

A comparative assessment of musculoskeletal diseases in Türkiye in terms of prevalence and the burden of disease

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ABSTRACT

Purpose: The aim of this study was to examine the overall profile of musculoskeletal disorders (MSDs) in Türkiye by evaluating their prevalence, disease burden, related medication use, and major risk factors. **Method:** The most recent reports published by the official authorities of the Republic of Türkiye, including national health surveys, health statistics yearbooks, and prevention and control programs, were reviewed. Data from these sources were assessed together with current national and international studies to compare Türkiye with other countries and to interpret changes over time. **Results:** The reviewed data showed that MSDs constitute a substantial public health burden in Türkiye. In terms of Years Lived with Disability (YLD), back pain ranked first in both sexes, while other MSDs ranked seventh. Türkiye also ranked sixth worldwide in terms of the Disability-Adjusted Life Years (DALY) burden of low back pain. Although some national data indicated a decline in the reported prevalence of back and neck problems in recent years, international findings suggested that differences in assessment methods, healthcare use, and reporting behavior may influence these trends. Medication consumption related to MSDs ranked third among all medication groups. Obesity, tobacco use, physical inactivity, occupational exposure, and population aging were identified as important factors contributing to the burden. **Conclusion:** MSDs remain highly prevalent and disabling in Türkiye. Strengthening national surveillance systems and prioritizing preventive policies targeting modifiable risk factors are essential for reducing this burden.

Keywords: Musculoskeletal disorders, prevalence, risk factors, Türkiye

Türkiye'de kas-iskelet sistemi hastalıklarının prevalans ve hastalık yükü açısından karşılaştırmalı değerlendirmesi

ÖZET

Amaç: Bu çalışmanın amacı, Türkiye'deki kas-iskelet sistemi rahatsızlıklarının (KİSR) yaygınlığı, hastalık yükü, ilişkili ilaç kullanımı ve başlıca risk faktörlerini değerlendirerek Türkiye'nin ulusal profilini ortaya koymaktır. **Yöntem:** Bu çalışmada, Türkiye Cumhuriyeti'nin resmi kurumları tarafından yayımlanan en güncel ulusal sağlık araştırmaları, sağlık istatistikleri yıllıkları ve kas-iskelet sistemi hastalıkları önleme ve kontrol programları incelenmiştir. Bu resmi veriler, güncel ulusal ve uluslararası çalışmalarla birlikte değerlendirilerek Türkiye'nin diğer ülkelerle karşılaştırılması ve zaman içerisindeki değişimlerin yorumlanması amaçlanmıştır. **Bulgular:** İncelenen veriler, KİSR'nin Türkiye'de önemli bir halk sağlığı yükü oluşturduğunu göstermektedir. Engellilikle Yaşanan Yıllar (YLD) açısından bel ağrısı her iki cinsiyette birinci sırada yer alırken, diğer kas-iskelet sistemi rahatsızlıkları yedinci sırada yer almıştır. Engelliliğe Uyarlanmış Yaşam Yılı (DALY) açısından ise Türkiye, bel ağrısı yükünde dünyada altıncı sırada bulunmuştur. Son yıllarda ulusal verilerde bel ve boyun problemlerinin bildirilen yaygınlığında azalma görülmesine rağmen, uluslararası çalışmalar değerlendirme yöntemleri, sağlık hizmeti kullanımı ve bildirim davranışlarındaki farklılıkların bu eğilimleri etkileyebileceğini göstermektedir. KİSR ile ilişkili ilaç tüketimi tüm ilaç grupları arasında üçüncü sırada yer almaktadır. Obezite, tütün kullanımı, fiziksel inaktivite, mesleki maruziyet ve nüfusun yaşlanması hastalık yükünü artıran önemli faktörler olarak belirlenmiştir. **Sonuç:** KİSR, Türkiye'de yaygınlığı ve oluşturduğu engellilik yükü açısından önemli bir halk sağlığı sorunudur. Değiştirilebilir risk faktörlerini hedefleyen koruyucu sağlık politikalarının güçlendirilmesi ve ulusal surveyans sistemlerinin geliştirilmesi, bu yükün azaltılmasına önemli katkı sağlayacaktır.

Anahtar kelimeler: Kas-iskelet sistemi hastalıkları, prevalans, risk faktörleri, Türkiye

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INTRODUCTION

Musculoskeletal disorders (MSDs) include conditions affecting various structures such as muscles, bones, ligaments, tendons, and nerves, and may develop either acutely or progressively over time. MSDs are among the leading causes of disability worldwide, with back pain being the most significant cause of disability in 160 countries. In addition, MSD-related work disability is associated with reduced socioeconomic well-being and decreased labor force productivity.¹

In this context, studies conducted using Global Burden of Disease (GBD) data (since 1990) have generally examined Rheumatoid Arthritis (RA), Osteoarthritis (OA), Low Back Pain, Neck Pain, and Gout individually, while other conditions have been evaluated as other musculoskeletal disorders (OMSDs). These studies assess the overall impact of diseases on individuals and society in terms of health loss and functional limitations. In a study conducted across Middle Eastern and North African (MENA) countries, the most common conditions were low back pain, neck pain, and osteoarthritis, with Türkiye being one of the countries with the highest burden.²

When MSDs are evaluated globally, the number of cases worldwide in 2021 reached 1.686 billion, representing a 95% increase compared to 1990. Although more individuals are affected, the age-adjusted prevalence has slightly decreased, and the annual mortality rate has declined by 0.265%. This suggests that healthcare systems have improved in managing MSDs; however, the growing elderly population remains a risk factor that may increase the total number of cases. Therefore, early diagnosis and lifestyle modifications have become increasingly important in addressing MSDs.³

Focusing specifically on the most common condition, back pain, the prevalence has decreased (11.06%) and the age-standardized burden rate has also decreased (11.2%). However, the absolute number of cases has increased, along with the total disease burden across all age groups. In addition, the gap in the impact of MSDs among individuals with different demographic characteristics has widened, indicating increased inequality in access to healthcare.⁴ Similarly, the group classified as OMSDs worldwide was 221 million in 1990, increased by 123% to 494 million in 2020, and is projected to rise by 115% to 1.06 billion in 2050. In 2020, other MSDs ranked sixth among the leading causes of disability worldwide.⁵

According to GBD data, the incidence of MSDs increases with age, peaks between 64–69 years, and is higher in females.⁵ Education level, socioeconomic status, being a healthcare worker, occupational exposures, high Body Mass Index (BMI), tobacco use,

and low renal function are considered risk factors for MSDs.^{2,6}

Given this global context, examining the national profile of MSDs in Türkiye is of particular importance. The aim of this study was to examine data from national studies and reports conducted in Türkiye and to evaluate the national profile of MSDs in comparison with findings from other countries. In doing so, it provides a comprehensive overview of the available evidence.

