

Original Article

Life expectancy in Iraq from 1950 to 2024: A retrospective time-series analysis

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Abstract

Life expectancy is a vital demographic indicator reflecting the health and well-being of a population. The aim of this study was to analyze life expectancy trends in Iraq from 1950 to 2024 using Worldometer data aggregated from United Nations statistics. The Iraqi population increased from 6.37 million in 1955 to 46.04 million in 2024, representing a 623% increase, with urbanization rising from 38.4% to 71.8%. Fertility rates declined from 6.0 live births per woman in 1955 to 3.2 in 2024, peaking at 7.1 in 1970 before steadily decreasing. Life expectancy improved significantly from 37.4 years in 1950 to 72.4 years in 2024, with a narrowing gender gap: life expectancy for men increased from 34.3 years in 1950 to 70.5 years in 2024, while for women, it rose from 41 years to 74.2 years over the same period. The median age also increased slightly, from 19.5 years in 1955 to 20.6 years in 2024. Infant mortality rates dropped dramatically, from 206.6 deaths per 1,000 live births in 1950 to 18.7 in 2024, and under-five mortality fell from 357.9 to 22.4. Despite historical conflicts, improvements in healthcare and living conditions highlight Iraq's dynamic demographic changes, presenting the ongoing challenges and opportunities posed by its rapid growth and urbanization.

Keywords: Life expectancy, public health, population, Iraq, sustainability

Introduction

All people deserve to live long and healthy lives, and life expectancy serves as a crucial demographic indicator that reflects the general health and well-being of a population [1]. Globally, socioeconomic status and the presence of comorbidities have a profound influence on life expectancy, contributing to disparities in health outcomes between different populations [2]. The continued increase in life expectancy worldwide is largely attributed to improved living conditions, healthcare advancements, better maternal care, higher education levels, and increased per capita income. These socioeconomic and health-related factors play a crucial role in determining overall health and longevity of populations [3]. Life expectancy, as a key population-based indicator, not only reflects these improvements but also highlights the ongoing impact of economic conditions, social determinants, and the burden of chronic diseases [4].

Iraq, located in the heart of the Middle East, shares borders with several countries, including Iran, Turkey, Syria, Jordan, Saudi Arabia, and Kuwait. It is a nation characterized by its diverse communities and rich cultural heritage, home to various ethnic groups such as Arabs, Kurds, Turkmen, Assyrians, and others, alongside a mosaic of religious groups including Muslims (both Sunni and Shia), Christians, Yazidis, and Mandaean [5]. Diversity in Iraq adds a layer of complexity to its sociopolitical and economic landscape, profoundly influencing various aspects of life for its population. Decades of conflict, war, violence, economic challenges, and social instability, such as the Iran-Iraq War (1980–1988), the Gulf War (1990–1991), subsequent



economic sanctions imposed by the United Nations throughout the 1990s, the 2003 United States-led invasion, the rise and occupation of Islamic State of Iraq and Syria (ISIS, 2014–2017) and the coronavirus disease 2019 (COVID-19) pandemic, have severely weakened the Iraqi healthcare system, reducing access to essential medical services and disrupting disease prevention programs. The destruction of hospitals, medicine shortages and the emigration of healthcare professionals during these periods have contributed to high mortality rates, malnutrition, forced migration, poor health and well-being, and a reduction in life expectancy [6].

The aim of this study was to analyze life expectancy trends in Iraq from 1950 to 2024 using time-series data. The analysis is based on Worldometer data, which aggregates demographic statistics from the latest United Nations data. Given Iraq's unique sociopolitical and historical context, this study seeks to provide a comprehensive examination of both declines and increases in life expectancy over decades of adversity. Despite the ups and downs experienced by Iraq and its people due to decades of war, violence, and socioeconomic and political instability, there is a notable scarcity of literature and studies that focus on trends in life expectancy in Iraq, particularly since data collection began in 1950. This article presents the first study on this topic, aiming to address a significant gap in existing research. The study intends to shed light on Iraq's demographic and health-related challenges through a detailed retrospective analysis and provide valuable insights to assist policymakers and contribute to future health and policy planning.

