

## ORIGINAL ARTICLE

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**Evaluating the patient profile of orthopedic outpatient clinic in a state hospital providing secondary health care** **Deniz Gul***Bursa Kestel State Hospital, Department of Orthopedics Surgery, Bursa, Turkey*

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**Abstract**

This study aimed to guide the efforts to improve the efficiency of healthcare by revealing the demographic data and disease profile of patients applying to a state hospital which was the only secondary healthcare institution in a region, and which had only one orthopedic specialist. The study included the patients who applied to the Orthopedics and Traumatology outpatient clinic of the state hospital in Kestel District Town of Bursa Province in Turkey in the 1 March 2019-29 February 2020 period. The ages, genders, complaints, diagnoses, involved body parts of the patients admitted during this period as well as treatment modalities used were given in tables and figures. A total of 13,397 patients who applied to the Orthopedics and Traumatology Department with various complaints were included in the present study. Of all patients, 4,469 were men (33.3%) and 8,928 were women (66.6%). It was revealed that 4,984 patients (37.2%) applied to a primary healthcare institution first for their current complaints whereas 8,413 patients (62.8%) used the Orthopedics and Traumatology Outpatient Clinic as a primary healthcare center. The most common complaint to apply the outpatient clinic involved knee (39%) followed by foot-ankle (16%) and hand-wrist (12%). The most common diagnoses made for the patients who applied during the study period were arthritis (30%), tendinopathy/enthesopathy (16.6%), and soft tissue injuries (15.7%). Primary healthcare examinations were requested for most patients, and only a small percentage of patients needed secondary healthcare examinations. A high percentage of patients were treated in our secondary healthcare center and very few of the patients were referred to tertiary healthcare institutions. There is a considerable patient density in health institutions in Turkey. Especially orthopedic physicians in secondary healthcare institutions have a high number and variety of patients. There is a need to improve health policies in this regard.

**Keywords:** Demography, distribution, orthopedic patients, out-patient clinic.**Introduction**

State hospitals in Turkey are secondary healthcare institutions in the organization of health services where patients apply for various complaints and get diagnoses and treatments and where patients are referred to the tertiary healthcare centers [1-3]. State hospitals, which serve as bridges between the primary and tertiary institutions, have a major role in protecting and strengthening of public health. In Turkey, family medicine has been integrated into the health system in 2003 with the Health Transformation Program to ensure that the number of patients per specialist medical practitioners in public hospitals is optimized and the public receives better quality service [4,5]. Despite the steps taken and the efforts made in this regard, health care institutions

that provide secondary and tertiary healthcare services are still used as the first application center, and, therefore, the number of patients and workload cannot be reduced in these centers. Unfortunately, the number of patients admitted to specialist physicians, and their workload is increasing day by day, and the quality of healthcare provided decreases accordingly [6].

Orthopedics and Traumatology is one of the specialization areas with a five-year residency training program, but the discipline has a wide patient profile in Turkey. In addition to degenerative problems in the locomotor system, Orthopedics and Traumatology have a wide range of diseases including traumatological conditions. As in all surgical branches, orthopedic physicians also work at a tiring pace in the triangle of surgery, outpatient clinic, and night shifts.

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The present study aimed to guide the efforts to improve efficiency in a state hospital which was the only secondary healthcare

center in the Kestel district of Bursa Province in Turkey through examining the demographic characteristics and application reasons of the patients.