METHOD

This study was designed as a narrative review based on national official data sources, supported by relevant current literature. Therefore, no predefined systematic literature search was conducted; instead, national official data were evaluated narratively in light of the relevant current literature. Within the scope of the study, prevalence data from the Turkish Health Survey (TÜİK 2014, 2016, 2019, 2022), disease burden data from the Health Statistics Yearbook (Ministry of Health 2009–2023), and the Musculoskeletal System Diseases Prevention and Control Program (2015–2020, 2021–2026); as well as consumption data for musculoskeletal system medications from the Health Expenditure Statistics (TÜİK 2013–2022) were examined. These data sources were selected due to their official, nationally representative, and up-to-date nature. The GBD data were evaluated using the IHME Global Burden of Disease Results Tool and related reports; no raw data were downloaded, and no independent data analysis was conducted. In addition, studies from the literature comparing different countries (including Türkiye) were reviewed to provide a broader perspective and to evaluate how prevalence and disease burden in Türkiye compare with other countries.

In national and international reports and articles, different indicators such as YLL, YLD, and DALY are used to assess disease burden (Table 1). The Institute for Health Metrics and Evaluation (IHME) GBD Results Tool is an online platform developed by IHME, affiliated with the University of Washington, which provides access to GBD data. Through this platform, indicators such as prevalence, incidence, mortality, and DALYs can be examined by country, region, age, and sex; trends over time (since 1990) can be compared; and data can be downloaded in CSV format. Studies using these data were also included in the analysis. It is also observed that the Ministry of Health's Health Statistics Yearbooks make use of these data (Table 1).⁷

Table 1. Global Burden of Disease Measures

Abbreviation	Calculation	What Does It Measure?	Relationship with MSDs
YLL	Years of life lost due to premature mortality	The burden of fatal diseases	YLL is relatively low for MSDs
YLD	Years lived with disability	The burden of non-fatal diseases and disability	YLD is very high for MSDs
DALY	YLL + YLD	Total disease burden	DALY burden is substantial, mainly driven by YLD

MSDs rank low in YLL due to their low mortality, but high in YLD due to their disabling nature, and represent a substantial burden in DALYs, primarily driven by their impact on quality of life rather than mortality. Comparisons of these indicators for Türkiye with other countries were based on the reviewed reports and studies.

RESULTS

An examination of TÜİK data on musculoskeletal disorders (MSDs) showed that the institution primarily

provided prevalence-based information. TÜİK data on MSDs covered self-reported complaints within the past 12 months among individuals aged 15 years and older, for the period between 2016 and 2022.

When evaluated within the category of major health problems, back disorders were found to have the highest prevalence, decreasing from 29.7% in 2019 to 24.6% in 2022. The prevalence of osteoarthritis (OA) was reported as 11.2% in the most recent assessment (Table 2).⁸⁻⁹

Table 2. Major Health Problems in Individuals Aged 15+ in Years (% , TÜİK)

Years	Low Back Problems	Neck Problems	Arthrosis	Hypertension	Diabetes	Allergy
2014	33%	21.3%	8%	16.1%	9%	12.1%
2016	27% ¹	18.1%	7.7%	15.8%	9.1%	10.8%
2019	29.7%	20.5%	11.2%	16.4%	10.2%	12.3%
2022	24.6%	17.2%	-	16.1%	11.4%	9.6%

An analysis of TÜİK data showed that the prevalence of low back and neck problems increased between 2016 and 2019, and then declined between 2019 and 2022. No recent data on osteoarthritis (OA) were available. However, despite the observed decrease, the 2022 data indicated that approximately one in five individuals still experienced

a back or neck problem (Figure 1).⁸⁻⁹ This trend should be evaluated in conjunction with the decline observed after 2019; potential reasons for this change may include disruptions in access to healthcare and changes in reporting behavior.

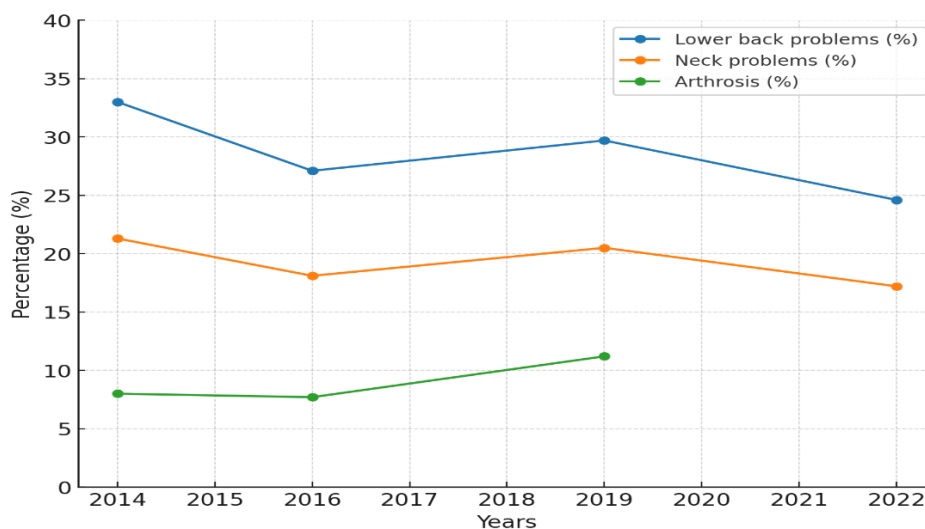


Figure 1. Changes in the prevalence of low back and neck problems and OA over the years according to TÜİK

Considering how TÜİK data were collected, participants were asked whether they had experienced

low back problems (such as low back pain, herniated disc, or other low back conditions) or neck problems

(such as neck pain, cervical disc herniation, or other neck conditions) within the past 12 months, with responses recorded as “Yes/No”.¹⁰ The increase in back and neck problems observed up to 2019 may be associated with aspects of modern life, such as prolonged sitting and physical inactivity. The disruption caused by the COVID-19 period may have contributed to the subsequent decline. Although working from home and reduced physical activity appear to be risk factors that could increase spinal problems during this period, individuals’ reporting behaviors may also have changed. Greater attention to COVID-19, mental health, and general well-being may have led to a relative decrease in the reporting of musculoskeletal complaints.

