

ORIGINAL ARTICLE

Infectious Diseases and their Consequences on the Population Changes of Kermanshah Province in the Qajar Era, 1789-1925

Abstract

One of the causes of premature deaths in different parts of the world and Iran during the Qajar era was the spread of infectious diseases in the 19th century. Meanwhile, in general, Iran did not have favorable health conditions. Kermanshah, as one of the main highways in the west of the country, the gateway to Mesopotamia and the most important pilgrimage route of Shiite Iran, has been one of the busiest travel, commercial and pilgrimage routes, and hence, was exposed to the spread of various infectious disease. The purpose of this research is to investigate the prevalence of infectious diseases in Kermanshah during the Qajar era and its effects on the population change and death. The research method is historical and descriptive-analytical; documentary methods have been used to collect the information. The results and achievements of the research showed that the outbreak of infectious diseases, especially cholera, plague, and typhoid, occurred many times in Kermanshah and was one of the important factors in the significant decrease in the population of this state. The results of this research have shown that the ignorance, illiteracy, and superstition, the low level of medical knowledge, the inappropriate and insecure roads, the poor performance of the king and the local rulers in making appropriate decisions to prevent the spread of such diseases, had a significant impact on the extent of the casualties and the population decline.

Key words: Communicable diseases, Cholera, Population decline, Qajar, Kermanshah, Iran, History of medicine

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Introduction

The following study investigates the spread of infectious diseases in Kermanshah and their effects on population reduction in the Qajar era under four main topics. The first topic deals with the problem, background, and research method. The second one mentions the state of public health and the role of infectious diseases in the Qajar era. The third topic discusses the state of health, especially contagious diseases in Kermanshah, during the Qajar era, and the final one shows the effect of these diseases on population decline.

The pieces of evidence show that there has been very little progress in the field of medical structures and equipment, as well as the treatment of diseases and the prevention of epidemics in Iran during the Qajar era, especially until the ministry of Amir Kabir. These problems make society face severe mortality and population decline during epidemics. More attention was paid to two issues among the ones related to the health of the population of Iran during the Qajar era in the region of Kermanshah province and city: first, lack of health facilities, such as health care centers and trained doctors, and second, lack of people's knowledge about the issues related to the hygiene and health in the society which led to threats and damage to the community. In this regard, this research aims to answer these questions: what was the state of health in Kermanshah during the Qajar era?; what infectious diseases spread in this region?; and whether the spread of infectious diseases played a role in the mortality and demographic changes in Kermanshah during the Qajar era?

This research used the historical-descriptive-analytical method and evaluated the issue based on historical sources, travelogues, newspapers, and documents to identify the related events accurately. The historical method was used to collect the data. The historical method means the targeted reconstruction of the past, which is performed through collecting, and evaluating events, along with determining the correctness and composition of events, in order to show the events and obtain a defensible result. Analyzing the occurrence of infectious diseases, statistical surveys, and using the tools of graphs and tables are among other research methods and tools.

The review of the conducted research shows that despite some research in the field of health and infectious diseases, no comprehensive studies have been conducted on the status of infectious diseases and population changes in the province of Kermanshah during the Qajar era.

In 2018, Mahnaz Ghanbari's thesis entitled "The Health Status of the People of Kermanshah in the Qajar Period" investigated the unsettled health situation of the Kermanshah region, and the spread of infectious diseases before the advent of modern medicine. She manifested the infection of a large part of the residents of Kermanshah to such diseases, the deaths of many people on this land, and the government's actions in the health field. In her studies, she also mentioned the transportation of corpses to Iraq as one of the most important factors in spreading infectious diseases in Kermanshah.

One chapter of the English book of *The city and state of Kermanshah* written by Professor William Flor, dealing with medical care in the west of the territory of the Qajar, was translated and published in the *Tarikh Andish* journal in the Fall of 2020. He mentioned the spread of infectious diseases in the Qajar era and the health centers of this state in general. However, he did not examine the cholera disease in detail or write anything



about the causes of the spread of this disease. Therefore, it seems necessary to carry out this research on the history of health and treatment in Kermanshah province. The main source of this study is the book “*Global Plague*” including the collection of Farmanfarma’s correspondence and documents from 1891-1892. It has been published in Tehran through the efforts of Ismail Shams, Mansoureh Etehadiyeh, and Azam Ghafouri (2020). Hadi Makarem wrote a treatise describing the plague of Baghdad and Kermanshah in 1830. Based on the observations and reports, the documents published in this treatise arose from the heart of the events and are reliable sources. Many researchers can use them in the health field in the mentioned period.

Health and infectious diseases in Kermanshah during the Qajar era

Kermanshah region is in the west of Iran. It is limited to Kurdistan province in the north, Hamadan province in the east, Ilam and Lorestan provinces in the south and southeast, and Iraq in the west (Ittehadiyeh, Shams, and Ghafori, 2013, p. 20) (Figure 1). The most important feature of Kermanshah is its location on the transportation highway from the east to the west of Iran (Smell, 1934, p. 11). The city of Kermanshah is located near the gates of Zagros and at a low altitude. It is a suitable route to enter the Iranian plateau and easy communication with Mesopotamia, and it is an important center in the west of Iran (Zarei, and Kamali, 2017, p. 35).