Methods

Study design

The current study is a retrospective analysis based on publicly available data from the Worldometer website (www.worldometers.info), which provides comprehensive global demographic statistics. The primary focus was to examine the trends in life expectancy and related demographic indicators in Iraq from 1950 to 2024. Specifically, data on life expectancy and child mortality rates (including infant mortality and children under-five mortality) were available from 1950–2024 and analyzed across this full period. In contrast, data on demographic and population changes, including median age and fertility rates, were only available from 1955–2024. This distinction reflects the limitations in the original data set and ensures that all analyses align accurately with the available data range.

Data sources

Data were extracted from the Worldometer database, which includes annual estimates of Iraq's population, birth rates, death rates, and life expectancy, segmented by sex. Worldometer is a popular statistics website that provides real-time data on a wide range of topics, including population, government and economics, society and media, environment, food, water, energy, and health. The website is known for its dynamic counters that are continuously updated, reflecting real-time statistics sourced from reliable organizations and agencies. Worldometer is run by an international team of developers and researchers, aiming to make statistics available in a format that is easy to understand and interact with. The data presented on the Worldometer are collected from reliable sources such as the United Nations, World Health Organization (WHO), Food and Agriculture Organization, and other trusted entities. The website is widely used by researchers, media, and the general public for research, educational, and informational purposes. Additional primary sources, such as official Iraqi government health reports, WHO data, and academic research, have been incorporated.

Unit of analysis

The primary focus of the analysis was national-level life expectancy in Iraq. The study used secondary data on life expectancy trends and key demographic indicators, including sex, median age, fertility rate, and mortality rates (infant and under-five) in various years. Urbanization levels and population density were also included as covariates that influence life expectancy. Descriptive statistics were applied to summarize demographic data, while time series methods were used to examine changes in life expectancy over time. In addition, the study explored the influence of demographic factors such as population growth, fertility, mortality, and urbanization on life

expectancy. Due to data limitations, the analysis was limited to the national level and did not include regional or city-specific breakdowns.

Results

Demographic and population changes from 1955 to 2024

Iraq's population is estimated at 46,042,015 in 2024, representing a dramatic increase from 6,366,279 in 1955. This growth corresponds to an approximate 623% increase in population over the past 69 years. The population growth rate in 2024 is 2.15%, which, although slightly lower than the 2.4% recorded in 1955, remains among the highest globally. This growth is largely driven by a relatively high fertility rate of 3.22 in 2024, down from 6.0 in 1955.

The urban population has also expanded significantly. In 1955, only 38.4% of Iraq's population lived in urban areas, totaling around 2,447,031 people. By 2024, this figure increased to 71.8%, with approximately 33,073,885 people residing in urban centers. Baghdad, the largest city, is estimated to have a population of 7.2 million in 2024, reflecting significant growth compared to smaller urban populations in previous decades. Meanwhile, smaller cities, such as Ramadi, are projected to have approximately 223,500 residents in 2024. Iraq's global demographic standing has also changed notably. In 1955, Iraq accounted for 0.23% of the world's population, ranking as the 63rd most populous country. By 2024, Iraq's share of the global population increased to 0.56%, elevating it to the 34th most populous country worldwide.

The country's population density has more than doubled, rising from 15 people per square kilometer in 1955 to 106 in 2024. Similarly, the median age has decreased from 19.5 years in 1955 to 20.6 years in 2024, reflecting a predominantly young population, which continues to fuel Iraq's rapid demographic expansion (**Table 1**).

Trends in life expectancy (1950–2024)

In 2024, the average life expectancy at birth in Iraq is 72.4 years (male: 70.5, female: 74.2), showing a substantial increase from 1950, when the overall life expectancy was 37.4 years (male: 34.3, female: 41). In 1950, the life expectancy for men was 34.3 years, while for women it was 41 years, indicating an initial gap of 6.7 years between the sexes. By 2024, this gap had decreased, with life expectancy reaching 70.5 years for men and 74.2 years for women, narrowing the difference to 3.7 years. The average annual increase in life expectancy from 1950 to 2024 was approximately 0.49 years for men and 0.45 years for women. The gap in life expectancy, initially 6.7 years in 1950 and now 3.7 years in 2024, illustrates a continued disparity between men and women. These trends and changes in life expectancy over decades are presented in **Figure 1**.