A study conducted in Germany reported a decrease in diagnoses of low back and neck pain in both general and orthopedic outpatient clinics between 2019 and 2021. When comparing pre-pandemic (2019) and pandemic (2020–2021) data, low back pain (9.3%) and neck pain (12.4%) decreased in general outpatient clinics, while low back pain (5.4%) and neck pain (6.1%) decreased in orthopedic outpatient clinics.¹¹ In the study by Ohana et al., emergency department visits decreased by approximately 30% during the peak of the pandemic (2020) and gradually increased after mid-2021.¹² Although hospital visits decreased, data from online surveys among students receiving home-based education indicate that the pandemic period was associated with increased back and neck pain.¹³ In addition, a social media-based study found that reports of back pain among Twitter users increased during the pandemic, with expressions such as “home office,” “prolonged sitting,” and “lack of exercise” frequently appearing in posts.¹⁴ In the study by Nakazato et al., reports of chronic neck pain doubled after restrictions on going outside were eased, and longer screen use was associated with a higher likelihood of neck pain.¹⁵ A global study published in *The Lancet* reported an increase in the prevalence of low back pain during the pandemic.¹⁶ A study conducted in the United States evaluating the pre-, during-, and post-pandemic periods reported a 23% increase in the prevalence of chronic pain between 2019 and 2023. Factors such as stress, physical inactivity, and social isolation during the COVID-19 pandemic were reported to increase the risk of chronic pain.¹⁷

Taken together, these findings suggest that the observed decrease in clinical diagnoses during the pandemic should be interpreted with caution, particularly considering the decline observed after 2019, as shifts in healthcare utilization and a redirection of attention toward COVID-19 and related health concerns may have influenced reporting patterns.

This pattern may be partly explained by changes in healthcare-seeking and reporting behavior during the

pandemic, as individuals aimed to reduce hospital visits and avoid exposure to the virus. It may also be related to an increased focus on home-based exercise and physical therapy during and after the pandemic. The persistence of a high burden highlights the importance of preventive strategies, early intervention, ergonomic adjustments, and the reduction of modifiable risk factors within national health policies. While TÜİK data indicate a decrease in low back and neck pain in Türkiye in recent years, international studies suggest a more complex pattern, with both decreases in clinical diagnoses and increases in symptom prevalence.^{4,8,9} Similar trends were observed in other countries regarding decreases in low back and neck pain. In national health surveys conducted in Spain between 2006 and 2020, the prevalence of chronic low back pain decreased from 24% to 14.7%, while chronic neck pain decreased from 23.6% to 12.3%.¹⁸ These decreases were observed even without including the pandemic period. In a large-scale study conducted in Germany between 2019 and 2020, the prevalence of back pain was 61.3%, while neck pain was 45.7%. Although a slight downward trend was observed compared to previous years, the prevalence rates remained high.¹⁹

Although the rates reported in other countries appear to be higher than those in Türkiye, differences in assessment methods may influence these results. According to 2022 TÜİK data, the prevalence of back pain among individuals aged 15 and older was 24.6%, whereas Ugwu and Pope reported a prevalence of 47.5% for Türkiye using a methodology consistent with European studies (broad definitions and a focus primarily on the adult population aged 18 and older).²⁰ These findings suggest that, when similar methods are used, prevalence rates in Türkiye may be comparable to those in European countries. This underscores the need for careful interpretation of cross-national comparisons, as differences in measurement methods and age standardization can affect the percentage figures. This indicates that TÜİK data are valuable for monitoring national trends, but methodological consistency is essential for valid international comparisons. Accordingly, age-specific analyses and the use of standardized assessment methods may be critical for obtaining more reliable results in international comparisons.

Regional studies have examined the prevalence of osteoarthritis in Türkiye. In the study by Yeşil et al., the prevalence of knee osteoarthritis (OA)—the most affected site—was reported as 20.9% among individuals over 40 years of age. The prevalence was higher in females. When compared with other countries (USA, Greece, Beijing, Spain, Italy, Shanghai), the prevalence of knee OA was found to be higher. The prevalence of hand and hip osteoarthritis was 2.8% and 1%, respectively. While knee and hand osteoarthritis were more common in females, hip OA

was similar between genders.²¹ According to the TÜİK Health Survey (2019), the prevalence of OA in Türkiye was 11.2%. A global study reported the prevalence of OA in 2020 as 16% worldwide.⁸

In a study including multiple countries, the prevalence of low back pain in Türkiye was reported as 47.5%, which is higher than the European average (44.6%). Lithuania had the highest prevalence of low back pain (67.7%), while Norway had the lowest (33.4%). Türkiye's prevalence was lower than that of countries

such as Germany (54.1%) and Slovenia (60.1%), but higher than that of countries such as France (42.1%) and the UK (37.1%). This comparison provided a clearer perspective on Türkiye's position in an international context beyond single-source assessments. It also highlighted the influence of methodological differences on reported prevalence rates (Figure 2).²⁰

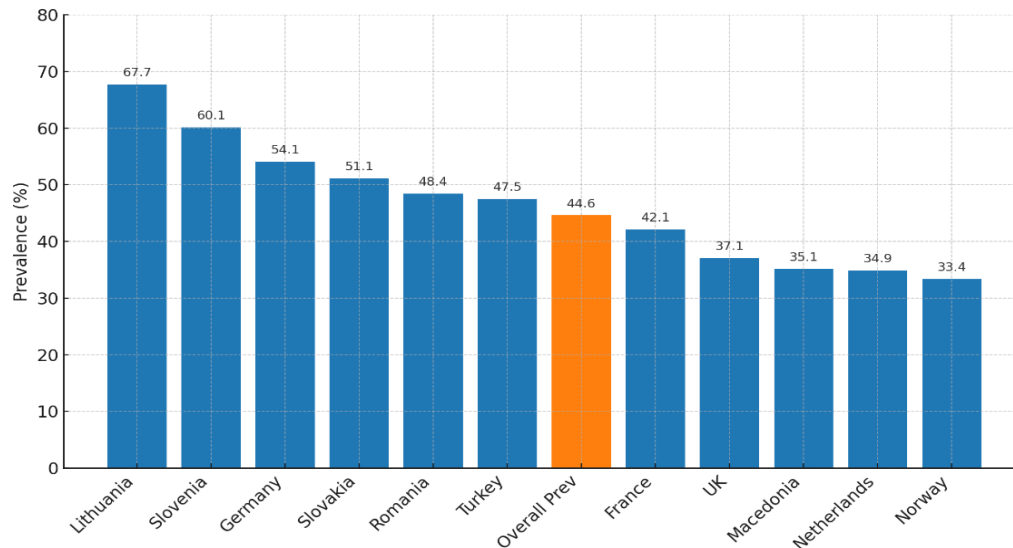


Figure 2. Comparison of the prevalence of low back pain in Türkiye with other countries¹⁰