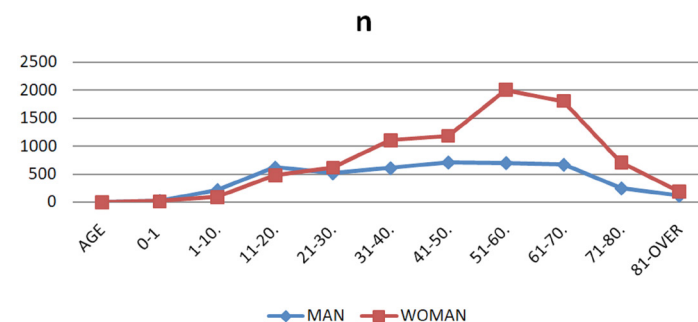
### Material and Methods

The present study included the patients who applied to the Orthopedics and Traumatology Outpatient Clinic of the only State Hospital in District Town of Kestel in Bursa Province of Turkey on 1 March 2019-29 February 2020 period. The region to which the state hospital serves has a temperate climate with an average summer temperature of 27°C and an average winter temperature of 4°C [7]. The patients were first asked whether they applied to a primary healthcare center for their complaints. Afterward, anamneses of the patients were taken, and physical examinations were performed. Primary care examinations such as bilateral X-ray, USG, and blood tests were requested for the patients when needed, and they were evaluated along with anamneses and physical examinations. In suspected cases, MRI, scintigraphy, Doppler USG, and additional blood tests were requested. After multiple records of the same patients were excluded from the study, all patients admitted to the outpatient clinic were included in the study. Information about age, gender, complaint, diagnosis, involved body parts of the patients, and treatment modalities were organized in tables and figures.

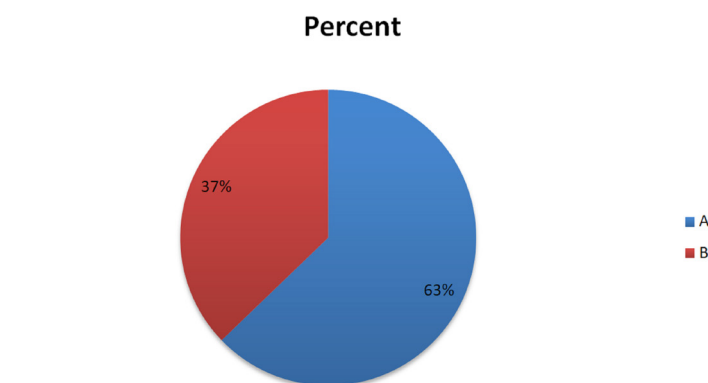
### Results

Records of 17,208 patients applying to Orthopedics and Traumatology Outpatient Clinic on 1 March 2019-29 February 2020 period were studied retrospectively. After multiple records of the same patients were excluded, 13,397 patients (4,469 men, 33.3% and 8,928 women, 66.6%) admitted to Orthopedics and Traumatology outpatient clinic due to various complaints were included in the study. An evaluation of age and gender of the patients showed that the number of men who applied was higher than the number of women until the age of 20 years. After 20 years of age, more women applied to the outpatient clinic, and women's application was twice of men in 30-50 age intervals and three times in 50-70 years age interval (Figure 1). It was revealed that 4,984 of these patients (37.2%) previously applied to a primary healthcare center for their current complaints, while 8,413 patients (62.8%) used our Orthopedics and Traumatology Outpatient Clinic as a primary healthcare center (Figure 2). The most common complaint of the patients for applying the outpatient clinic involved knee (39%), followed by foot-ankle (16%) and hand-wrist complaints (12%). For complaints concerning all body parts, the number of applications in women was higher than in men. Problems related to neck and coccyx areas were more common in women compared to men (88 and 83%, respectively), while complaints involving hip and hand-wrist in men were similar to those in women (Figure 3). The most frequent diagnosis was arthritis (30%), followed by tendinopathy/

