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ARAŞTIRMA MAKALESİ / RESEARCH ARTICLE

A RESEARCH TO DETERMINE THE CHANGE IN HEALTH STATUS IN TÜRKİYE BETWEEN 1990-2019*

TÜRKİYE'DE SAĞLIK STATÜSÜNÜN 1990-2019 YILLARI ARASINDAKİ DEĞİŞİMİNİ TESPİT ETMEYE YÖNELİK BİR ARAŞTIRMA

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ABSTRACT

This research aims to analyze trends and changes in health status in Türkiye between 1990 and 2019. In this study, analyzing health status; disability-adjusted-life-years (DALYs-disability-adjusted-life-years), years of life lost due to disability (YLD) and years of life lost due to premature death (YLL) metrics were used. In Türkiye, between 1990 and 2019, age-standardized YLL for all causes decreased by 58.4% (95% UI: 50.9-64.5). While YLD rates decreased by 1.5% (95% UI: 0.99-3.86), DALYs which is the sum of YLL and YLD, decreased by 43.9% (95% UI: 37.5-49.7). 82 % of total deaths from all causes in 2019 were caused by the 20 leading causes of death. Especially ischemic heart disease, stroke, lung cancer, COPD and Alzheimer's diseases constitute approximately 50% of deaths from all causes. Low back pain, depressive disorders, diabetes, and headache are the highest causes of YLD. Tobacco use is the first risk factor in men and the fourth in women.

Keywords: Health Status, Burden of Disease, DALYs, Health Policy

ÖZET

Bu araştırma Türkiye'de 1990-2019 yılları arasındaki sağlık statüsündeki eğilimleri ve değişiklikleri analiz etmeyi amaçlamaktadır. Bu çalışmada sağlık statüsünün analiz edilmesinde; engelliliğe ayarlı yaşam yılları (DALYs-disability-adjusted-life-years), engellilik nedeniyle kaybedilen yaşam yılı (years lost due to disability-YLD) ve erken ölüm nedeniyle kaybedilen yaşam yılı (years of life lost-YLL) metrikleri kullanılmıştır. Türkiye'de 1990 - 2019 yılları arasında, tüm nedenler için yaşa standardize edilmiş YLL %58,4 (%95 GA: 50,9-64,5) oranında düşmüştür. YLD oranları % 1,5 (%95 GA: 0,99-3,86) düşer iken YLL ve YLD toplamı olan DALY ise % 43,9 (%95 GA: 37,5-49,7) oranında düşmüştür. 2019 yılında tüm nedenlere bağlı toplam ölümlerin % 82'si önde gelen 20 ölüm nedeninden kaynaklanmaktadır. Özellikle iskemik kalp hastalığı, inme, akciğer kanseri, KOAH, alzheimer hastalıkları tüm nedenlere bağlı ölümlerin yaklaşık % 50'sini oluşturmaktadır. Bel ağrısı, depresif bozukluklar, diyabet, baş ağrısı en yüksek YLD nedenleridir. Tütün kullanımı erkeklerde birinci risk faktörü iken kadınlarda ise dördüncü sırada yer almaktadır.

Anahtar Kelimeler: Sağlık Statüsü, Hastalık Yükü, DALYs, Sağlık Politikası

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1. INTRODUCTION

Burden of disease is very important in monitoring trends in population health, developing health policies and evaluating the impact of health programs. As societies develop, disease types also change and develop. The increasing prevalence of diseases in both developed and developing countries, decreasing infant mortality rates and increasing life expectancy increases both the disease and economic burden of countries (Yiğit, 2020). As death rates decline, life expectancy increases, and populations age, nonfatal consequences of diseases and injuries are becoming a larger component of the global burden of disease (Vos et al., 2017)

Summary measures of population health such as DALYs have been proposed and developed as useful tools for health policy makers and analysts (Crimmins,2002, p. 213). One of these tools is burden of disease analyses. Burden of disease studies are an important health policy tool in determining priorities and evaluating health outcomes.

The burden of disease approach helps health policy makers see the big picture, compare diseases and risk factors, and identify the factors that most influence health loss in a particular place, time, and age-gender group. DALYs designed to measure health status. DALYs approach has been developed (Murray et al. 2012, p. 2063; Hyder et al. 1998, p. 196). In 1993, the World Bank initiated a project recommending that developing countries design and finance a national health service package to reduce the disease burden. Global burden of disease (GBD) has provided regular updates on complex patterns and trends in population health worldwide since the first GBD publication in 1993 (Murray & Lopez, 1996, p. 2–3; Tatar, 1995, p. 97). Within the scope of this project, the concept of disease burden as a new summary measure of population health and the DALYs concept as its measure were developed by Murray and Lopez (1996) to obtain information about health policy and priorities at the global level (Anand & Hanson, 1997, p. 686). DALYs is a summary measure of health that combines mortality and morbidity into a single measure to estimate the global burden of disease and the effectiveness of health interventions. DALYs is an important health policy resource allocation tool used in determining cost-effective and equitable policies (Murray & Acharya, 1997, p. 703; Stein, 2011, p. 955; Mathers et al., 2007, p. 1; Salomon 2014, p. 200).

Burden of disease is one of the most important indicators that can be used to evaluate the relative health system performance within a single country or between regions (Lopez et al., 2006, p. 4). The DALY methodology provides a conceptual and methodological framework for measuring and comparing the health of populations. DALYs consists of two components: YLD and YLL (Drummond et al., 2015; Mathers et al., 2007; Murray & Acharya, 1997; Murray & Lopez, 2013). The first, YLLs is a measure of premature death, while the second, YLD, is expressed as a measure of disability due to diseases and injuries that impair people's health but do not cause death. The result obtained with DALYs is expressed as a value between "0", which means perfect health, and 1, which means death. 1 DALYs represents the loss of 1 healthy life year and is calculated with the formula DALYs = YLLs + YLDs (Murray & Acharya, 1997; Murray & Lopez, 2013).

2. METHODS

GBD is a systematic study to describe the burden of diseases and injuries over the last 33 years. This study aims to explain the trends and differences in the burden of disease between 1990 and 2019 in Türkiye. GBD data enables global comparisons of the magnitude of diseases, injuries and risk factors across age groups, genders, countries, regions and time. The Global Burden of Diseases, Injuries, and Risk Factors Study is among the largest and most detailed scientific studies ever conducted to measure disease burden and trends. GBD studies provide annual estimates of the global disease burden by countries, time, age and gender. It is a tool that can be used to measure health losses due to hundreds of diseases, injuries and risk factors. Data includes years of life lost to various diseases, years lived with disability, and disability-adjusted life years.