An examination of the 2023 Health Statistics Yearbook indicated that the evaluation framework primarily focused on disease burden indicators (YLL, YLD, DALY) and was largely based on IHME Global Burden of Disease data. Among the top 10 causes of YLL (predominantly fatal conditions) in Türkiye are

COVID-19, ischemic heart disease, stroke, trachea, bronchus and lung cancers, chronic obstructive pulmonary disease, chronic kidney disease, diabetes, neonatal conditions, traffic injuries, and congenital anomalies; MSDs are not included in this category.²²

Table 3. Musculoskeletal System Burden in Türkiye (YLD, 2002-2021)

Rank (M)	Cause (M)	2002 (M)	2021 (M)	Change % (M)	Rank (F)	Cause (F)	2002 (F)	2021 (F)	Change % (F)
1	Low Back Pain	303.123	402.422	32.76	1	Low Back Pain	336.732	513.478	52.49
2	Depressive Disorders	178.305	277.807	55.80	2	Gynecological Diseases	380.386	513.023	34.87
3	Diabetes	80.278	262.293	226.73	3	Depressive Disorders	331.438	488.693	47.45
4	Age-Related or Other Hearing Losses	134.118	216.923	61.74	4	Headache	298.812	376.884	26.13
5	Anxiety Disorders	144.469	216.329	49.74	5	Anxiety Disorders	220.597	343.023	55.50
6	Headache	158.414	211.697	33.64	6	Diabetes	96.258	298.416	210.02
7	OMSDs	97.842	180.421	84.40	7	OMSDs	149.679	263.549	76.08
8	Oral Disease	112.998	171.042	51.37	8	Neck Pain	166.472	250.904	50.72
9	Blindness and Vision Loss	80.776	122.984	52.25	9	Age-Related or Other Hearing Losses	134.500	216.809	61.20
10	Neonatal Diseases	101.292	105.216	3.87	10	Oral Diseases	119.144	172.014	44.37

IHME Global Burden of Disease 2021. M: Erkek. F: Female

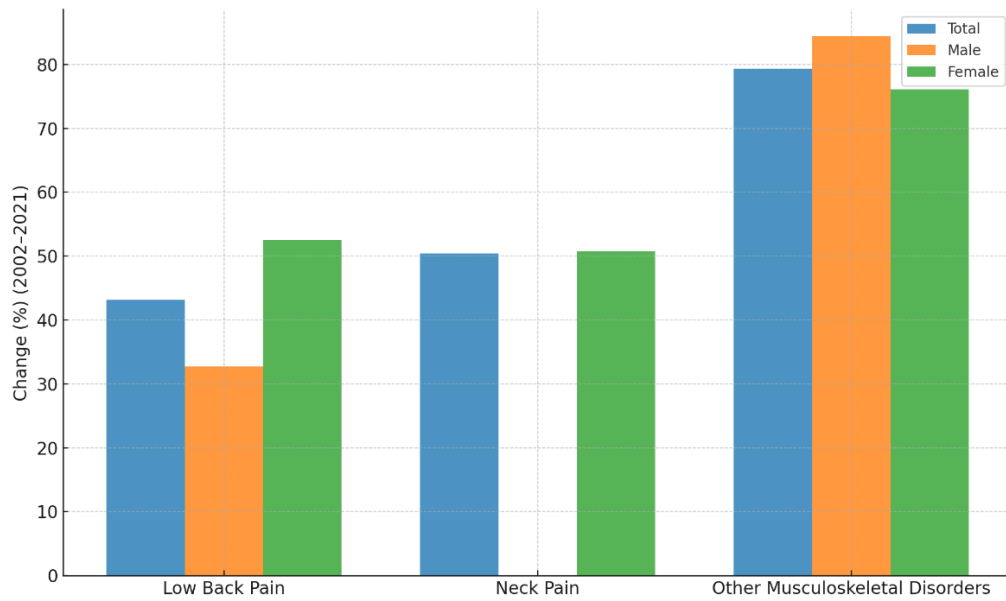


Figure 3. Change in Musculoskeletal Burden in Türkiye (YLD, 2002-2021, IHME Global Burden of Disease Study 2021)

In contrast, MSDs are among the leading contributors to disability burden (YLD) in Türkiye and have shown a marked increase over the past two decades (2002–2021). Back pain ranks first in YLD, with an increase of approximately 33% in males and 52% in females, indicating a greater rise among females. Neck pain increased by approximately 51%, particularly among females, while “other musculoskeletal disorders” increased by around 76% overall, making it the fastest-growing category. Regardless of gender, back pain ranks first in YLD, while other musculoskeletal disorders rank seventh. Neck pain was not reported for males, while it ranks eighth among females (Table 3).²² These findings indicate that although MSDs are not a major cause of mortality, they represent a substantial and increasing burden in terms of disability, highlighting their growing public health importance. In the graph below, data on MSDs are presented. Changes in YLD related to MSDs in Türkiye between 2002 and 2021 indicate that the increase in low back pain is more pronounced in females, although it is observed in both genders. No data on changes in neck pain are available for males. In contrast, “other musculoskeletal disorders” demonstrate the greatest increase across both genders and overall (Figure 3).²²

When the burden of disease of other countries in terms of low back pain was also evaluated, it was observed that the Netherlands and Switzerland had the highest DALY rate. In Türkiye, Brazil, Poland and Russia, low back pain ranked 6th in terms of DALYs (similar DALY burden). For India, this burden ranked 17th. This suggested that while in the Netherlands and Switzerland low back pain was the biggest burden, in India there were other much bigger problems (Table 4).²³ This pattern further reinforced the notion that

MSDs represented a growing non-fatal health burden, particularly among females.

When examining changes in the YLD burden of low back pain, neck pain, and other musculoskeletal disorders over time, preventive musculoskeletal health policies, access to physical therapy, ergonomic practices, and community-based physical activity programs appear to be important in Türkiye.

