



# Geographical analysis of mortality in Najaf city, Iraq: prospects for Tourism

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## Abstract

The natural cause of the decline in population numbers and the mortality rate are not limited to the size of the population but rather to the qualitative aspects of life, age structure and other characteristics. If attention is directed to the causes leading to deaths from diseases and accidents in detail, then all countries need mortality data to prepare plans for the community, whether in health or community living aspects. Mortality is important to the extent to which health services and health awareness are provided in any society. This study examined the time trend of the mortality level in Najaf governorate in Iraq over the past nine years (2007 to 2015), to determine the size and annual rates of mortality and determine their levels of decline or increase and to indicate some of the causes of those deaths. While the reason for choosing this period depended on the data of the Ministry of Health, Directorate of Health of Najaf Governorate in coordination with the Directorate of Statistics of Najaf Governorate and their use of data and vital records in hospitals and forensic medicine. Tourism in Iraq stands to be a major growth sector. Iraqi tourism is currently underdeveloped and in a state of neglect, due to decades of war, closed regimes and recurrent instability and insecurity. Iraqi cities need to develop and stabilize and begin to meet their tremendous potential making Iraq a global tourism destination and gaining the associated economic benefits. There have been nascent efforts to begin promoting and developing tourism, despite the problems in Iraq and especially in the midst of conflict. In the face of social chaos and obvious dangers, the challenges are great. The Iraq Tourism Board has recruited more than 2,000 employees in 14 centers throughout the country, who are engaged in checking hotels, restaurants and commercial licenses. As the Iraqi and global economy recovers, however, it is clear that there is potential for new investment in the Iraq tourism sector.

**Keywords:** Biological phenomenon, Ministry of Health, Najaf governorate, mortality

## Introduction

The Holy Quran is the a book making reference to God and that death is a purely biological phenomenon, where every individual is inevitably going to die despite all the scientific progress in the field of health and prolonging of life, as stated in the words 'every soul tasted death'. The phenomenon of mortality refers to deaths in a manner such as population change. Deaths are among the subjects of interest to scientific researchers, including those in geographic areas. As one of the sides of the natural movement of the population is the natural cause of the decline in population numbers, not only is the impact of mortality on the size of the population important, but also the composition of the quality of life and age of people. If attention is diverted to the causes that lead to deaths from diseases and accidents (Carpenter et al. 2013), all countries need mortality data to prepare plans for the future community, whether in health or population and mortality issues, these are thus important indicators of the progress of health services in any society.

Najaf is a city in central-south Iraq about 160 km (100 mi) south of Baghdad and its estimated population in 2013 was 1,000,000 people ([www.citypopulation.com](http://www.citypopulation.com)). It is the capital city of the Najaf

