency Physician (MD), Qatif Central Hospital, Qatif, KSA; Dr.jas22@gmail.com

Corresponding author: Huda Abousada; *Email: dr.huda1992@outlook.com*

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## Abstract

Among most Medical staff the orthopaedic complaint is very common and, in this research, we focused on the overall Prevalence of orthopaedic disorders among Medical workers, orthopaedic conditions differences between genders and educational levels. Then we overviewed the rates of orthopaedic diseases in different age groups in the general population. These study participants were Medical workers from Saudi Arabia and the results may not be applied to different settings due to differences in facilities and work conditions.

**Keyword:** *Orthopaedic conditions, Medical staff.*

## Introduction

When you're a medical or paramedical professional, you face many issues more than your salary and work exhaustion. This is related to the nature of your job, e.g. if you are a surgeon you are highly likely to encounter back problems more than any other injuries. This is different from person to person depending on it is work, heavy vs light, sedentary vs mobile. One of the most common problems among health care staff is orthopaedic issues. Even it happens more than any other problems. In this article we will take about the orthopaedic medicine itself, the most Common orthopaedic disorders that health care staff most likely to has, and we discuss the prevalence cause among each of them based on their gender, age, and nature of work.

We start from the word orthopaedic itself, it is from Latin language composed of two words, the first is ortho which means to

repair in English, predict comes from paediatrics which means children in English. This name was given because the first trials to deal with orthopaedic diseases were on children to repair their deformed bones after fractures.

Orthopaedics is the medical specialty that focuses on injuries as well as diseases (autoimmune, infections) of your body's musculoskeletal system. This complex system, which includes your bones, joints, ligaments, tendons, muscles, and nerves, allows you to move, work, and be active.

**Orthopaedic Disorders.** Anything that is concerned with muscles, ligaments and joints is considered orthopaedic. Disorders are ailments, injuries or diseases that cause knee problems, whiplash, dislocated shoulder, torn cartilages, foot pain and fibromyalgia. These are only a few of the known orthopaedic disorders.

Orthopaedists now care for patients of all ages, from newborns with clubfeet to young athletes requiring arthroscopic surgery to older people with arthritis. And anybody can break a bone. Usually the orthopaedic is medico surgical speciality, in which the doctor uses medicines and drugs to treat inflammation and infections in bones, tendons, ligaments and muscles. And many times, it is required to do surgical interventions in different diseases and location of different lesions such as, repairing a fractured bone, implants bony graft, excise a bony tumour or repair vascular and skeletal damage after trauma.

Now in modern health care settings, the skeletal problems are very common it is related to what do you do in your work settings it is ranged from knee pain to osteoarthritis, simple muscle spasms to cervical disc or lumbar disc. Orthopaedic problems are important to confine to a special angle with the medical staff, because they suffer from practical stress and daily efforts unlike others, perhaps the large number of people who suffer from certain diseases, and may stand long, and also some repeated operations that surgeons may use their hands continuously And in a special position, it may increase the risk of orthopaedic medical staff. Therefore, the prevalence of these was highlighted to know the relationship between practical stress and the increase of these diseases.

This research will add to other research many of the perspectives that must be taken into consideration due to the health staff and the exhausting physical effort exerted and puts him at risk of developing orthopaedic problems.

Many medical specialties in which doctors need constant movement and chronic fatigue, or rely on a specific condition during an operation. Therefore, the increase in the educational level may be related to the increase in effort and pressure, which leads to an increase in the percentage of people with various orthopaedic problems. Once devoted to the care of children with spine and limb deformities,

## **Methodology**

### **Study design**

This is an analytical cross-sectional study.

### **Study Setting and period**

This is an analytical cross-sectional study conducted in kingdom of Saudi Arabia (General population and orthopaedic patient), from 11/7/2020 till 19/10/2020.

**Inclusion criteria;** General population and orthopaedic patient.

**Exclusion criteria;** None

### **Sampling method**

The study will be carried out by questionnaire.

### **Sampling size**

Sample size will be calculated using Open Epi for sample size calculation for cross sectional symptom chosen by those who experienced complications of bariatric surgeries.

## **Literature review**

Here we will revise some international studies to give an overview of the previous data and results on the orthopaedic conditions in different situations.