Table 4. Comparison of DALY burden caused by low back pain by countries

DALY	Countries
1	Netherlands, Switzerland
2	France, Germany, Denmark, Norway, Australia
3	Hungary, Austria, Canada, Belgium, Austria, United Kingdom, United States
4	Croatia, Ireland, Israel, Italy, Portugal, World
5	Spain, Greece, New Zealand
6	Türkiye, Brazil, Poland, Russia
8	Mexico, China
9	Japan
11	Chile
17	India

IHME Global Burden of Disease Study, 2021

The relatively lower DALY burden of back pain compared to European countries does not necessarily indicate a lower prevalence. Indeed, in the study by Yang et al., Türkiye was identified as one of the countries with the highest prevalence of back pain globally.⁴ Although the number of cases increased worldwide, it was reported that the prevalence of MSDs slightly decreased, the age-standardized burden declined, while the total burden increased.⁴ Age-standardized measures are important as they reflect rates adjusted for age distribution and facilitate the evaluation of the impact of population aging. In the study by Al-Ajlouni et al., Türkiye ranked among the

top countries in DALY rankings based on age-standardized measurements for low back pain.² For example, in India, back pain ranked 17th in terms of DALY, as more fatal conditions—such as infectious diseases and factors related to poor living conditions—rank higher in terms of disease burden. In 2021, COVID-19 ranked first globally in terms of DALY burden. The population in Europe is also aging, and the higher proportion of older individuals, along with a higher socio-economic index, may contribute to low back pain representing a greater burden in these countries.²³ Additionally, the fact that lower back pain ranks lower in terms of DALY in Türkiye may also indicate that other conditions have a greater burden.

When examining data from the MENA region, Türkiye appears to be among the countries with a high MSD burden (DALY). In Türkiye, back pain is the most common condition, and between 1990 and 2019, both the prevalence of MSDs and DALY rates increased. Türkiye, Iran, and several Gulf countries had a particularly high burden of MSDs. In contrast, countries such as Afghanistan, Sudan, and Yemen had relatively lower burden levels. For example, Türkiye and Iran carried the highest burden in terms of DALY rates, while the Horn of Africa and some Arab countries remained at lower levels.

This pattern suggests that differences in healthcare systems, lifestyle factors, obesity prevalence, and labor force characteristics may contribute to variations across countries.²

According to the Ministry of Health's Health Statistics Yearbook (2021), analysis of drug consumption based

on the Anatomical Therapeutic Chemical (ATC) classification showed that musculoskeletal system drugs ranked third in total consumption in Türkiye, following cardiovascular and nervous system drugs. The most recent data available on drug consumption was from 2021 (Table 5).²⁴

When examining musculoskeletal disorder data separately, a notable decrease was observed in 2020, followed by a marked increase in 2021 (Figure 4).²⁴

When examining drug consumption data, the sudden increase between 2018 and 2019 is remarkable. At the beginning of 2018, a new arrangement was made, changing the classification of drugs that required a prescription. The sudden increase during this period may be related to the fact that drugs that had previously been available without a prescription began to require a prescription, and drugs that could previously be obtained from pharmacies without being recorded began to be recorded. The sudden decrease between 2019 and 2020 was thought to be related to the decreased visits to the doctor during the pandemic. The increase in the 2021 data occurred during a period when the restrictions during the pandemic were eased, and the real drug burden began to emerge. This data for 2022 was not measured. The medication burden may not be directly correlated with MSDs prevalence. Even if prevalence decreases, per person medication consumption may increase. Additionally, it is noted that these medications also include treatments for acute injuries.

Table 5. Defined Daily Dose (DDD) Per 1,000 People by Years and Selected ATC-1 Groups

ATC-1 Group	2014	2015	2016	2017	2018	2019	2020	2021
Digestive System and Metabolism	224.0	286.2	332.7	340.6	387.4	392.4	417.3	441.6
Cardiovascular System	160.8	165.4	167.4	176.4	187.7	195.1	218.8	221.7
Blood and Blood-forming Organs	118.0	124.4	134.6	144.4	169.3	170.2	152.8	188.1
Respiratory System	87.3	94.3	96.4	99.9	109.0	111.2	108.7	113.0
Nervous System	86.6	91.2	93.8	98.4	101.1	101.5	97.9	98.2
Genito Urinary System and Sex Hormones	53.0	56.4	53.5	68.5	69.9	73.7	74.3	80.9
Musculoskeletal System	59.2	61.6	64.7	62.0	61.6	64.8	58.4	65.1
Systemic Anti-Infectives	41.0	41.9	42.1	37.3	33.3	34.6	27.8	30.0
Systemic Hormonal Preparations (Excluding Sex and Hormones and Insulins)	20.1	19.9	21.3	21.9	24.2	25.7	27.6	29.6

T.C. Ministry of Health. Health Statistics Yearbook. 2021. Defined Daily Dose (DDD). ATC: Anatomical Therapeutic Chemical

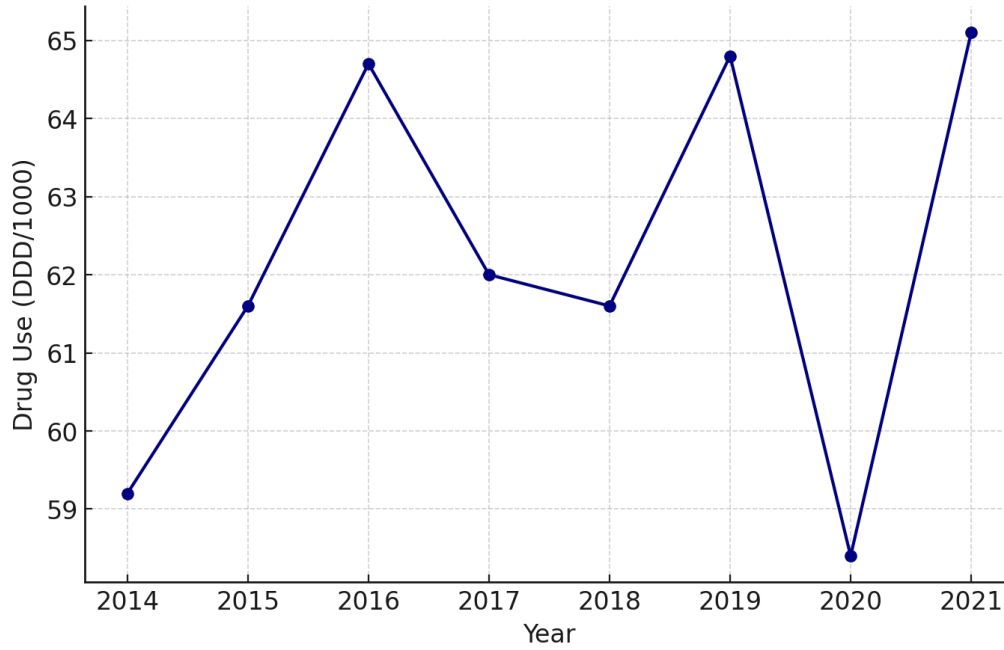


Figure 4. Daily Dose Variation defined for Drugs for Musculoskeletal System over the years (T.C. Ministry of Health, Health Statistics Yearbook, 2021)