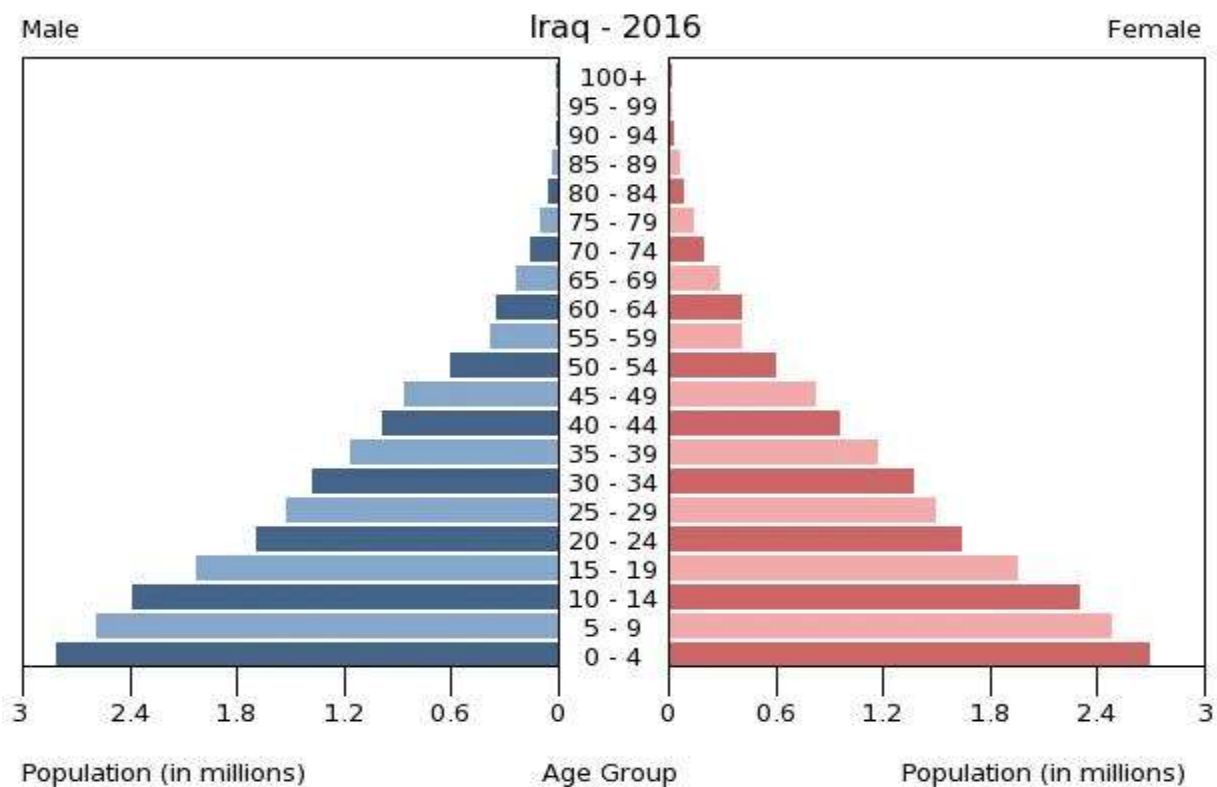


Governorate and is widely considered the third holiest city of Shia Islam, the Shi'ite world's spiritual capital, and it is also the center of Shi'ite political power in Iraq.

The study examined the mortality trend in Najaf governorate over the past nine years, from 2007 to 2015, to determine the deaths and their annual rates and determine their levels of decreasing or increasing, and to also indicate some of the reasons for the deaths. The reason for choosing this period was based on the availability of data from the Ministry of Health, Directorate of Health Najaf province and was in coordination with the Directorate of Statistics Najaf province in the use of vital data from hospitals and forensic medicine. This study was conducted due to a lack of such studies in the Najaf governorate.

The objective of the study was to identify mortality levels. The study included all registered deaths at the Directorate of Health in Najaf belonging to the Iraqi Ministry of Health. This is an important aspect when it comes to tourism promotion. The number of tourist arrivals to Iraq in 2013 was 892,000 and in 2010 there were 1,518,000 tourists and in addition, in 2012, the value of international tourism receipts was \$1.64 billion (Indexmundi.com). Iraqi Kurdistan is considered to be a relatively safe and stable region and least affected by terrorism and in 2012, it recorded a positive 70% rise in tourist arrivals. In addition, in 2007 the area had 106 hotels and this number increased to 405 in 2012 (Newton-Small, 2012). Iraq possesses four World Heritage Sites recognised by the UNESCO as well as eleven supplementary sites on the tentative list and this bodes well for tourism (UNESCO, 2015).

**Figure 1.** Population Pyramid of Iraq **Source:** IndexMundi





## Methodology

Descriptive and analytical approaches were used to clarify the phenomenon. Appropriate demographic analysis methods were used to measure mortality rates. The main problem of the research is that the phenomenon of mortality is a real problem that effectively contributes to the impact of population size and growth. The problem in the form of a set of questions was:

- 1- What is the size of mortality, its rates, temporal, and spatial direction?
2. Do the deaths vary by gender?
3. Is the trend of mortality decreasing or rising?

## Hypotheses

1. Mortality is characterized by temporal and spatial variation in the study area
- 2 - The mortality in the study area varies by type and age, where it is noted that it is higher for males and lower for females, and it is considered high in older ages compared to young ages
3. The trend of mortality is declining in the study area.

The history of Iraq includes a series of famines and deadly epidemics, such as the plague and cholera which swept through the country in the form of epidemiological cycles which converged, and spread infectious diseases that were often fatal such as smallpox, and tuberculosis (Entsar, 2018). This led to a rise in the proportion of deaths, especially children due to lack of health services and therefore the occurrence of severe demographic breakdowns (Medact, 2002). Demographics have affected at least the last three centuries. This period included several studies by those interested in the population and their impact on the social and political life. This resulted in a decline in the population and the transformation of large areas of Iraq into uninhabited areas, because they lack needed health services, or they have moved away from those services due to a general lack thereof in Iraq and some provinces in particular. Iraq began in the twentieth century by paying attention to increasing its oil exports as well as community health. Large sums of money were provided to the health sector, and vaccines have been used against diseases that have been fatal to the population, especially children, and included inter alia diseases such as poliomyelitis and smallpox.