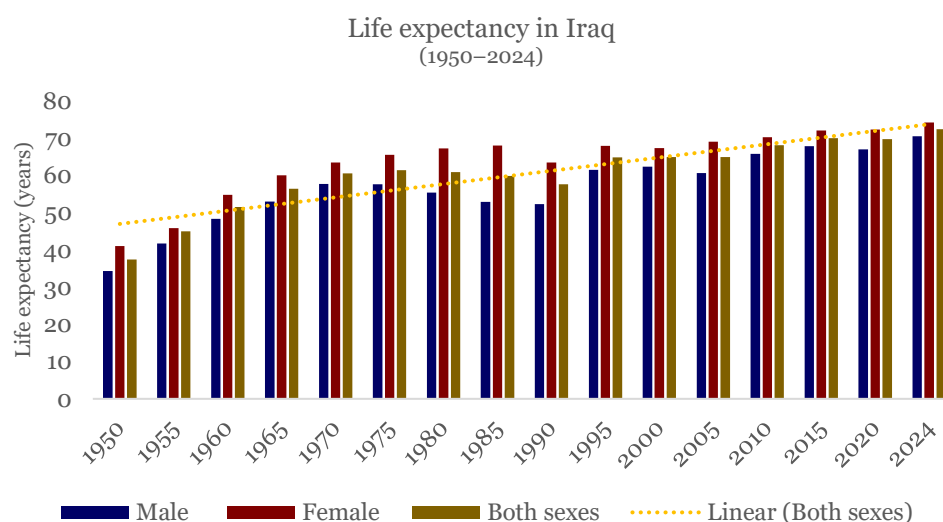


Figure 1. Overview of life expectancy in Iraq (1950–2024).

Table 1. Demographic trends and population statistics in Iraq from 1955–2024

Iraq global rank	World population	Country's share of world pop (%)	Urban population	Urban pop (%)	Density (P/km ²)	Fertility rate	Median age	Yearly change	Yearly change (%)	Population	Year
34	8,161,972,572	0.56	33,073,885	71.80	106	3.22	20.6	967,966	2.15	46,042,015	2024
35	8,091,734,930	0.56	32,130,222	71.30	104	3.25	20.3	1,003,498	2.28	45,074,049	2023
35	8,021,407,192	0.55	31,207,440	70.80	101	3.29	20.1	999,340	2.32	44,070,551	2022
36	7,887,001,292	0.53	29,422,695	69.90	97	3.42	19.6	924,434	2.24	42,116,605	2020
36	7,470,491,872	0.50	25,252,255	67.20	86	4.08	18.5	1,303,034	3.88	37,560,535	2015
39	7,021,732,148	0.44	21,258,071	68.50	71	4.46	17.9	527,584	1.79	31,045,366	2010
38	6,586,970,132	0.43	18,572,494	65.40	65	4.45	17.4	796,678	3.07	28,407,448	2005
42	6,171,702,993	0.40	16,141,452	66.10	56	4.92	16.9	719,639	3.24	24,424,056	2000
45	5,758,878,982	0.36	13,899,288	66.70	48	5.36	16.4	648,931	3.45	20,825,860	1995
46	5,327,803,110	0.33	12,176,901	69.30	40	5.93	16	379,555	2.31	17,581,206	1990
47	4,868,943,465	0.32	10,711,364	68.30	36	6.25	15.6	418,288	2.90	15,683,430	1985
49	4,447,606,236	0.31	8,945,864	65.80	31	6.59	15.4	409,671	3.32	13,591,992	1980
51	4,070,735,277	0.28	7,171,852	62.10	27	6.91	15.9	361,606	3.47	11,543,639	1975
55	3,694,683,794	0.26	5,569,369	57.20	22	7.07	17	306,694	3.49	9,735,611	1970
63	3,334,533,703	0.25	4,242,440	51.70	19	7.02	18.2	236,018	3.16	8,202,140	1965
63	3,015,470,894	0.23	3,127,214	44.50	16	5.3	19.4	131,155	1.98	7,022,052	1960
63	2,740,213,792	0.23	2,447,031	38.40	15	6	19.5	142,586	2.40	6,366,279	1955