The Turkish Ministry of Health collaborates with the Institute for Health Metrics and Evaluation (IHME) at the University of Washington on national disease burden estimation. Additionally, death and life years data were taken from the Turkish Statistical Institute database. In this study, all results related to disease burden were analyzed using GBD 2019 Global and Türkiye data. We conducted a secondary analysis of data from the Global Burden of Disease 2019 Study, which investigated DALYs change in Turkey. Data for this study were obtained from the 2019 Global Burden of Disease study from the University of Washington Institute for Health Metrics and Evaluation. YLLs, YLDs, and DALYs were provided by the visualisation “GBD Results” tool (Institute for Health Metrics and Evaluation (IHME, 2023). We display the trends over time, describe the rates according to year, age and gender.

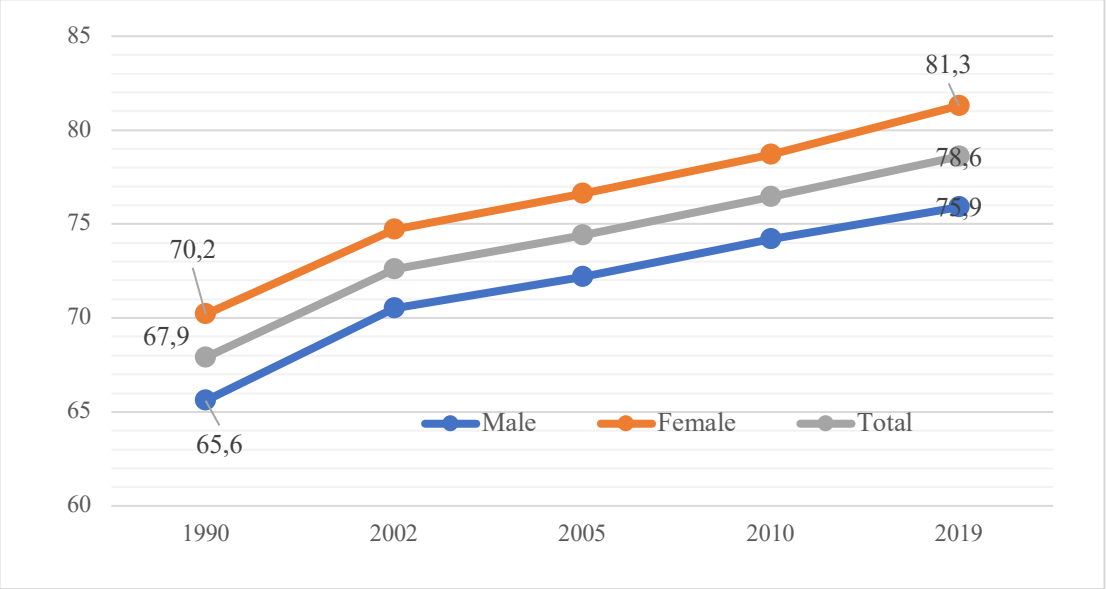
DALYs, YLLs, YLDs and Deaths data, rates per 100,000 people and standardized age groups were used in the research. In the research, SPSS, MS Excel and R Studio package programs were used to create descriptive statistics and graphics. All rates are taken as age-standardized rates derived from world population standards developed for the GBD study, and each point estimate includes 95% uncertainty intervals (UI). Age-standardized rates allow comparison of health outcomes across countries and as a result are often used for comparison studies (Vos et al., 2017). This study used existing published data and therefore does not require ethical approval. The GBD study complies with the Guidelines for Accurate and Transparent Health Estimates Reporting (GATHER) recommendations (Stevens et al., 2016).

3. RESULTS

3.1. Population and Life Expantacy

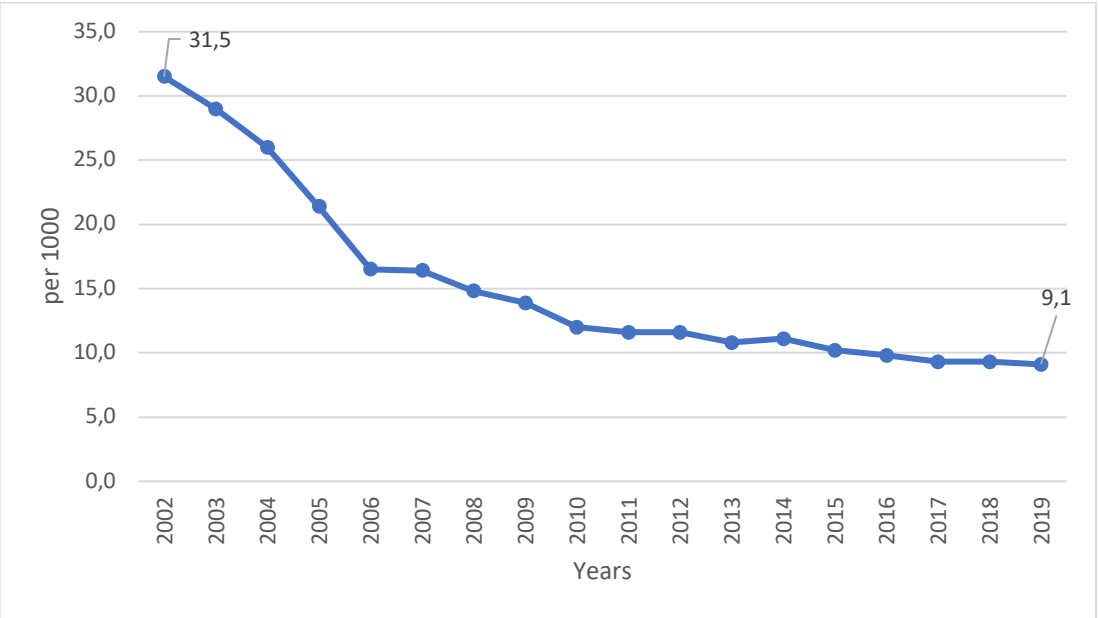
Life expectancy at birth is a critical index of human health and well-being, and reflects the overall mortality in a population, but provides no information about the health of the population prior to death. Summary measures of population health that combine information on mortality and nonfatal health outcomes have been developed to fill this gap and to represent population health in a single number. While the population of Türkiye was 56 million in 1990, it reached 83 million in 2019. While 49% of the total population lived in rural areas in 1990, this rate decreased to 11% in 2019. In 2019, living in urban areas increased to 89%. The life expectancy at birth in Türkiye has gradually increased since 1990 and reached 76 years for men and 81 for women in 2019 (Figure 1). Life expectancy (at birth) in Türkiye increased from 68 in 1990 to 78 in 2019.