There is a strong relationship between your age and the orthopaedic conditions you may encounter, this percentage are international from recent studies, they concluded as following:

Approximately 8% of all persons reporting musculoskeletal diseases in MEPS for the years 2009 to 2011 are under the age of 18 years. Nearly one in four (24.5%) musculoskeletal diseases occurs in persons age 65 years and older. Almost 40% of musculoskeletal diseases occur among persons age 45 to 64 years. Overall, more than 75% of musculoskeletal diseases are reported by persons under the age of 65 years.

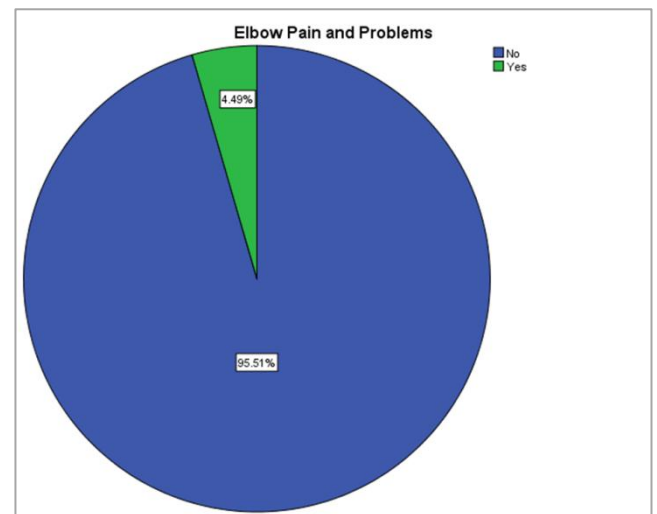
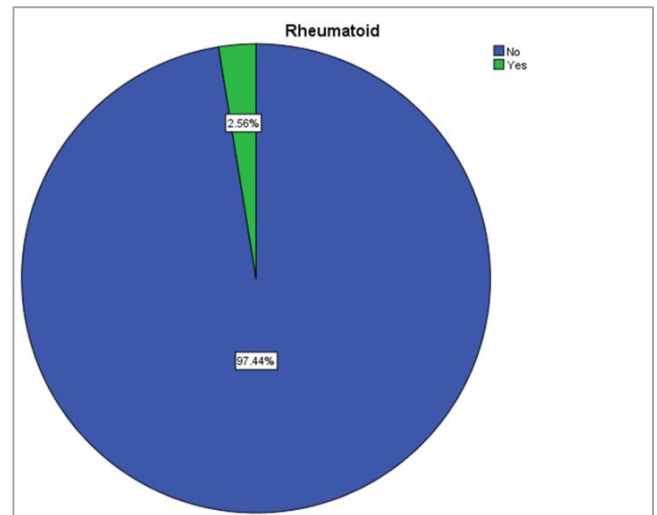
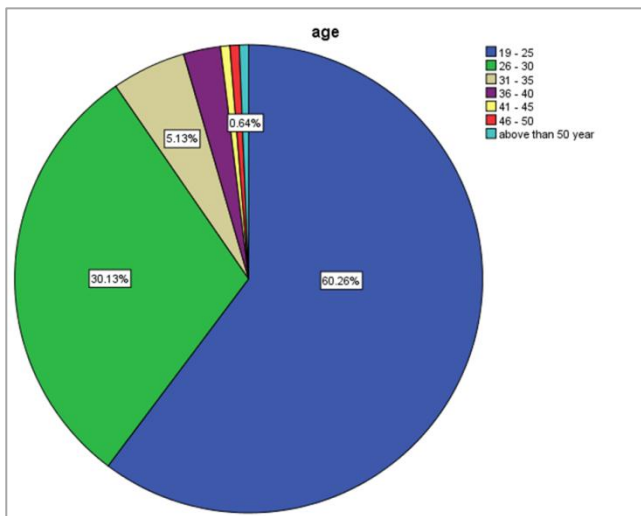
The fastest rate of growth in musculoskeletal diseases between 1996 and 2011, by age group, was among persons age 45 to 64 years.