Trends in the median age of the population (1955–2024)

As of 2024, the median age of the Iraqi population was 20.6 years, the highest recorded in the country's history. Over the decades, Iraq's median age has gradually increased, starting from 19.5 years in 1955. The lowest recorded median age was 15.4 years in 1980, reflecting the impact of a reduced female reproduction rate. After 1980, the median age began to increase steadily, reaching 15.6 years in 1985, 16 years in 1990, and 16.9 years in 2000. In 2005, the median age had increased to 17.4 years, with further increases to 18.5 years in 2015, and 19.6 years in 2020, and 20.6 years in 2024. The trends in Iraq's median age from 1955 to 2024 is illustrated in **Figure 2**.

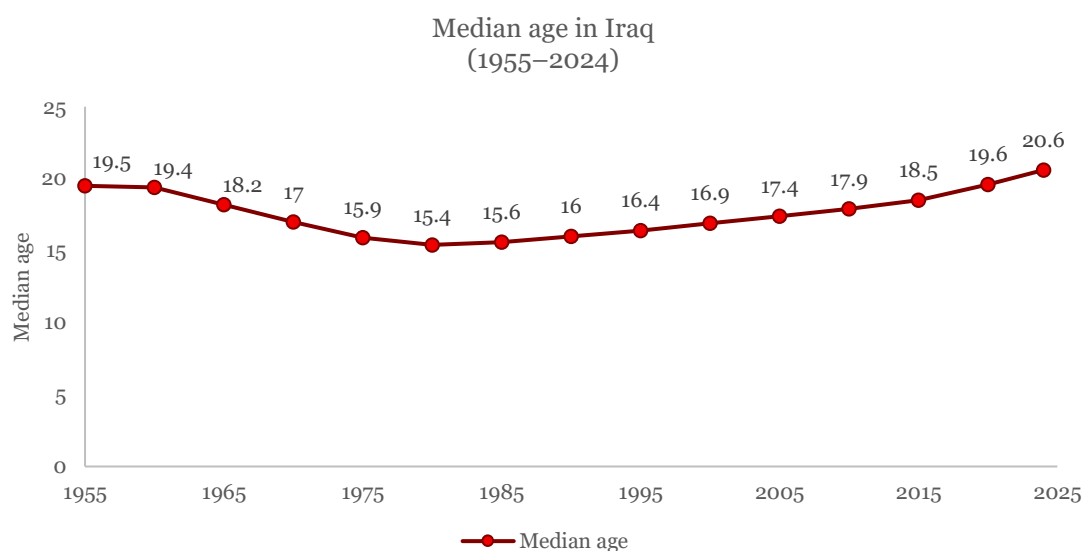


Figure 2. Outline of the median age from 1955–2024 in Iraq.

Trends in fertility rates (1955–2024)

In 2024, Iraq's total fertility rate (TFR) is 3.2 live births per woman, reflecting a substantial decline from previous decades. In 1955, the TFR was 6.0 live births per woman and experienced fluctuations in the following years, peaking at 7.1 in 1970. Since then, there has been a steady decline in fertility rates, with the TFR dropping to 5.9 in 1990, 4.9 in 2000, and 4.1 in 2015. By 2020, the TFR had further decreased to 3.4, continuing its downward trend to the current rate of 3.2 in 2024. This marks a total decline of 2.8 live births per woman in the TFR from 1955 to 2024. The trends in fertility rates over the decades is presented in **Figure 3**.