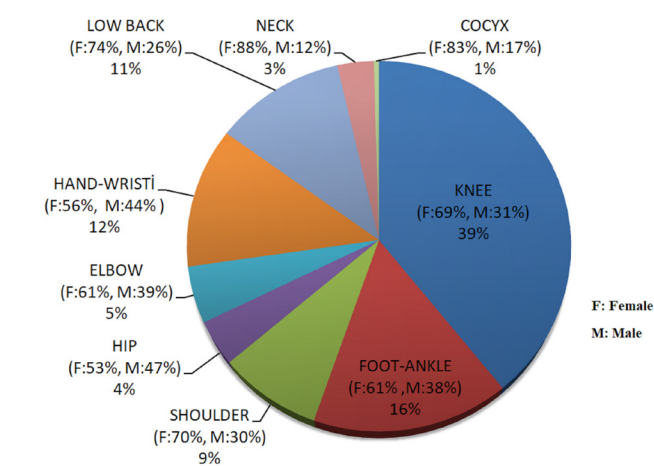
enthesopathy (16.6%) and soft tissue injury (15.7%) (Table 1). Most of the patients needed examinations generally used in primary healthcare service, and only a small percentage of the patients required medical examinations commonly requested during secondary healthcare provision. Treatment of a high percentage of the patients was carried out in the secondary healthcare service, and thus a very small percentage of the patients were referred to tertiary healthcare institutions (Table 2).



**Figure 1.** Age and gender distribution of the patients who applied to out patient clinic.



**Figure 2.** A: The patients who use do ursecondary health care center as a primary health care institution. B: The patients who previously applied to a primary health care center for the ircurrent complaints.



**Figure 3.** Body parts in volved in the complaints of the patients.

**Table 1.** Complaints of the patients who applied to our outpatient clinic

| DIAGNOSIS    |                                                                  | Percent / n          |
|--------------|------------------------------------------------------------------|----------------------|
| 1            | Arthritis                                                        |                      |
|              | Degenerative (27%)<br>Other (rheumatoid arthritis, gut) (3%)     | 30.08 % / 4.139      |
| 2            | Tendinopathy/Enthesopathy/Overuse                                |                      |
|              | Chondromalacia patella -Meniscopathy (4%)                        |                      |
|              | Shoulder RC-impingement (4%)                                     |                      |
|              | Plantar fasciitis Achilles tendonitis (3%)                       |                      |
|              | Tennis elbow (3%)<br>Other (2%)                                  | 16.6% / 2.224        |
| 3            | Soft tissue injuries                                             |                      |
|              | Traumatic (11%)                                                  |                      |
|              | Other (Abscess, hematoma)(4%)                                    | 15.7% / 2.099        |
| 4            | Fractures                                                        |                      |
|              | Upper extremity                                                  |                      |
|              | Lower extremity                                                  |                      |
|              | Vertebra                                                         | 11.1% / 1.489        |
| 5            | Chronic low back-neck pain                                       | 10.8% / 1.456        |
| 6            | Others (Tumor, Avascular necrosis, Metabolic, General body pain) | 9.8% / 1.321         |
| 7            | Unrelated to orthopedics (Thoracic cage injury, Abdominal pains) | 4.9% / 669           |
| <b>TOTAL</b> |                                                                  | <b>100% / 13.397</b> |

**Table 2.** Treatment approaches for the patients who applied to outpatient clinic during the study period.

| Treatment approach                                                                                   | Number (%)     |
|------------------------------------------------------------------------------------------------------|----------------|
| Medicine prescribed based on physical examination and anamnesis                                      | 1.594 (11.9%)  |
| Examinations commonly requested in primary healthcare service such as X-ray, USG, blood tests, EMG   | 11.803 (88.1%) |
| Examinations commonly requested in primary healthcare service such as MRI, scintigraphy, Doppler USG | 1.100 (8.2%)   |
| Referred to a tertiary healthcare institution                                                        | 281 (2.1%)     |

## Discussion

The patients applied to the Orthopedics and Traumatology outpatient clinic of our secondary healthcare center with a wide range of complaints during the study period. Treatments were completed for most patients in our center and only a small number of patients were referred to tertiary healthcare centers. It was found that most patients who came to our center had not visited primary healthcare institutions for their current complaints. In other words, these patients used the Orthopedics and Traumatology outpatient clinic of our institution as a primary healthcare service provider.