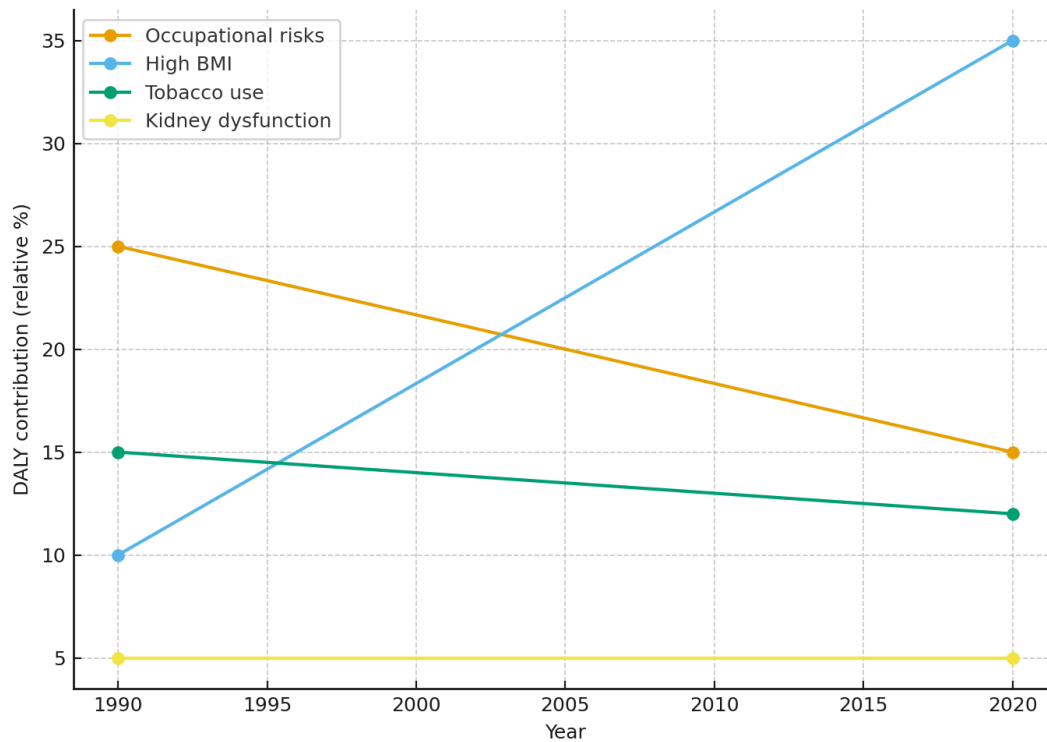


Figure 5. Risk Factors Contributing to MSK Disorders in MENA (1990–2019)¹²

In a study evaluating MENA countries using GBD data, it was found that occupational risks had the largest share in 1990, and BMI became a much bigger risk factor than occupational risks in 2019. This study pointed out what the important risks were in terms of MSDs in Türkiye (Figure 5).²

Studies evaluating risk factors indicated that the contribution of occupational risks to MSDs decreased, while the role of BMI increased. Smoking was a more prominent risk factor among males but showed a decreasing trend, while reduced kidney function

remained a risk factor with a relatively low and stable effect.²

According to TÜİK data, the prevalence of pre-obesity and obesity among individuals aged 15 years and over increased in both males and females between 2008 and 2022. The prevalence of obesity was 20.2% in 2022. The proportion of daily tobacco users increased from 25.4% to 28.3% between 2010 and 2020.⁹ BMI and tobacco use, both important risk factors for MSDs, are relatively high in Türkiye. Therefore, health policies in Türkiye should not be limited to occupational safety alone but should also include strategies targeting obesity, promoting healthy lifestyle behaviors, and expanding the implementation of ergonomic practices. The Musculoskeletal System Diseases Prevention and Control Program for the 2015–2020 period focused on five major disease groups, in addition to back pain, that are highly prevalent and impose a significant burden on public health in Türkiye. These were identified as Rheumatoid Arthritis (RA), Familial Mediterranean Fever (FMF), Behçet's Disease, Ankylosing Spondylitis (AS), and Osteoarthritis (OA).²⁵ This program represented the first systematic policy framework for MSDs in Türkiye and outlined strategies for reducing disease burden, promoting early diagnosis, implementing preventive measures, and strengthening community-based approaches.²⁵

Subsequently, in response to post-pandemic conditions and advancements in digital health services, the program was updated and restructured for the second period under the title Türkiye Musculoskeletal Disorders Prevention and Control Program (2021–2026). While this second report built upon the foundation of the previous program, it introduced new priorities such as digital health solutions, aging-related challenges, and post-pandemic recovery strategies. However, MSDs appear to be less prominently emphasized compared to the first program.²⁶ Therefore, studies focusing on the diseases highlighted in the first program were reviewed to determine prevalence rates and gender distributions. Additionally, it was observed that some diseases not specifically evaluated within the Türkiye context in the first program were instead addressed using global data. This highlights the need for more country-specific epidemiological data to guide evidence-based policy making in Türkiye.

When examining prevalence studies under this heading, the most comprehensive and up-to-date study, which included 4,012 randomly selected adults from 25 provinces, reported the prevalence of RA in Türkiye as 0.89% in females, 0.10% in males, and 0.56% in the overall population. The Black Sea Region was identified as the area with the highest prevalence of RA.²⁷