Figure 1. Life Expectancy at Birth by Years and Sex (Age)



The infant mortality rate was about 31.5 deaths per year per 1,000 live births in 2002; it was reduced to 9.1 deaths per year per 1,000 live births in 2019 (Figure 2). In the Türkiye health system review of 2011, the World Health Organisation (WHO) reported that 'Türkiye has accomplished remarkable improvements in terms of health status in the last three decades, particularly after the implementation of the Health Transformation Program. The most important factor in the increase in life expectancy in Türkiye was achieved by the great decrease in infant and under five mortality rates. Increasing immunization rates and expansion of the immunization programs helped contribute to this decline

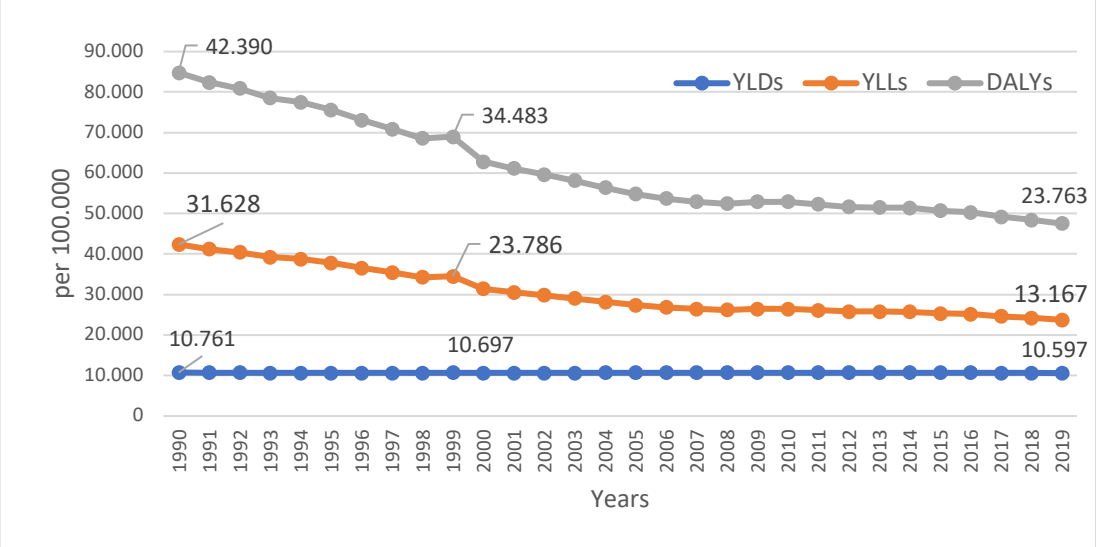
Figure 2. Infant Mortality Rate in Türkiye



3.2. Burden of Disease in Türkiye

The trend analysis of Türkiye's YLLs, YLD sand DALYs loads covering the years 1990-2019 is given in Figure 3. Accordingly, it is seen that the years of life lost due to premature death (YLL), which we express as the disease burden per 100,000 people in 1990, decreased rapidly towards 2019. There was a major change in the slope line only in 1999. The reason for this is the earthquake in Türkiye on August 17, 1999. It was determined that YLD rates remained the same between 1990 and 2019. However, DALYs, which we express as the total disease burden, decreased by approximately 46% in 2019 compared to 1990.

Figure 3. Burden of Disease (DALY, YLL and YLD) Trend Analysis in Turkiye



Data on disease burden indicators of YLDs, YLLs and DALYs in Türkiye are presented in 2. Accordingly, deaths decreased by 41% between 1990 and 2019. In this decrease; We can say that many factors such as the increase in health manpower and health institutions, the development of health literacy of the society, socio-economic and demographic developments, lifestyle change, access to health services, social security and health transformation program play an important role. The rate of years of life (YLLs) lost due to premature death decreased by 58% between 1990-2019. There was a change of 0.02% in the disability-related life years (YLDs) rate between 1990 and 2019. It was determined that the disease burden indicator DALYs rate, which is the sum of YLLs and YLDs, decreased by 44% between 1990 and 2019. Men have a higher disease burden than women.

Table 2. Percentage change of YLDs, YLLs and DALYs in Türkiye (1990-2019)

Measure	Change (1990 to 2019)-Age- standardized rate (per 100,000)		
	Both	Female	Male
DALYs	-0,44 (-0,47--0,41)	-0,42 (-0,45--0,38)	-0,46 (-0,48--0,43)
Deaths	-0,41 (-0,46--0,35)	-0,40 (-0,45--0,35)	-0,41 (-0,46--0,37)
YLDs	-0,02 (0--0,02)	-0,02 (-0,01--0,02)	0 (0,01--0,01)
YLLs	-0,58 (-0,62--0,55)	-0,6 (-0,63--0,57)	-0,57 (-0,6--0,54)