From these numbers one can say, increased age is not risk factor for orthopaedic disorders as we saw the majority of diseases were in younger age and the increase of age was not associated with increase in incidence of orthopaedic conditions (1). In this study which was conducted in Europe we can see the difference between men and women in the Different orthopaedic conditions, the results of this study showed that prevalence rates of musculoskeletal pain were higher for women than for men in the Dutch general population aged 25 to 64 years on the basis of 2 population-based surveys. For musculoskeletal pain in any location, 39% of men and 45% of women reported chronic complaints. Highest female predominance was found for the hip and wrist/hand, whereas lowest and not statistically significant sex differences were found for the lower back and knee. So, women and men are different in sites and types of orthopaedic diseases (2). When talking about the rates of orthopaedic conditions among health care workers, we revise a study from Saudi Arabia that said, nearly 85% of the nurses reported experiencing at least one musculoskeletal symptom. Musculoskeletal symptoms occurred most commonly in the lower back (65.7%), ankles and feet (41.5%), and shoulders (29%). Prolonged working hours and being underweight were significantly associated with the development of these symptoms). Working in the surgical department was a greater risk factor for low back pain compared with working in other departments. WMSDs are common among our nurses, and back pain is the most common symptom. This was conducted among nurses in health care centre in Jeddah (3). There is a known relationship between patients' education and the occurrence of orthopaedic conditions as this systematic review concluded that the implementation of patient education has positive impacts upon patient satisfaction especially in managing pain. This review will look specifically at the effectiveness of orthopaedic patient education for length of stay, satisfaction, pain level, cost of care, functional ability, knowledge, anxiety, and quality of life (4). Calcium deficiency is not uncommon as it is common to eat calcium deficient food as this study said about worldwide calcium deficiency rates, in 2011, 3.5 and 1.1 billion people were at risk of calcium (Ca) deficiency respectively due to inadequate dietary supply. The global mean dietary supply of Ca in 2011 was  $684 \pm 211$  and  $16 \pm 3$  mg capita<sup>-1</sup> d<sup>-1</sup> ( $\pm$ SD) respectively. Between 1992 and 2011, global risk of deficiency of Ca decreased from 76 to 51%. Approximately 90% of those at risk of Ca in 2011 were in Africa and Asia. To our knowledge, these are the first global estimates of dietary Ca deficiency risks based on food supply, although calcium deficiency rates is decreasing it is still common worldwide (5). Finally, we can say that vitamin d deficiency is no rare and according to Medscape studies the rates were: Similar rates of vitamin D deficiency have been reported in Europe [26] and Canada. A greater prevalence of vitamin D

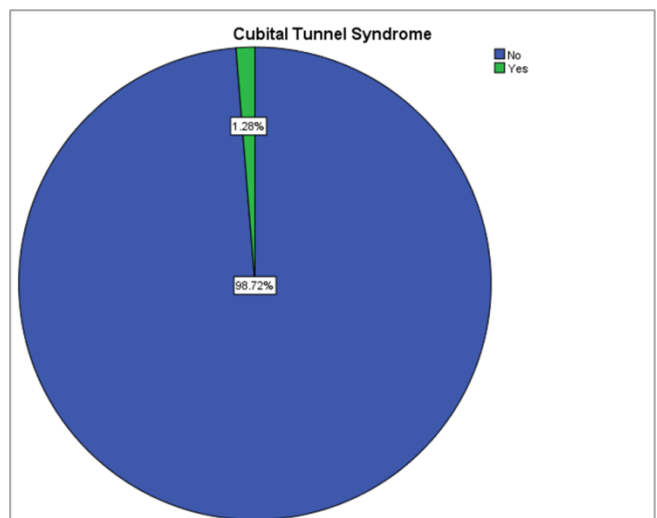
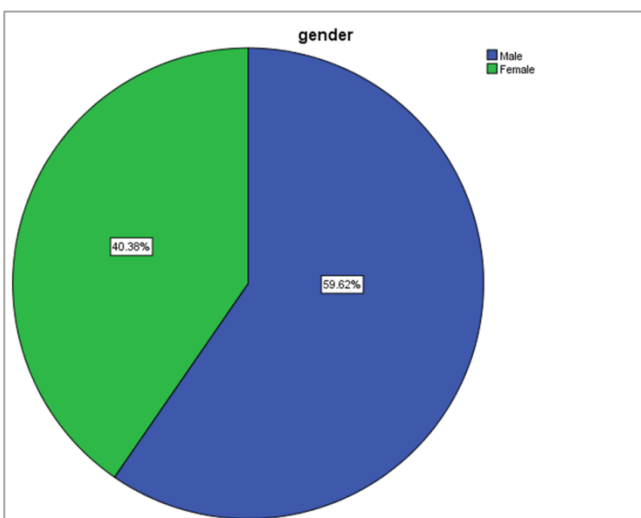
deficiency exists in Middle Eastern countries. A study of 316 young adults aged 30-50 years from the Middle East showed that 72.8% had 25(OH)D values of less than 15 ng/dL (that is, severely deficient). This was significantly more common in women than in men (83.9% vs 48.5%, respectively). The difference between sexes probably reflects the cultural and religious practices leading to less skin exposure in women than in men (6)