A careful examination of the age distribution of the patients showed that the number of patients up to 20 years old were more than women, but women were more often visited our center after

20 years of age compared to men. The reason could be that men suffered more from traumas especially due to their active life and engagement in sports until 20 years and applied to healthcare centers, while women who were less active than men after 20 years of age applied to healthcare centers especially with lower back, neck, and shoulder pain problems compared to men. A considerable increase was observed in the application of women who were older than 50 years of age. Such an increase could be a result of orthopedic complaints related to hormonal changes secondary to menopause in women. Koca et al. [8] expressed that fracture incidence is higher in men compared to women until the fourth decade of life because of high-impact traumas related to sports activities, crushing, and squeezing injuries, while fractures in women are higher than in men after the fourth decade due to menopause and hormonal changes. Thus, the findings of our study are in line with the literature.

In the present study, 63% of the patients used our Orthopedic and Traumatology department, a second healthcare institution, as a primary healthcare center. In most other countries, patients cannot take healthcare services from specialist physicians without first applying to a family care physician [9]. Martin et al. [10] reported that 23% of the patients used specialist physicians for primary healthcare service. In another study carried out in Turkey, Aygöl et al. [6] evaluated the patients who applied to family medicine centers and mentioned that use of secondary and tertiary healthcare institutions as a first application center was one of the major problems of the healthcare system. In the present study, a majority of the patients used the state hospitals, which are secondary healthcare providers, as the primary healthcare centers for orthopedic problems. Such misuse could increase the workload and patient number per specialist physicians, thereby lowering their efficiency in providing healthcare.

The most common complaint of the patients for applying to the outpatient clinic was knee complaints with a 39% rate. Knee problems were common in patients of all ages. Young patients applied to the outpatient clinic with chondromalacia patella and meniscopathy complaints while knee osteoarthritis was the common complaint of older patients for visits to the outpatient clinic. Foot-ankle problems were the second most common complaints of the patients. In general, this area is frequently traumatized, but overuse injuries and degenerative problems could also be observed. Hand-wrist complaints were the third most common complaints of the patients. Again, this is another frequently traumatized area, and overuse injuries and degenerative problems are also common in this area.

Almost one in three patients (30.08%) who applied to the orthopedic outpatient clinic had arthritis complaints. Tendinopathy/enthesopathy/overuse (16.6%) and soft tissue injuries (15.7%) were other major complaints of the patients. There are some discrepancies in studies in the literature regarding the complaints of patients who apply to orthopedic outpatient clinics. Azfar et al. reported that the most common complaint of patients admitted to polyclinic was low back pain (26.8%), followed by tendinopathy/

enthesopathy (18.3%) and arthritis (10.6%) [11]. These results point to a high osteoarthritis incidence in Turkey. As in the whole world, chronic low back pain is common in Turkey. A relatively lower frequency of low back pain in the present study could be because most people with low back pain in Turkey apply to brain surgery outpatient clinics.

We found that the treatment for the great majority of the patients could be completed in our secondary healthcare center, and only very few patients were directed to the tertiary healthcare institutions. This finding showed that public hospitals in Turkey have a good level of competency in terms of medical knowledge and technical capacity. On the other hand, it is known that the patient density of university hospitals, tertiary healthcare institutions in Turkey, is as high as that of public hospitals [12]. Therefore, the patients need to be aware of this issue, and studies are needed to regulate the referring of the patients from the primary healthcare centers to the secondary and tertiary ones.

In conclusion, there is a considerable patient density in health institutions in Turkey. Especially the orthopedic specialists in secondary healthcare institutions have a high number and variety of patients. Thus, there is a need to improve healthcare policies to this end.

#### Conflict of interests

*The authors declare that they have no conflict of interest and any financial disclosures.*

#### Financial Disclosure

*All authors declare no financial support.*

#### Ethical approval

*Ethics committee approval for this article was obtained from 'Health Sciences University Bursa Yüksek İhtisas Training and Research Hospital, with protocol*

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