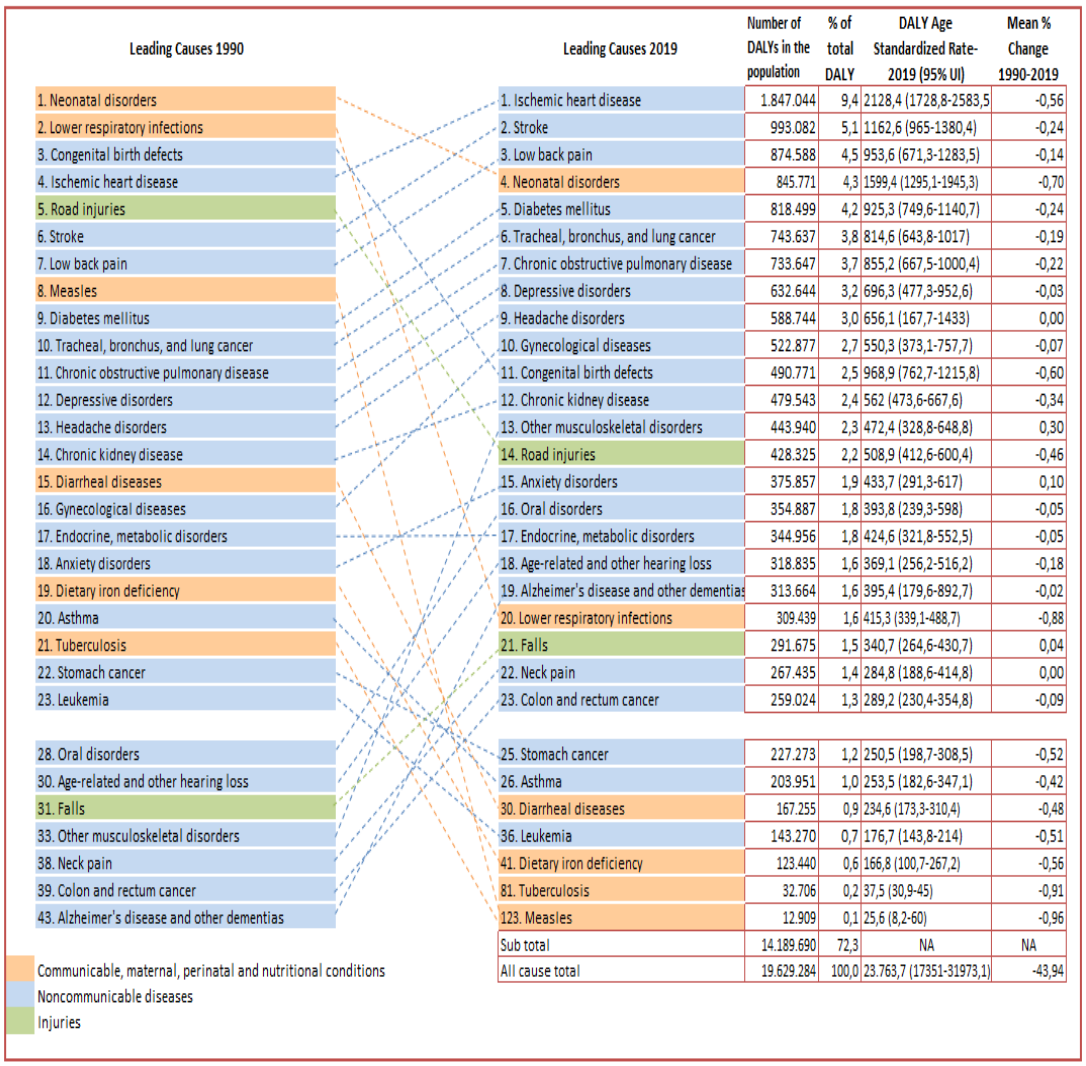
Table 3 shows the 20 leading causes of death (among Level 3 GBD causes), along with their percentage changes from 1990 to 2019 in Türkiye. Of the total deaths both (men and women) due to all causes in 2019, 82% (372.132) were attributed to the 20 leading causes of deaths. In particular, ischaemic heart disease, stroke, tracheal, bronchus, and lung (TBL) cancer, chronic obstructive pulmonary disease (COPD), alzheimer's diseases accounted for half of all-cause deaths and had the highest age-standardised mortality rates. The highest decrease occurred in neonatal disorders and lower respiratory infections, measles, tuberculosis. In contrast, the highest increase occured in Alzheimer's disease and the biggest decrease was found in neonatal disorders.

Table 3. Causes of deaths from 1990 to 2019 in Türkiye (Both)

		Death Rank		Death, 2019		Age Standardized Death Rate	
No	Causes of Death	1990	2019	#	% of all-cause death	Per 100.000 (%95% UI)-2019	% Change 1990-2019
1	Ischemic heart disease	1	1	99,046	21.8	121.0 (98-147.2)	-1.9
2	Stroke	4	2	48,947	10.8	60.6 (48.7-73.6)	62.4
3	Tracheal, bronchus, and lung cancer	7	3	29,832	6.6	33.8 (26.9-41.8)	54.7
4	Chronic obstructive pulmonary disease	9	4	29,015	6.4	35.8 (24-44.4)	44.4
5	Alzheimer's disease	**13**	**5**	19,721	4.3	25.8 (20.3-29.0)	113.4
6	Diabetes mellitus	8	6	19,699	4.3	23.8 (19.1-28.8)	5.4
7	Chronic kidney disease	9	7	19,193	4.2	23.5 (19.0-28.7)	21.5
8	Hypertensive heart disease	10	8	16,257	3.6	20.7 (11.3-26.1)	20.4
9	Lower respiratory infections	3	9	14,868	3.3	19.0 (14.8-22.6)	-65.9
10	Colon and rectum cancer	16	10	11,194	2.5	13.1 (10.6-15.8)	79.4
11	Stomach cancer	12	11	9,323	2.1	10.7 (8.6-13.2)	-6.2
12	Road injuries	11	12	7,749	1.7	9.0 (7.0-11.0)	-33.6
13	Cirrhosis and other diseases	15	13	7,349	1.6	8.7 (7.0-10.6)	9.7
14	Pancreatic cancer	33	14	7,132	1.6	8.2 (6.6-10.1)	185.2
15	Neonatal disorders	**2**	**15**	6,943	1.5	14.7 (11.3-18.4)	-88.7
16	Breast cancer	23	16	6,049	1.3	6.8 (5.5-8.4)	76.6
17	Prostate cancer	30	17	5,185	1.1	6.4 (4.6-8.2)	81.3
18	Congenital birth defects	5	18	5,150	1.1	10.4 (7.9-13.2)	-81.9
19	Falls	26	19	5,075	1.1	6.4 (3.3-8.5)	58.8
20	Leukemia	18	20	4,405	1.0	5.3 (4.2-6.7)	-20.4
	Sub total			372,132	82		
	All caıse total			454,742	100		

DALY is a measure that expresses the years lost due to deaths at an early age and diseases and injuries that do not result in death but cause long-term loss of function. Accordingly, Table 4 shows the total percentage distributions of the top DALYs causes in Türkiye according to 2019 data. Among the most important DALYs causes in 1990; neonatal diseases, lower respiratory infections, congenital birth defects, ischemic heart disease, road injuries, stroke, low back pain and other diseases. In 2019, the disease with the highest DALYs value in Türkiye is ischemic heart disease with 9.4%. This is followed by stroke, low back pain, neonatal diseases, diabetes, tracheal, bronchus, and lung cancer, chronic obstructive pulmonary disease and other diseases.