**Results**

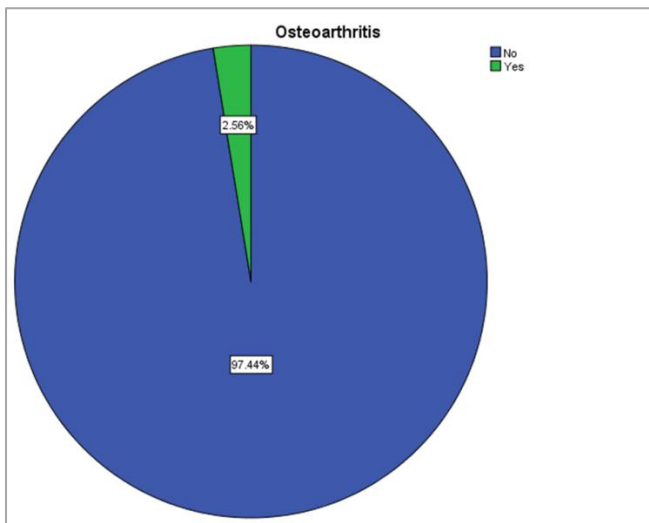
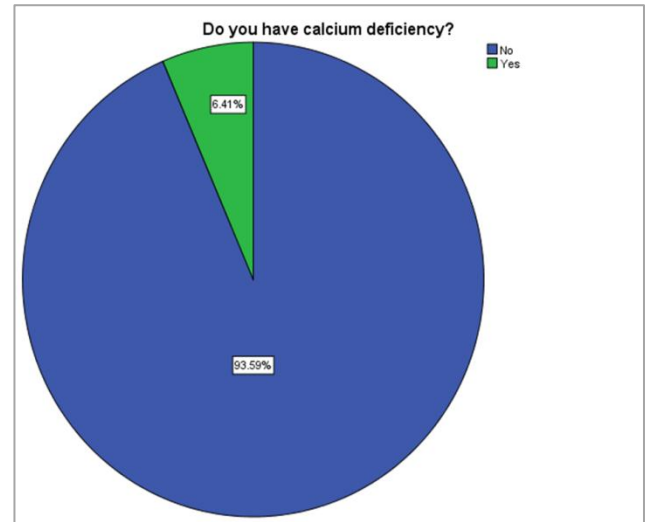
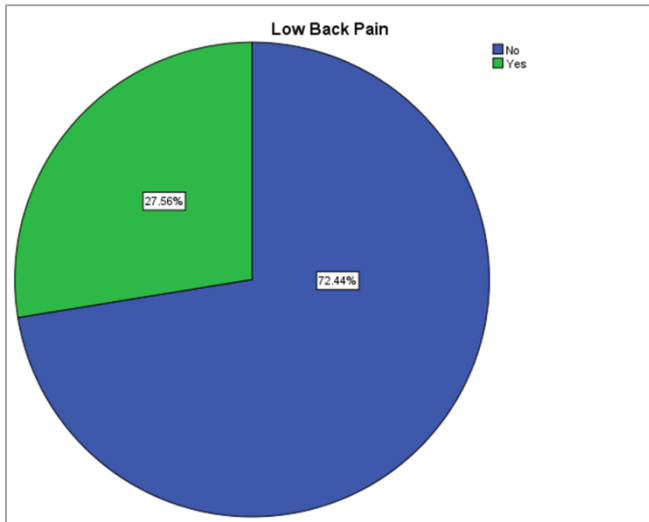
1. In relation between age and the occurrence of orthopaedic disorders as shown in this pie chart. we conclude that orthopaedic surgery occurs more frequently in elderly, as from the 161 participants, we see the majority of orthopaedic conditions reported more frequently in age group above 50 years representative of 60.26%.