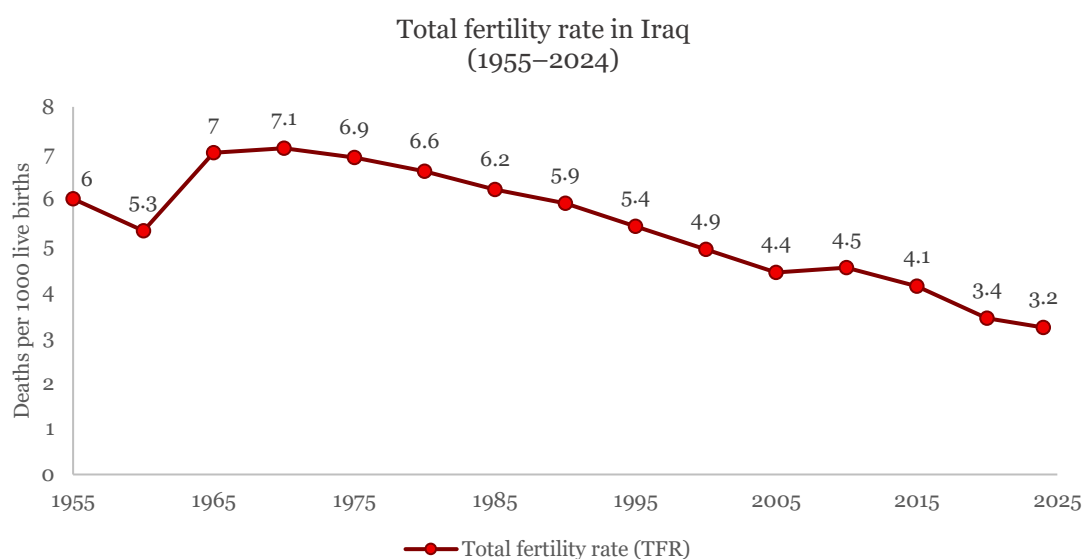


Figure 3. Overview of trends in fertility rates from 1955–2024 in Iraq.

Infant mortality rate and deaths of children under five years of age (1950–2024)

A crucial aspect of understanding life expectancy in Iraq involves examining trends in infant and child mortality rates over time. The infant mortality rate has decreased significantly from 206.6 deaths per 1,000 live births in 1950 to 18.7 in 2024, reflecting a dramatic reduction of approximately 91.0%. Similarly, deaths under five years of age have fallen from 357.9 per 1,000 live births in 1950 to 22.4 in 2024, marking a decrease of 93.8%. However, in 1990, a notable increase in infant and under-five mortality rates occurred, reversing the downward trend observed since 1950 (**Figure 4**).

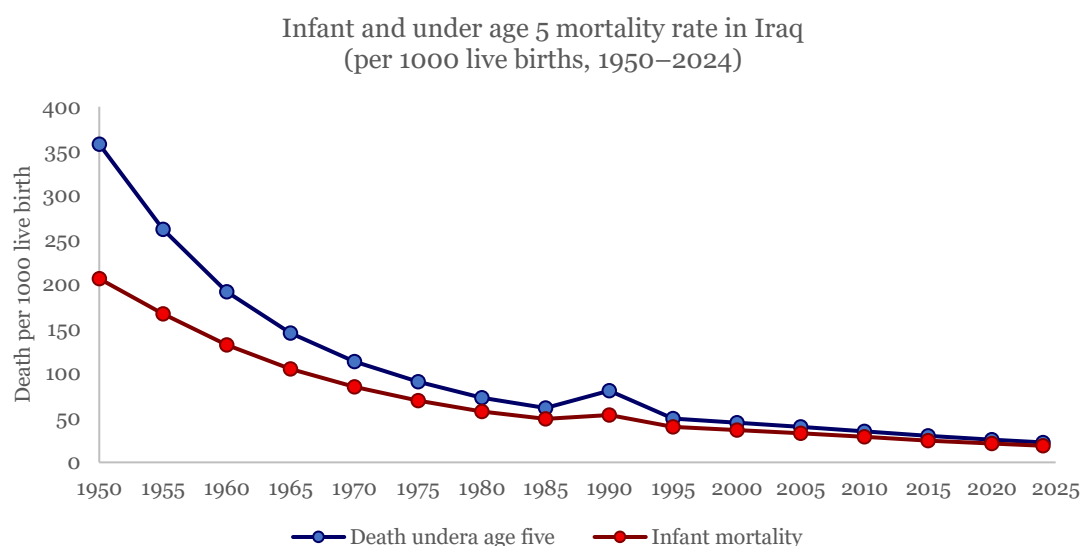


Figure 4. Overview of infant and under-five age mortality rate from 1950–2024 in Iraq.