Table 4. Leading Causes of DALYs from 1990 to 2019 in Türkiye



Leading Causes 2019	Number of DALYs in the population	% of total DALY	DALY Age Standardized Rate-2019 (95% UI)	Mean % Change 1990-2019
1. Ischemic heart disease	1.847.044	9,4	2128,4 (1728,8-2583,5	-0,56
2. Stroke	993.082	5,1	1162,6 (965-1380,4)	-0,24
3. Low back pain	874.588	4,5	953,6 (671,3-1283,5)	-0,14
4. Neonatal disorders	845.771	4,3	1599,4 (1295,1-1945,3)	-0,70
5. Diabetes mellitus	818.499	4,2	925,3 (749,6-1140,7)	-0,24
6. Tracheal, bronchus, and lung cancer	743.637	3,8	814,6 (643,8-1017)	-0,19
7. Chronic obstructive pulmonary disease	733.647	3,7	855,2 (667,5-1000,4)	-0,22
8. Depressive disorders	632.644	3,2	696,3 (477,3-952,6)	-0,03
9. Headache disorders	588.744	3,0	656,1 (167,7-1433)	0,00
10. Gynecological diseases	522.877	2,7	550,3 (373,1-757,7)	-0,07
11. Congenital birth defects	490.771	2,5	968,9 (762,7-1215,8)	-0,60
12. Chronic kidney disease	479.543	2,4	562 (473,6-667,6)	-0,34
13. Other musculoskeletal disorders	443.940	2,3	472,4 (328,8-648,8)	0,30
14. Road injuries	428.325	2,2	508,9 (412,6-600,4)	-0,46
15. Anxiety disorders	375.857	1,9	433,7 (291,3-617)	0,10
16. Oral disorders	354.887	1,8	393,8 (239,3-598)	-0,05
17. Endocrine, metabolic disorders	344.956	1,8	424,6 (321,8-552,5)	-0,05
18. Age-related and other hearing loss	318.835	1,6	369,1 (256,2-516,2)	-0,18
19. Alzheimer's disease and other dementias	313.664	1,6	395,4 (179,6-892,7)	-0,02
20. Lower respiratory infections	309.439	1,6	415,3 (339,1-488,7)	-0,88
21. Falls	291.675	1,5	340,7 (264,6-430,7)	0,04
22. Neck pain	267.435	1,4	284,8 (188,6-414,8)	0,00
23. Colon and rectum cancer	259.024	1,3	289,2 (230,4-354,8)	-0,09
25. Stomach cancer	227.273	1,2	250,5 (198,7-308,5)	-0,52
26. Asthma	203.951	1,0	253,5 (182,6-347,1)	-0,42
30. Diarrheal diseases	167.255	0,9	234,6 (173,3-310,4)	-0,48
36. Leukemia	143.270	0,7	176,7 (143,8-214)	-0,51
41. Dietary iron deficiency	123.440	0,6	166,8 (100,7-267,2)	-0,56
81. Tuberculosis	32.706	0,2	37,5 (30,9-45)	-0,91
123. Measles	12.909	0,1	25,6 (8,2-60)	-0,96
Sub total	14.189.690	72,3	NA	NA
All cause total	19.629.284	100,0	23.763,7 (17351-31973,1)	-43,94

The leading DALYs causes in Türkiye in 1990 and 2019 are presented in the pie chart in Figure 4. Accordingly, causes such as neonatal diseases, lower respiratory infections, congenital birth defects, and road injuries in 1990 were ranked lower in 2019. For example, while neonatal diseases constituted 18% of the total burden of diseasein 1990, this disease ranked 4th in 2019 and constituted 4% of the total disease burden. There was an epidemiological change in Türkiye from 1990 to 2019.