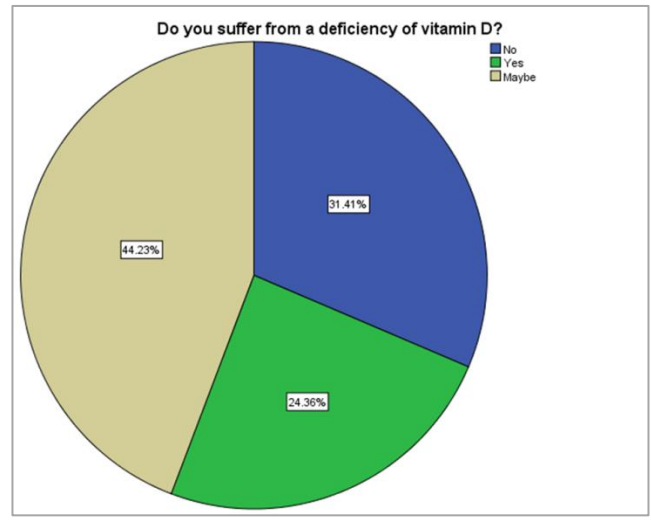
2. From this figure which represents the prevalence of orthopaedic conditions in both men and women study participants. We found that orthopaedic conditions are likely to occur in men more than women among study participants. As among the 161 participants 59.62% of whom reported orthopaedic conditions were men while the rest were females.



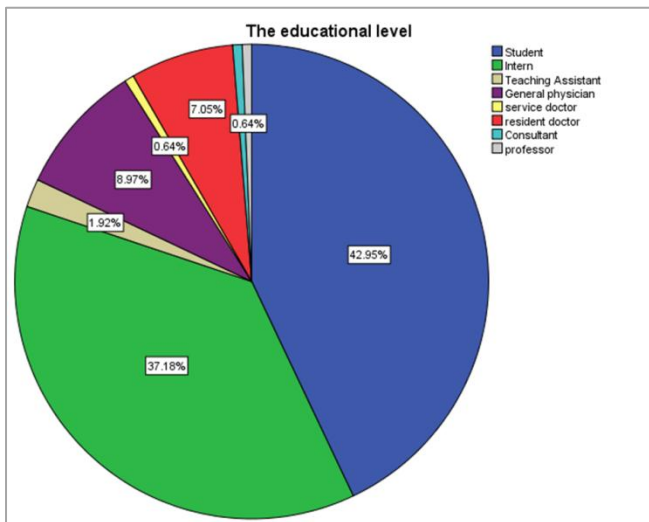
3. These charts represent the prevalence of many common orthopaedic conditions among the study participants, the summation of all participants who answered yes to each disease represents only 11% of the study participants,



6. We represent in this chart the status of vitamin D deficiency among study participants as we found 24.36% have this vitamin deficient, while 44.23% may have deficiency. This is a high percentage in Medical workers.



4. This figure shows the prevalence of orthopaedic conditions in each different educational level, we found the highly affected group were Medical students representing 42.95% followed by the intern of 37.18%. from this as the education level increases the occurrence of orthopaedic diseases decreases.



5. This figure tells that 6.41% of the participants answered yes to have calcium deficiency and the rest of them was negative to calcium deficiency.

**Discussion**

When discussing our findings, orthopaedic conditions were common among Medical workers in their different works and positions, doctors in the residency program were the most frequent to encounter orthopaedic conditions, overall 11% of Medical workers had orthopaedic conditions in their career, if taking calcium deficiency and vitamin d deficiency as risk factors of orthopaedic conditions like bone pain, we found that 6.4% have calcium deficiency and 24% have vitamin d deficiency, this may be related to unhealthy lifestyle and deficient diet.

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None

**Conflict of interest**

None

**Data availability**

None

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