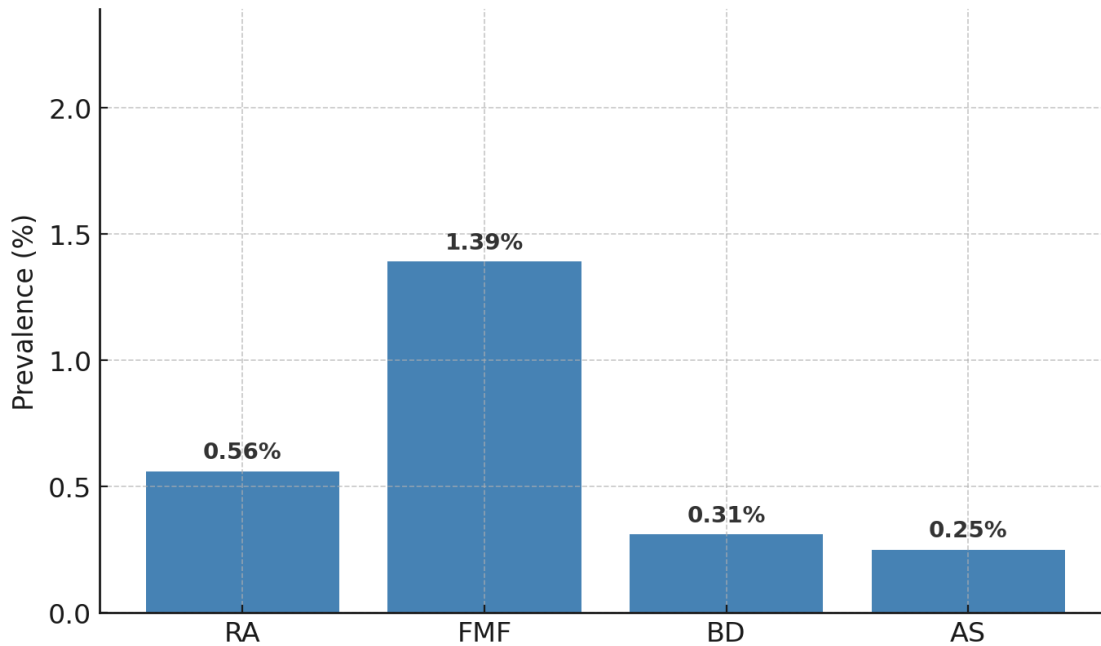


Figure 6. Prevalence of the most prominent MSDs in the Prevention and Control Program for Musculoskeletal Diseases (2015-2020) (RA: Rheumatoid Arthritis, FMF: Familial Mediterranean Fever, BD: Behçet's Disease, AS: Ankylosing Spondylitis)

According to an e-Nabız-based study on Familial Mediterranean Fever (FMF), the prevalence in Türkiye was reported as 1.39%, the incidence as 2.78 per 1,000 person-years, and cases were most frequently observed

in the 15–19 age group. The highest prevalence rates were reported in Ardahan, Bayburt, and Sivas (Northeast Anatolia).²⁸

For Behçet's disease, prevalence was reported as 0.02–0.37 on the official website of the Ministry of Health, and 0.42 in a home-based study conducted in Istanbul.^{29,30} It has been reported that prevalence was lower in the Trakya region, the disease was more common in males, and Türkiye was among the countries with the highest prevalence worldwide.³¹ Regarding Ankylosing Spondylitis, the prevalence of Spondyloarthritis (SpA) was reported as 0.46%, while the prevalence of AS in the Eastern Black Sea region was reported to reach up to 25% in certain regional samples, with a higher prevalence in males (Figure 6).^{27,32}

CONCLUSION

In conclusion, the prevalence and burden of musculoskeletal disorders (MSDs) in Türkiye are considerable, with back and neck pain and osteoarthritis being particularly prominent. MSDs are among the leading causes of disability, highlighting their substantial impact on quality of life despite their low mortality. The COVID-19 pandemic has led to changes in healthcare utilization, reporting behaviors, and lifestyle factors related to MSDs; therefore, these effects should be taken into account when interpreting recent data. Moreover, national data systems such as e-Nabız provide significant potential for generating country-specific epidemiological data. Effective use of these systems will contribute to more accurate monitoring of disease prevalence and burden in the future. Given the increasing burden of MSDs and the growing importance of modifiable risk factors such as obesity and lifestyle, health policies in Türkiye should focus not only on treatment but also on prevention, early diagnosis, promotion of healthy behaviors, and the wider implementation of ergonomic approaches.

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REFERENCES

1. World Health Organization. Musculoskeletal conditions. WHO fact sheets. 2022 Jul 14. Available from: <https://www.who.int/news-room/fact-sheets/detail/musculoskeletal-conditions>

2. Al-Ajlouni YA, Al Ta'ani O, Mushasha R, Lee JL, Capoor J, Kapadia MR, et al. The burden of musculoskeletal disorders in the Middle East and North Africa (MENA) region: a longitudinal analysis from the Global Burden of Disease dataset 1990–2019. *BMC Musculoskelet Disord.* 2023;24(1):439. <https://doi.org/10.1186/s12891-023-06556-x>
3. Liu M, Rong J, An X, Li Y, Min Y, Yuan G, et al. Global, regional, and national burden of musculoskeletal disorders, 1990–2021: an analysis of the global burden of disease study 2021 and forecast to 2035. *Front Public Health.* 2025;13:1562701. <https://doi.org/10.3389/fpubh.2025.1562701>
4. Yang N, Di J, Wang W, Feng H. Global burden of low back pain from 1990 to 2021: a comprehensive analysis of risk factors and trends using the Global Burden of Disease Study 2021. *BMC Public Health.* 2025;25:1886. <https://doi.org/10.1186/s12889-025-23178-1>
5. Gill TK, Mittinty M, March L, Steinmetz J, Culbreth G, GBD 2021 Other Musculoskeletal Disorders Collaborators. Global, regional, and national burden of other musculoskeletal disorders, 1990–2020, and projections to 2050: a systematic analysis of the Global Burden of Disease Study 2021. *Lancet Rheumatol.* 2023;5(11):e670–e682. [https://doi.org/10.1016/S2665-9913\(23\)00232-1](https://doi.org/10.1016/S2665-9913(23)00232-1)
6. Oğuzöncü AF, Kurt O. Musculoskeletal diseases in Türkiye with a public health perspective. *Fırat Univ Med J.* 2020;52-4.
7. Bolat A, Beylik U. Türkiye's global burden of disease and health policy priorities. *Sağlık Akademisyenleri Derg.* 2024;11(3):358-65. <https://doi.org/10.52880/sagakaderg.1484357>
8. Türkiye İstatistik Kurumu. Türkiye Sağlık Araştırması 2019. Available from: <https://data.tuik.gov.tr/Bulten/Index?p=Turkiye-Saglik-Arastirmasi-2019-33661>
9. Türkiye İstatistik Kurumu. Türkiye Sağlık Araştırması 2022. Available from: <https://data.tuik.gov.tr/Bulten/Index?p=Turkiye-Saglik-Arastirmasi-2022-49747>
10. Türkiye İstatistik Kurumu. Türkiye Health Survey Micro Data Set 2022. Available from: <https://www.tuik.gov.tr/media/microdata/pdf/turkiye-saglik-arastirmasi.pdf>
11. Jacob L, Oh H, Smith L, Koyanagi A, Konrad M, Kostev K. Impact of the coronavirus disease 2019 (COVID-19) pandemic on the diagnosis of neck and low back pain in outpatient practices in Germany. *Prev Med Rep.* 2022;31:102096. <https://doi.org/10.1016/j.pmedr.2022.102096>
12. Ohana N, Baruch Y, Tavdi A, Palmanovich E, Benharroch D, Engel I, et al. Retrospective cohort study of fluctuations in emergency department visits for nonspecific back and neck pain during the COVID-19 pandemic. *J Int Med Res.* 2024;52(12):03000605241302010. <https://doi.org/10.1177/03000605241302010>