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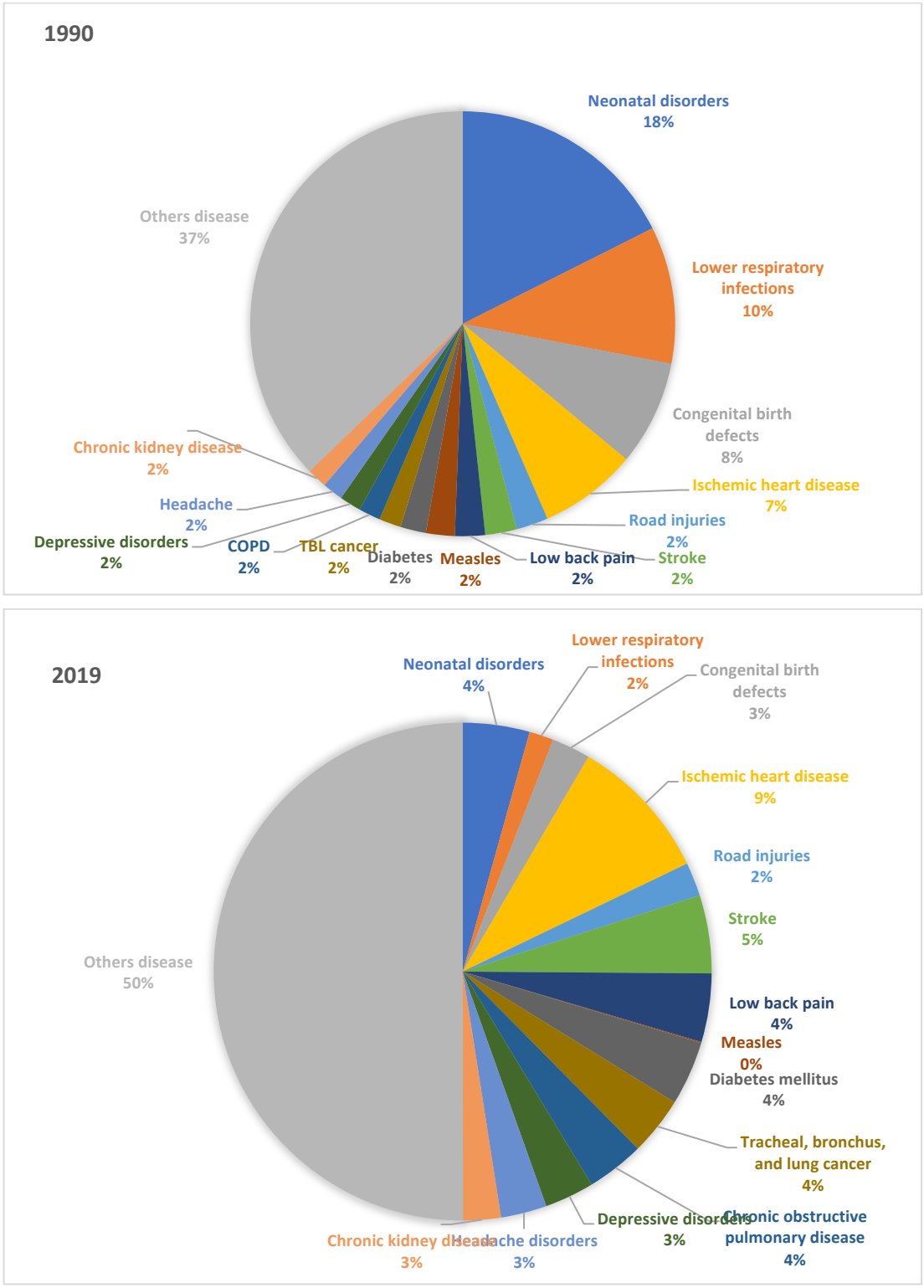
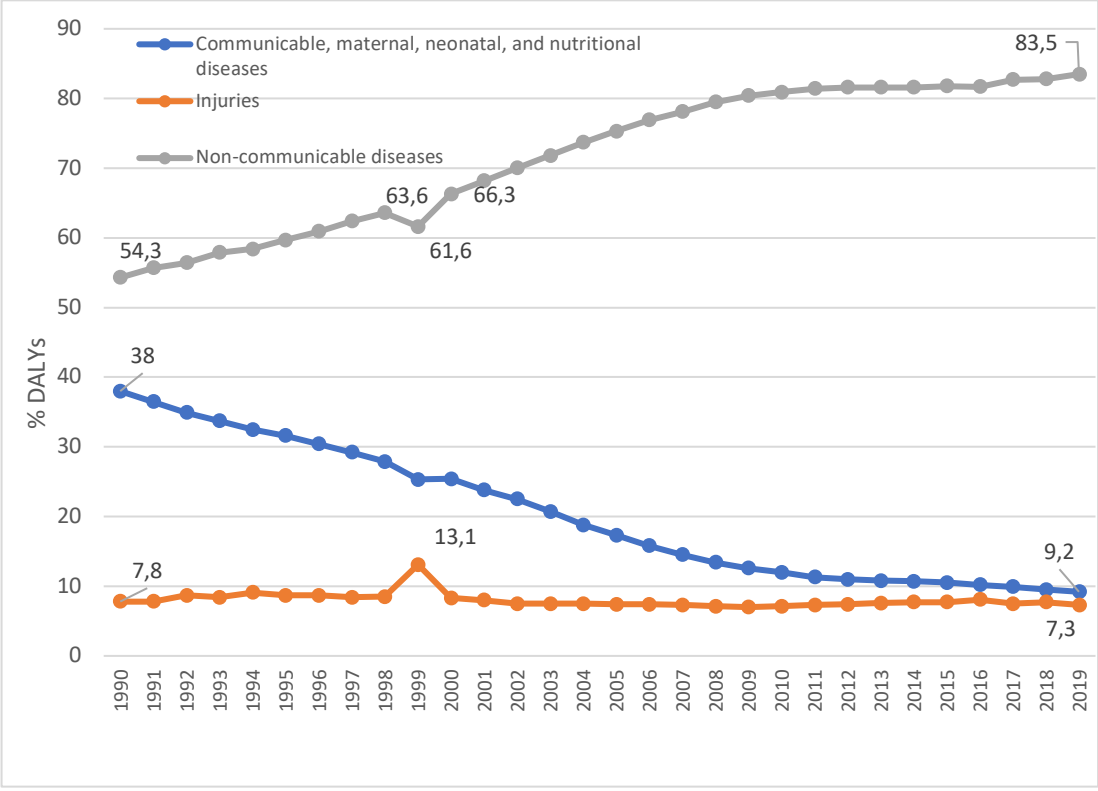
Figure 4. Leading causes of DALYs from 1990 to 2019 in Turkiye



According to the global burden of diseaseclassification, the burden of diseasewas analyzed in this study by classifying it as Group I: communicable, maternal, perinatal, and nutritional conditions, Group II: noncommunicable diseases and Group III: injuries (Figure 5). According to this analysis, while the burden of infectious diseases in total diseases and injuries was 38% in 1990, it decreased to 9.2% in 2019. While the DALYS rate of non-communicable diseases in total diseases and injuries was 54.3% in 1990, it increased significantly to 83.5% in 2019. As for injuries, the total burden of diseasedecreased from 7.8% in 1990 to 7.3% in 2019. Noncommunicable diseases are the most common causes of premature death and morbidity and have a significant impact on healthcare costs, productivity and growth (Couser et al., 2011). Like other middle-income countries Türkiye is far into the epidemiological transition and has seen a major shifts the main burden of disease away from communicable diseases toward non-communicable diseases (NCDs). Reducing the burden of disease from NCDs requires not only effective treatment of patients with such diseases, but also reducing the incidence and prevalence of these disease. While the former is the task of the health system, the latter requires interventions beyond the health system in order to change the population's unhealthy life styles.

Figure 5. Total Burden of Disease by Leve1 Causes in Türkiye, 1990 to 2019



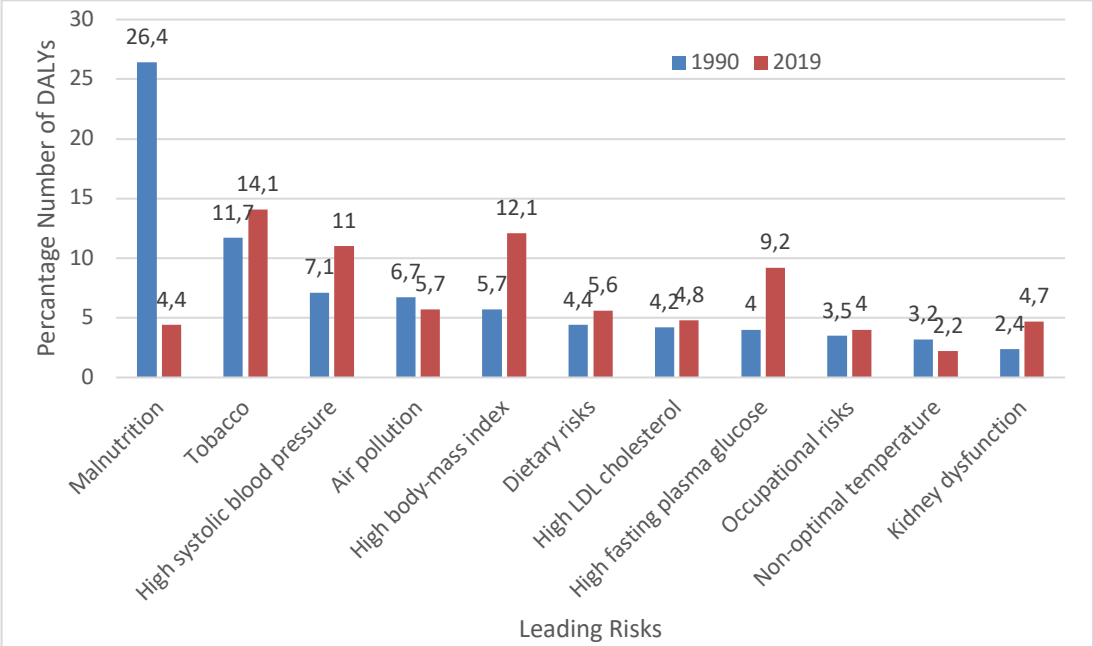
There are three primary risk factors in disease burden studies. These risk factors are metabolic, behavioral, environmental and occupational risks. The contribution of disease risk factors to the burden of diseasein Türkiye is presented in Table 5. Accordingly, in 1990, percantage distribution of metabolic risks, environmental/occupational risks, and behvioral risks were determined as 40.5, 14.5, 45.0, respectively. In 2019, the percentage distribution of metabolic risks, environmental-occupational risks, and behvioral risks were determined as 50.7, 16.1, 33.2, respectively.