The mainstreaming of healthcare and the deployment of prevention and disinfection methods have resulted in a rapid and substantial reduction in mortality. The mortality rate has been reduced as a result of the improvement in the level of health services provided to the population at a high rate, falling to 20 (Al-Rawi, 1985; UNHCR, 2013) deaths per thousand people in 1960 and to 14 deaths per thousand people in 1975 and to 8 deaths per thousand people in 1987 and 10 cases of the death rate per 1,000 people in 1997 and 5 deaths per 1,000 people in 2006 and 4 deaths per thousand people in 2011 according to the results of the Ministry of Planning and Statistics and the Iraqi Ministry of Health (Confidential report, 1966).

The study of all data for previous periods shows that the high mortality rate among the population, especially the children in 1990, was not a demographic shift or refraction in the population transformation, but a reflection of the deterioration of the health reality. According to the census results for 1977 and 1987, the population rose from 12 million to 16.3 million, respectively. Although the population growth rate has declined in line with the upward trend in growth rates. Which is not consistent with the increase in birth rates and the reduction in mortality rates over the years. All this suggests that the population growth would have been much higher had it not



been for the impact of the war so that the population of Iraq in 1987 would have been more than 18 836 000. This is reflected in the demographic literature of population contraction (Ministry of Planning, 1978).

Economic sanctions between 1990 and 2003 have had a profound effect on the population as a result of the deterioration in human development conditions, living standards and the decline in health and education conditions due to the institutional deficit that has caused the State's inability to fulfill its obligations in all fields previously occupied by it (Burkle and Garfield, 2013). Epidemics found their way to inflict most children under the age of five years. It is very important to follow up and know the location and direction of deaths in Najaf province, as well as the general framework of demographic, spatial, temporal and qualitative differences, and to indicate whether they are obtained at rates that indicate the state of the extraordinary loss of human resources through the annual records of deaths in the health departments of Najaf and analyzed place geographically, and qualitatively. The magnitude and type of deaths will be linked to a review of city planning regarding health, treatment and preventive services provided to the population.

The mortality varies by time and place according to a series of variables that are subject to the province, which confirms this is the vital data during the years of study selected. There are three levels of geographical analysis of deaths, namely, temporal variation of mortality and spatial and qualitative variance of deaths. Deaths are characterized by temporal differences according to a series of variables to which the country is intended to clarify the level of mortality for different years and by looking at the vital data of deaths in Najaf province, which show a clear difference in the number of deaths according to the years that followed during the study period. It should be noted that the death rate is somewhat limited to explain the deaths, but it gives the study the approximate general trend of deaths in Najaf province.

Table 1 shows that the mortality for 2007 was declining. With a mortality rate of 5.52 per thousand with 5680 deaths out of a total population of 10,81,203. While in 2008 it decreased to 5.07 per thousand for 5,670 of the total population of 11,176,24. It continued to decline as it was 4.62 per thousand in 2009 with 5339 of the total population of 115,5087 we call. The mortality rate continued to drop to 4.18 per thousand in 2010, with 5508 deaths out of the total population of 11,960,3, while the mortality rate for 2011 was about 4.27 per thousand of the total population of 1285,823 and 5497 deaths. The decline in 2012 continued to record a mortality rate of 3.82 per thousand from 5053 deaths out of a total population of 1319,608.

This can be attributed to the decrease in mortality rates for some reasons, the most important of which is the improvement of the health services provided to the population and the stability of the security situation in the governorate. It can also be noted that the economic situation improved, and the high level of per capita income and the improvement of the standard of living. As the province is considered a major economic center within the provinces of Iraq, as is the case in Baghdad and Basra. The arrival of displacement and migration due to the volatile situation in the northern and central governorates of Iraq led to the displacement of a large group of the population to the province. The high level of culture and education of the people of the province has contributed to the reduction of mortality. Table 1 indicates that the mortality rate for 2013 has continued to decline, reaching 3.95 per thousand of the 5373 deaths out of the total population of 135,480. While the mortality rate for the year 2014 (3.88 per thousand) was 5394 deaths for the total population (1389549), and the mortality rate for the year 2015 reached a rate of 4.21 per thousand of 6026 deaths out of the total population of the province of 1436578. The mortality rate in the male population increased to 3,200, compared with 2826 deaths for females.