13. Symazniak C, Gröenfeld A, Gill C, Sonnsman FK, Hoftfiel T, John SM, et al. Back and neck problems as well as disadvantageous ergonomic behavior patterns in university students: concomitants of the pandemic? *Sports Orthop Traumatol*. 2023;39:50-7.
<https://doi.org/10.1016/j.orthtr.2022.11.011>
14. Fiok K, Karwowski W, Gutierrez E, Saeidi M, Aljuaid AM, Davahli MR, et al. A study of the effects of the COVID-19 pandemic on the experience of back pain reported on Twitter® in the United States: a natural language processing approach. *Int J Environ Res Public Health*. 2021;18(9):4543.
<https://doi.org/10.3390/ijerph18094543>
15. Nakazato T, Quezada P, Gutiérrez C, Romani F. Chronic neck pain prevalence before and after COVID-19 restrictions and its relationship with digital device screen viewing: a population study. *Ann Rehabil Med*. 2024;48(2):124-34.
<https://doi.org/10.5535/arm.230030>
16. The Lancet Rheumatology. The global epidemic of low back pain. *Lancet Rheumatol*. 2023;5(6):e305.
[https://doi.org/10.1016/S2665-9913\(23\)00133-9](https://doi.org/10.1016/S2665-9913(23)00133-9)
17. Zajacova A, Grol-Prokopczyk H, Nahin RL. Pain among US adults before, during, and after the COVID-19 pandemic: a study using the 2019 to 2023 National Health Interview Survey. *Pain*. 2025;00(00):1-8.
<https://doi.org/10.1097/j.pain.00000000000003764>
18. Huerta MÁ, Salazar A, Moral-Munoz JA. Trends in chronic neck and low back pain prevalence in Spain (2006–2020): differences by sex, age, and social class. *Eur Spine J*. 2025;34(6):1331-40. doi:10.1007/s00586-025-08676-5
19. Von der Lippe E, Krause L, Porst M, Wengler A, Leddin J, Müller A, et al. BURDEN 2020 study group. Prevalence of back and neck pain in Germany: results from the BURDEN 2020 Burden of Disease Study. *J Health Monit*. 2021;6(Suppl 3):2-14.
<https://doi.org/10.25646/7855>
20. Ugwu CI, Pope D. Quantifying the association between psychological distress and low back pain in urban Europe: a secondary analysis of a large cross-sectional study. *BMJ Open*. 2023;13:e047103.
<https://doi.org/10.1136/bmjopen-2020-047103>
21. Yeşil H, Hepgüler S, Öztürk C, Çapacı K, Yeşil M. Prevalence of symptomatic knee hand and hip osteoarthritis among individuals 40 years or older: a study conducted in İzmir city. *Acta Orthopaedica et Traumatologica Turcica*. 2013;47(4):231-5.
<https://doi.org/10.3944/AOTT.2013.2731>
22. Global Burden of Disease Study 2021, University of Washington Institute for Health Metrics and Evaluation (IHME), 2021. https://ghdx.healthdata.org/gbd-2021/code?utm_source
23. Li Y, Zou C, Guo W, Han F, Fan T, Zang L, et al. Global burden of low back pain and its attributable risk factors from 1990 to 2021: a comprehensive analysis from the Global Burden of Disease Study 2021. *Front Public Health*. 2024;12:1480779.
<https://doi.org/10.3389/fpubh.2024.1480779>
24. Republic of Türkiye Ministry of Health, General Directorate of Health Information Systems. Health Statistics Yearbook 2023. Available from: <https://dosyasb.saglik.gov.tr/Eklenti/50500/0/siy202307032025pdf>.
25. Republic of Türkiye Ministry of Health. Musculoskeletal system diseases prevention and control program (2015–2020). Ankara: Ministry of Health; 2015. (Publication No: 1013). ISBN: 978-975-590-592-1.
26. Republic of Türkiye Ministry of Health. Türkiye Prevention and Control Program for Musculoskeletal Diseases (2021–2026). Ankara: Ministry of Health; 2021.
27. Tuncer T, Gilgil E, Kaçar C, Kurtais Y, Kutlay Ş, Bütün B, et al. Prevalence of rheumatoid arthritis and spondyloarthritis in Türkiye: a nationwide study. *Arch Rheumatol*. 2018;33(2):128-36.
<https://doi.org/10.5606/ArchRheumatol.2018.6480>
28. Satış H, Gül A, Ayan G, Babaoğlu H, Armağan B, Erden A, et al. Prevalence, incidence, and geographic distribution of familial Mediterranean fever in Türkiye: a national cohort study. *Clin Exp Rheumatol*. 2025;43(10):1709-14.
<https://doi.org/10.55563/clinexprheumatol/pzbg88>
29. Republic of Türkiye Ministry of Health, General Directorate of Public Health. Behçet disease. Ankara: Ministry of Health; 2023. Available from: <https://hsgm.saglik.gov.tr/tr/kas-iskelet-sistemi-hastaliklari/behcet-hastaligi.html>
30. Azizlerli G, Akdağ Köse A, Sarica R, Gül A, Tuğal Tutkun İ, Kulaç M, et al. Prevalence of Behçet's disease in İstanbul, Türkiye. *Int J Dermatol*. 2003;42(10):803-6.
<https://doi.org/10.1046/j.1365-4362.2003.01893.x>
31. Pamuk ÖN, Çakır N. Behçet hastalığı epidemiyolojisi [The epidemiology of Behçet's disease]. *Türkiye Klin J Intern Med Sci*. 2005;1(25):3-9.
32. Karkucak M, Çakırbay H, Çapkın E, Topbaş M, Guler M, Tosun M, et al. The prevalence of ankylosing spondylitis in the Eastern Black Sea region of Türkiye. *Eur J Gen Med*. 2011;8(1):40-5.
<https://izlik.org/JA42ER97PS>