Tablo 5. Leading Risk Factor, 1990-2019

Leading Risks	Percantage number of DALYs, 1990	Percantage number of DALYs, 1990
Metabolic risks	40,5	50,7
Environmental/occupational risks	14,5	16,1
Behvioral risks	45,0	33,2

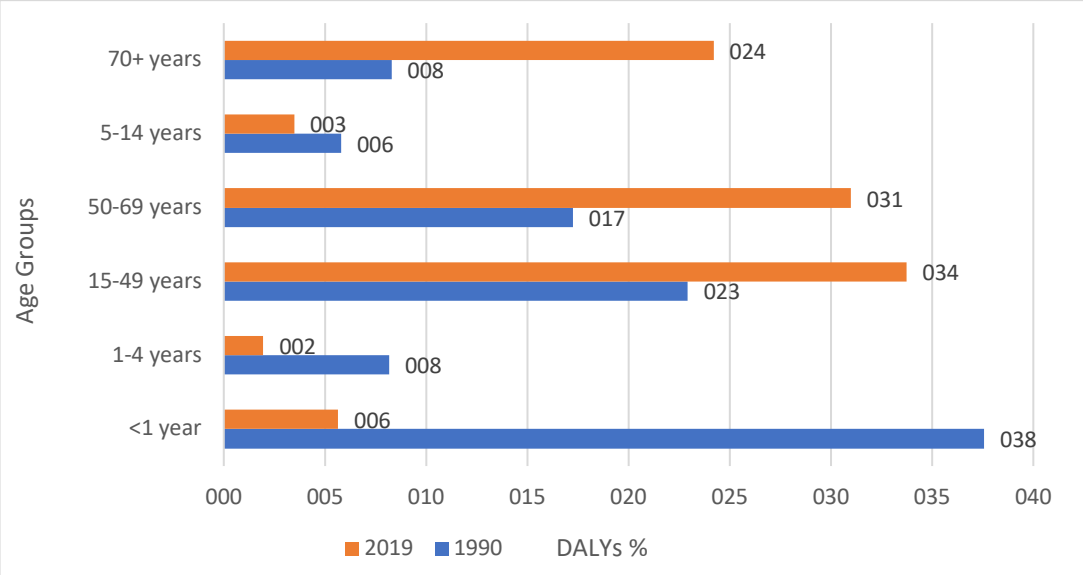
Share of DALYs attributed to risk factors in Türkiye, 1990-2019 (%) is presented in Figure 6. Accordingly, while malnutrition was the highest risk factor with 26.4% in 1990, it decreased to 4.4% in 2019. In 2019, the highest risk factor was found to be tobacco use with 14.1%. High body mass index, high systolic blood pressure, high fasting glucose, nutritional risks, high LDL cholesterol, malnutrition in the child and mother, kidney dysfunction, substance use, alcohol use, low physical activity, and occupational risks are followed.

Figure 6. Share of DALYs Attributed to Risk Factors in Türkiye, 1990-2019 (%)



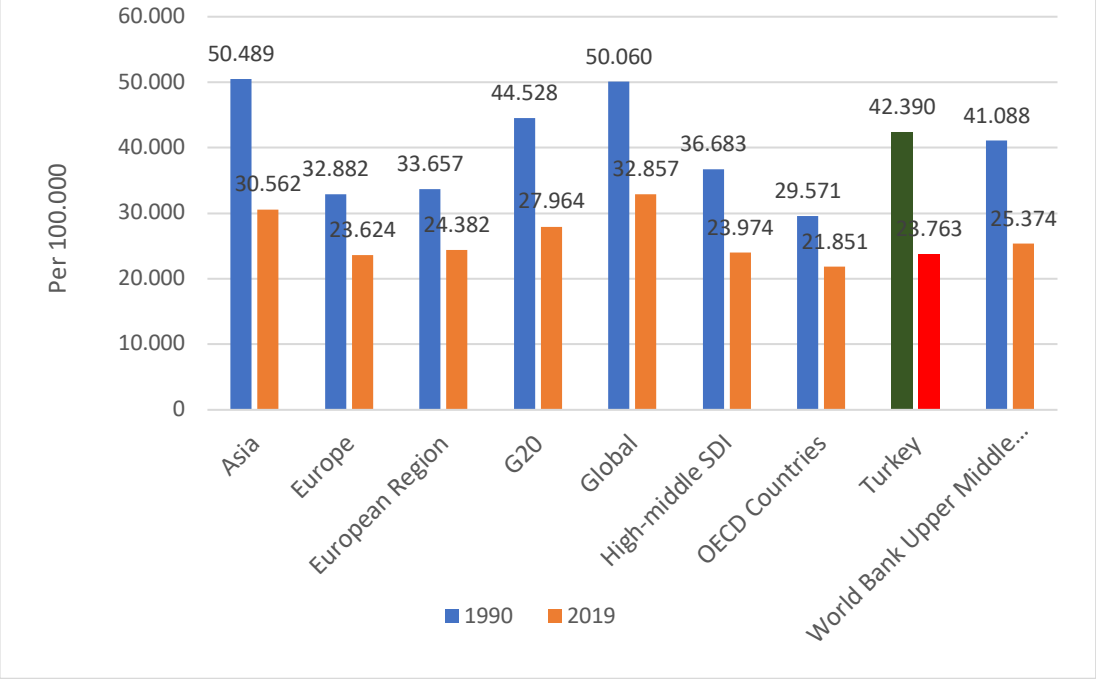
Distribution of burden of disease in türkiye by age groups is presented in Figure 7. While the highest DALYS rate was 38% in the <1 year group in 1990, this rate decreased to 0.6% in 2019. In 2019, it was determined that the burden of diseasewas in people over the age of 15. In addition, it was determined that 51% of the total burden of diseasewas women and 49% was men in 2019.