**Table 1.** Death rate in Najaf **Source:** Ministry of Planning and Ministry of Health

Years	Number of deaths	Population	Mortality rate %	The mortality rate in thousand
2007	5680	1081203	0.52	5.25
2008	5670	1117624	0.50	5.07
2009	5339	1155087	0.46	4.62
2010	5000	1193603	0.41	4.18
2011	5497	1285823	0.42	4.27
2012	5053	1319608	0.38	3.82
2013	5373	1354180	0.39	3.95
2014	5394	1389549	0.38	3.88
2015	6026	1436578	0.42	4.21

The deaths in 2007 in Najaf amounted to 3349 deaths, 59.3% of the total deaths, including 1863 males and 1486 females. Where it is clear that the number of male deaths is the highest in Najaf when looking at their qualitative differences. The district of Kufa comes second place in the province of Najaf, which reached 1533 deaths by 26.8% of the total deaths in the province, including 805 of males, while the females reached 728 deaths. Finally, Manathira is ranked third with 798 deaths, with 13.8% of deaths, including 359 for males and 339 for females. The total number of deaths for the year 2008 in Najaf district was 3721 deaths (65.4%) of the total deaths in the governorate, of which 1957 were males and 1764 females. Then came Kufa with 1135 deaths and 19.9% While 553 cases were reported by the women, followed by Manathira (814) and (14.1%) among them 431 males and 383 females. In 2009, Najaf's deaths were 3472 deaths (65%), of which 1,903 were for male deaths and 1569 for females, while Kufa was ranked second with 1711 deaths (21.8%), of which 597 for males and 574 for females.

Manatharah district, which comes third in the governorate in the cases of deaths which amounted to 696 deaths (12.8%) of the province, including 352 for males and 344 for females. Najaf has reached 3526 deaths by (64.1%) in 2010 of the total governorate. Including 1977 death of males and 1559 females. While the mortality rate in Kufa was about 1622 (22.3%), of which 645 were males and 589 females. The mortality rate in Manathara district was 738 deaths (13.4%), of which 386 for males and 352 for females.

The number of deaths in 2011 in the district of Najaf is about 3126, of which 1723 males and 1403 females, while the district of Kufa was 1364 males were about 728 while females about 636. The district of Manathirah came at a late rate of the total mortality of the province by 1007, of which 548 for males and 459 for females. Najaf's deaths were 3191, of which 1757 were males, and 1434 were females in 2012. Kufa had 1037 deaths, 562 males, and 475 females. While Manathira district has reached 825, including males and 416 females. The mortality rate in Najaf is about 3508 in 2013, of which 1937 is for males and 1571 for females. Kufa reached about 1101, including 586 for males and 515 for females. Manathara district is ranked third by 764 deaths; males were about 403 and females 361. Table 1 shows that deaths in 2014 also varied in Najaf, reaching 3110, showing a clear decline for previous years. The males were about 1632 and females were 1488, while Kufa was 1322, of which 686 males and 636 females. Manathrah district recorded 962 cases, of which 500 were males, and 462 were females. Has reached the death of Najaf in 3319 were males, including 1730 females while 1589 in 2015. While the number of deaths in the district of Kufa 1602, including 861 for males and 741 for females.



Finally, the mortality in a district of Manathira reached 1105, where males accounted for about 609 and females 516. These stages and levels are due to the diversity of the population size according to the districts and the size of the area, so we see that Najaf district is always ranked first, then Kufa, followed by Manatharah.

Immigrant numbers increased as they moved from provincial centers to the capital and from remote administrative areas (districts) to the nearest and from the closest to the centers of the provinces. The concentration of administrative, educational, commercial and health services, etc. in the capital and in the centers of the provinces has been an attraction for them from the less developed centers where the goal of achieving a living standard and modern life for the family would not have been achieved without migration. Another way of conceptualizing tourism is as a form of voluntary temporary mobility by which people travel to another location – often for leisure or visiting friends and relations. This way of thinking about tourism helps differentiate it from forced mobility, as in the case of political or environmental refugees, for example, people having to move because of a major flood, or permanent migration.

The concept of temporary mobility therefore includes a wide range of tourism-related phenomenon such as leisure travel, health tourism, volunteer tourism, educational travel, travel to second homes, working holidays and business travel. The focus of the modern industry in the cities, with its employment opportunities, is to attract learners with educational qualifications for recruitment, as well as skilled labor, industrialists, traders, transport workers, the tourism sector (hotels, restaurants, etc.) These were not inexpensive.