Discussion

The analysis of long-term trends in life expectancy and demographic changes in Iraq from 1950 to 2024 highlights notable improvements in population health, occurring despite prolonged periods of conflict and instability. Iraq's population increased from 6.4 million in 1955 to more than 46 million in 2024, representing an increase of 623%, with urbanization increasing from 38.4% to 71.8% and the population density from 15 to 106 people/km². Life expectancy increased from 37.4 to 72.4 years, with female life expectancy rising from 41 to 74.2 years and male life expectancy from 34.3 to 70.5 years, narrowing the gender gap from 6.7 to 3.7 years. Infant and under-five mortality rates dropped by more than 90%, though a spike around 1990 reflected the impact of war and system collapse. The total fertility rate decreased from 6.0 to 3.2 live births per woman, indicating a demographic transition while remaining above the replacement level. The median age rose from 15.4 to 20.6 years, reflecting modest aging in a still youthful population. These trends highlight major health improvements and demographic changes but also underscore the fragility of gains in conflict-affected settings and the ongoing need for investment in healthcare and social infrastructure [7].

When comparing Iraq's life expectancy of 72.4 years with global averages and regional neighbors, it is observed that it falls below the global average of 73.3 years. Neighboring countries such as Iran and Saudi Arabia have higher life expectancies of 77.18 and 78.1 years, respectively, which are attributed to better healthcare infrastructure and stable socioeconomic conditions. Other regional countries like Kuwait and the United Arab Emirates have longer life expectancies of 80.45 years and 80.66 years, respectively. On the contrary, among its regional neighbors, Iraq has a higher life expectancy only compared to Yemen, where the average life expectancy is just 66.33 years. This may be due to the fact that Yemen, considered one of the poorest countries, faces severe challenges due to ongoing conflicts and inadequate healthcare access [8]. In contrast, compared to countries with highly developed healthcare systems, such as Monaco and Japan, life expectancies can reach 85 years, demonstrating the impact of advanced medical care and higher standards of living [9] (**Table 2**).

Table 2. Iraq life expectancy comparisons to global, high-class countries, and middle east neighbors

Category	Country	Life expectancy (years)	Key factors influencing life expectancy
Global and high-class countries	Monaco	Above 85	High standard of living, advanced healthcare system
	Japan	Above 85	High standard of living, advanced healthcare system
Middle East neighboring countries	Iran	77.18	Stable healthcare infrastructure, government policies on public health
	Saudi Arabia	78.1	Extensive healthcare investments, high healthcare expenditure
	Syria	72.56	Impact of prolonged conflicts on healthcare and population health
	Turkey	78.68	Advancements in Healthcare Technology, EU integration and reforms
	Jordan	75.02	Stable political environment, health sector reforms
	Kuwait	80.45	Wealthy economy, significant investment in health infrastructure
	Lebanon	76.07	Historically strong healthcare system despite instability
	United Arab Emirates	80.66	High living standards, substantial healthcare investments, health tourism
	Israel	83.53	Cutting-edge medical technologies, significant healthcare spending, universal coverage
	Iraq	72.4	Country with a Better Life Expectancy than Yemen only
	Yemen	66.33	Ongoing conflict and humanitarian crises impacting health

Iraq faces a multitude of interrelated challenges that continue to affect life expectancy and public health outcomes. One of the most pressing issues is the healthcare system, which has been severely weakened by decades of conflict. Access to quality care remains limited, especially in rural regions, where the availability of essential services is inadequate. This situation is further compounded by the impact of international sanctions that have led to critical shortages of medical equipment and trained professionals. Furthermore, the migration of doctors and healthcare experts has exacerbated the gap in service provision, undermining the capacity of the system to meet population needs [10].