Figure 7. Distribution of Burden of Disease in Türkiye by Age Groups, 1990-2019 (%)



Comparison of burden of disease global level is given in Figure 9. Accordingly, while the global burden of disease was 50,060 per 100,000 people in 1990, it decreased to 32,857 in 2019. While the highest DALYs rate was 50,489 per 100,000 people in 1990, it decreased to 30,562 per 100,000 people in 2019. The burden of diseasewas lowest in 1990, at 29,571 per 100,000 people, and in 2019, it was 21,851. In Türkiye, while the burden of diseasewas 42,390 per 100,000 people in 1990, this rate decreased to 23,763 in 2019.

Figure 9. Comparison of Burden of diseaseat Global Level, 1990-2019



4. DISCUSSION

In the GBD 2019 study, there were significant improvements in overall health between 1990 and 2019, when the effects of population growth and aging were eliminated by converting to age-standardized rates. The annual decrease rate was highest in the 0-9 age group. It has been determined that the rate of change in the population aged 50 and over is slower compared to the previous period from 2010 to 2019 (Vos et al., 2020). The original Global Burden of Disease Study, conducted in the late 1990s, represented the first attempt to paint a comprehensive and comparative picture of health and disease in the world population. In this context, the first burden of disease study in Türkiye was carried out in 2003 with the "National Burden of Disease" Project (Sağlık Bakanlığı, 2004). General trends in the number of DALYs in different age groups in Türkiye between 1990 and 2019 are due to some basic diseases and injuries. The causes showing the largest absolute increase in the number of DALYs between 1990 and 2019 were due to causes such as ischemic heart disease, diabetes, stroke, etc., which largely affect older adults. The most important factors contributing to the reduction of disease burden are due to neonatal disorders, lower respiratory tract infections, diarrheal diseases, congenital defects that predominantly affect children. In addition, the decrease in measles cases (tetanus, drowning, birth defects, protein-energy malnutrition, etc.) due to demographic changes contributed to the decrease in the disease burden in Türkiye in 2019.

Türkiye, located in Asia and Europe with a population of 84 million, is an upper-middle-income country. Türkiye is a founding member of the OECD and the G-20 major economies. The healthcare system in Türkiye has a highly complex structure. The Ministry of Health (MOH), universities and the private sector are the health service providers in the Turkish health system. Turkish insurance system is a combination of public and private health insurance. The Turkish healthcare system is financed by taxes (Beveridge), insurance premiums (Bismarck), out-of-pocket payments, other funds.

One of the most important problems of the Turkish health system is the inability of citizens to access health services. For this reason, health reforms have started in Türkiye since 1990. In 1992, a green card application was introduced for low-income citizens. Access to health services has been expanded. The green card application has not sufficiently solved this problem. Because resources were used inefficiently in both financing and service delivery of health services. For this reason, both health reforms were carried out in the 2000s (Akdağ, 2015).

Beginning in 2003, the Republic of Türkiye implemented major health system reforms through the Health Transformation Program (HTP). The HTP aimed to address inequities in health care services across Türkiye. Prior to the reforms, Türkiye had an inequitable heath system: almost a quarter of the population lacked health insurance and there were large variations in health service coverage and health outcomes by regions HTP, with a particular emphasis on expanding strengthening primary health care (PHC) through organizational, financing and service delivery changes to achieve universal health coverage (Atun et al. 2013). The expansion in the health care delivery system helped contribute to noteworthy improvements in utilization of health care services. These results were attained, in part, by major investments in the health sector to increase access to health care.

5. CONCLUSION

This research aims to compare the burden of diseases in Türkiye between 1990-2019. Changing lifestyle and rapid urbanization also exacerbate the situation where the population's exposure to NCD risk factors is high. Türkiye has a very high prevalence of the main risk factors for chronic diseases, in particular tobacco use and obesity, resulting from sedentary life styles and unhealthy diets. Türkiye became a role model for other countries seeking to combat tobacco use. Environmental changes threaten the population of Türkiye due to disease risks. In addition to addressing existing challenges and national inequalities, Türkiye's healthcare system must be better prepared for emerging diseases such as the COVID-19 pandemic.

Türkiye has undertaken major reforms to transform and improve the health system and its outcomes. A remarkable improvement in life expectancy has happened in the past three decades in Türkiye. The Turkish healthcare system has successfully managed communicable diseases, but there has been an increase in non-communicable diseases and injuries. A better evaluation of existing health programs in Türkiye, the establishment of appropriate policies against emerging health threats and the reduction of inequalities should be carried out in a comprehensive manner, as well as the burden of diseases, injuries and risk factors.

This study is the first comprehensive analysis of the burden of disease in Turkey. From 1990 to 2019, there was an epidemiological transition in Turkey. In Türkiye, between 1990 and 2019, age-standardized YLL for all causes decreased by 58.4% (95% UI: 50.9-64.5). While YLD rates decreased by 1.5% (95% UI: 0.99-3.86), DALYS, which is the sum of YLL and YLD, decreased by 43.9% (95% UI: 37.5-49.7). In 2019, 82% of total deaths (males and females) from all causes were caused by the 20 leading causes of death. In particular, ischemic heart disease, stroke, lung cancer, COPD and Alzheimer's diseases constitute approximately 50% of all-cause deaths, and these diseases have been found to have the highest age-standardized death rates. Low back pain, depressive disorders, diabetes, and headache are the highest age-standardized YLD rates. Tobacco use is the first risk factor in men and the fourth in women. In addition to tobacco use, high body mass index, hypertension, and high fasting plasma glucose have been identified as the other most important risk factors. Considering the major demographic changes in Türkiye, it is thought that more importance should be given to health policy and public health planning aimed at a cost-effective, accessible and sustainable health system and reducing health risk factors.

DECLARATION OF THE AUTHORS

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