The decline of the urban population was greater than the decline of the rural population in some periods to some provinces such as Nineveh, Babylon, Maysan. However, the high rates of urbanization and the sharp decline of rural populations have masked this phenomenon. In governorates with relatively low unemployment rates, the nature of their economy plays a major role in determining the behavior of the phenomenon of unemployment as well as its relative security stability. The large economy of Basra and the presence of oil facilities and the port all increased the chances of getting a job. The security stability and the presence of border crossings with Iran have revived the economy of Wasit and Sulaymaniyah. Karbala and Najaf are considered to be the most important areas of religious tourism, and Karbala is a relatively active agricultural area. Iraq is an example of a nation attempting to develop its tourism economy while experiencing internal war.

Undoubtedly, events such as recessions, globalization and modernization and wars generate sufficient dissatisfaction for residents of many societies, and potential dissidents can then find plenty of people to draw upon for recruits and support in attacks (Lutz and Lutz, 2008). This evident in the current Syrian conflict which has spread into Iraq. Despite the problems in Iraq, there have been nascent efforts to begin promoting and developing tourism in the midst of the conflict. In the face of social chaos and obvious dangers, the first organized tour of the country since the United States-led the invasion took place in September 2003, arranged and operated by Hinterland Travel in the United Kingdom. Since then, there have been many media reports of tourists visiting Iraq on small, organized tours or individually.

“Iraq is visited by five million tourists per year, a government official has said, noting that those come for both religious festivities and ancient sites. Mahmoud al-Zubaidi, a general director at the tourism ministry, told state-run al-Sabah newspaper that procedural conflicts between the ministries of interior and foreign ministries, border crossings and tourist companies has led to a failure to “collect USD10 from each visitor, instead applying the charge to only 10 percent of those”. According to Zubaidi, while there are 750 registered tourist and travel agencies, there had been 300 other “bogus agencies” which were closed across the country. Iraq receives millions of



Shia pilgrims every year who visit holy shrines in Najaf and Karbala. Iraq's economy has been severely affected by the war against Islamic State militants which lasted from 2014 and until the end of 2017." (IraqiNews.com).

If there is "...political stability and security, tourism in Iraq stands to be a major growth sector. The Iraqi tourism sector is currently underdeveloped and in a state of neglect, due to decades of war, closed regimes and recurrent instability and insecurity. However, as Iraq continues to develop and stabilizes, it can begin to meet its tremendous potential as a global tourist destination, and gain the associated economic benefits. A more developed tourism sector in Iraq will play an important role in diversifying Iraq's economy and providing new private sector jobs, both in major cities and beyond. Iraq's construction sector will also benefit directly from the building of hotels, museums, restaurants, and other attractions as well as needed infrastructure enhancements..." (Dabidian et al., 2013).

Not all of Iraq is subject to the frequent violence of Baghdad, and domestic tourism is beginning to thrive in some areas. In addition, Iraqi tour operators have organized trips for Iraqis to neighboring countries – something they were not permitted to do under Saddam Hussein's regime. Several courses in hotel and tourism management are now being offered at colleges and universities in the far northern part of the country, which has been a protected region since the first United States-led invasion of the country in the 1991 Gulf War. Although it understands the difficulties of developing the industry in the face of war and insurgent attacks, the Iraqi Tourist Board is making preparations now for tourism development in the future when peace is achieved. In the midst of the insurgency, the tourist board continues to employ over 2,000 staff who are busy in 14 centers throughout the country checking on hotels and restaurants and issuing business licenses.

## Conclusions

The study recorded different mortality rates as it declined in 2007. Najaf has the highest mortality rate followed by Kufa and then Manathira. The province of Najaf has occupied a mortality rate close to the general rates in Iraq and took a decline in successive years. Deaths varied regarding gender between males and females, with males accounting for 60% of the total, while females were about 4% and in all parts of the city. The impact of this on tourism is immeasurable but progress is gradual and consistent. The Iraq Tourism Board has recruited more than 2,000 employees in 14 centers throughout the country, who are engaged in checking hotels, restaurants and commercial licenses. As the Iraqi and global economy recovers, however, it is clear that there is potential for new investment in the Iraq tourism sector. The key will be to help the government build an effective and integrated multisector approach to identify and attract high value added investment into the sector and provide the maximum development impact for the local economy.

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