Conflict and political instability have also played an important role in shaping health outcomes. The Iran-Iraq War, the Gulf War, and the 2003 US-led invasion have caused long-lasting damage to Iraq's social, economic and healthcare infrastructure. Continuous insecurity has not only resulted in physical injuries and psychological trauma but also disrupted the delivery of public health services. Mental health issues are widespread, fueled by factors such as violence, war-related stress, chronic diseases, parenting children with serious diseases such as cancer and infertility, and the stresses associated with aging [11]. Economic instability also contributes to poor health outcomes. High poverty rates, limited access to resources, substandard living conditions, and inadequate nutrition are all factors associated with increased mortality and lower life expectancy. Without sufficient economic support, people are less able to afford healthcare, maintain healthy diets, or live in safe environments. Environmental degradation and the increasing impacts of climate change pose an additional threat to health in Iraq. As one of the five countries most affected by climate change, Iraq experiences rising temperatures, erratic rainfall, frequent droughts, sand and dust storms, water scarcity, and flooding [12]. These environmental changes have led to a surge in climate-related health conditions, including respiratory diseases, heatstroke, and malnutrition, particularly as agricultural productivity declines [12]. Lastly, the poor quality of food and the absence of effective food safety regulations have increased the prevalence of non-communicable diseases such as cancer, stroke, and cardiovascular disorders. Inadequate oversight in food production and distribution, marked by contamination, pesticide use, and improper storage, poses a serious risk to public health [13]. Together, these challenges

underscore the urgent need for comprehensive reforms and targeted public health strategies to improve life expectancy and overall well-being in Iraq.

The current trends in life expectancy in Iraq have profound implications for the country's future. With a relatively young population, improving life expectancy will be crucial in harnessing the potential of this demographic for economic development. Efforts to rebuild the healthcare system, address environmental challenges and create a stable socioeconomic environment will be the key to improving life expectancy in the coming years. Given the demographic trends and healthcare in Iraq, projections indicate that life expectancy could continue to increase if appropriate public health policies are implemented. However, several factors will determine the extent of these improvements: (1) strengthening of the healthcare system (expanding healthcare infrastructure, especially in rural and underserved areas, could significantly improve life expectancy by reducing mortality from preventable diseases. Policies that promote universal health coverage, increased investment in medical education, and enhanced hospital facilities could help bridge existing health disparities. (2) Economic and social policies (economic stability, poverty reduction, and improved access to education directly impact health outcomes. Investments in social protection programs, employment opportunities, and improved housing conditions can enhance overall life expectancy. (3) Environmental and climate change adaptation (Iraq's vulnerability to climate change poses a significant challenge to public health. Without intervention, rising temperatures, water scarcity, and air pollution could reverse health gains. Sustainable water management, reduction of industrial pollution, and integration of climate-adaptive healthcare policies are essential to mitigate these risks. (4) Conflict resolution and political stability (political instability and recurrent conflicts have historically impacted life expectancy in Iraq. Future improvements in governance, security, and public infrastructure could create a stable environment that supports health advancements.

This study is constrained by its reliance on data from the Worldometer platform, which, while comprehensive, may be subject to limitations in data accuracy and updates. Additionally, the retrospective nature of the analysis means that it may not fully capture recent demographic shifts or emerging trends that could impact life expectancy. The study also does not account for regional variations within Iraq, which can influence the generalizability of the findings. However, the strength lies in its extensive period of time, which provides a detailed longitudinal perspective on life expectancy in Iraq. The use of a robust data source like Worldometer, which aggregates information from reputable organizations, improves the reliability of the demographic trends presented. By focusing on both historical and recent data, the study offers valuable insight into the impact of socioeconomic and health interventions over time, contributing significantly to demographic evolution and the understanding of Iraq.

Conclusion

This study demonstrated that Iraq has made notable progress in life expectancy, rising from 37.4 years in 1950 to 72.4 years in 2024, despite decades of conflict, economic hardship, and environmental stress. Substantial declines in child mortality, improvements in healthcare access, urbanization, and a gradual demographic transition have contributed to this progress. However, persistent challenges such as political instability, weak health infrastructure, climate change, and high fertility rates continue to threaten these gains. Sustained efforts in health system reform, economic stability, and environmental resilience are essential to ensure continued improvements in life expectancy and public health in Iraq.

Ethics approval

The analysis was conducted using publicly available and deidentified data, exempting it from requiring informed consent or ethical approval.

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None to declare

Competing interests

The author declared that they had no conflict of interest.

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Underlying data

Data underlying this study can be requested from the corresponding authors upon reasonable request.

Declaration of artificial intelligence use

We hereby confirm that no artificial intelligence (AI) tools or methodologies were utilized at any stage of this study, including during data collection, analysis, visualization, or manuscript preparation. All work presented in this study was conducted manually by the authors without the assistance of AI-based tools or systems.

How to cite

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