Figure 1. The territory of Kermanshah state in the Qajar era (© <http://worldweather.wmo.int/en/city.html?cityId=1452>)

According to the writings in the travelogues, the population of the country’s western region was estimated to be 600-800 thousand people at the beginning of the Qajar era (Nozari, 2014, p. 145). Most of this population lived in the Kermanshah region. The most important feature of Kermanshah is unity and harmony in natural and cultural characteristics. The placement of this area on the highway and border of Iran and Mesopo-



tamia turned this area into a strategic location. There were commercial and cultural relations with the Ottoman government in these areas for a long time, especially during the Qajar period, so the people of this region made a living through commercial and economic exchanges with the Ottoman government. In addition, making the pilgrimage to the al-atabat al-aliyat (holy shrines) was accessible to them. Although these relationships with the al-atabat al-aliyat were considered an economic advantage for the region, they caused many health problems for the residents of urban and rural settlements. The most important problem of this relationship is the transmission and spread of contagious diseases, such as cholera, plague, and smallpox, from the lands of the Ottoman government to the region and the country. In this period, the absence of a governmental health organization, lack of proper personal hygiene, the spread of superstitions, and the misunderstanding of the commands of Islam caused more spread of the disease; Also, the traditional way of living, the population density, the low level of people's income, structural and infrastructural problems, such as very unsuitable roads and the lack of communication and transportation facilities, especially the lack of health and treatment facilities, adversely affected the severity and spread of infectious diseases in Kermanshah during the Qajar era. In addition to these problems, the lack of desire and trust of a large part of the people in western treatment methods, especially in the early Qajar period, caused the significant impact of infectious diseases, the increase of numerous deaths and the decrease in population in the years that the Qajar rules in this region. This issue has made controlling and treating these diseases more difficult. Its destructive effects on different aspects of people's lives have become more apparent. Several factors have been effective in the spread and frequency of epidemics and population decline in Kermanshah during the Qajar era.

1- Factors affecting the spread of infectious diseases in Kermanshah

The first and most important factor in the spread of diseases was the rulers' indifference towards the country's health affairs. This neglect was to such an extent that the king, the courtiers, the rulers and governors in different regions either hid in the palaces or ran away to other places and left the city during the outbreak of infectious diseases instead of thinking about a solution (Manuscript No. 295-005426, 1856). It was written in the Kermanshahan newspaper that while many people were dying, Prince Emad al-Dole went to Haji Karim castles for two months due to the outbreak of cholera in the city. An army of Golpayegani soldiers camped with him near the castle, but the rest of the artillery army was in the town (Dolat Elliyeh Iran Newspaper, 1851, pp. 247). According to the letters written from Tehran, the people of the capital were very disoriented, wild, and angry because of the cholera epidemic coming from Baghdad towards Kermanshah. They complained too much about the Iranian government's indifference to implementing the health maintenance rules (Akhtar Newspaper, 1637, p. 4671).

The second factor in the spread of infectious diseases and the destruction of humans was the unfavorable condition of the roads. Until 1918, Iran did not have paved the road in its economic sense. There were no railroads of note. The connection between the cities and the rural areas was provided through trackway roads, caravan roads, and special carriage lanes. Due to the lack of paved roads, Iranians only used horses and camels. Lord Curzon inevitably used the word "road" because the roads in Iran were byways or the footprints of horses, donkeys, and mules (Ketabi, 2002, p. 37).



It is not far from the truth that some famines in Iran were not only due to the lack of food but were also observed at a time of abundance. However, the roads were so impassable that sometimes all the goods and cattle were wasted on the mountain roads (Habl Al-Matin Newspaper, 1928, p. 4). The Basra-Baghdad route through Qasr Shirin of Kermanshah was more than 120 Kilometers, not suitable for a carriage (Zargari Nejad, Sahril, and Forzish, 2016, p. 82). The terrible situation, inappropriate means of transportation, and the insecurity of the roads added to the burden of people's problems (Biglari, 1993, p. 374). The unfavorable conditions of roads and ways in Iran, especially in the west of the country due to the mountainous and impassable roads, sometimes caused the significant number of the death toll in that region (Moriyah, 1976, p. 63).

The third factor in spreading diseases and death was the lack of personal and public hygiene as well as the conveyance of the corpse to al-Atabat al-Aliyat. The hovels, huts, and disadvantaged dwelling places in which families and their animals lived were disastrous from the public health viewpoint (Floor, 2007, p. 72).

Moreover, it was considered one of the influential factors in the spread of infectious diseases. Unhealthy drinking water was the other factor effective in the spread of the diseases (Akhtar Newspaper, 1891, p. 5471). One of the reasons for that was a wrong understanding of Islamic law which says running water or stagnant water in certain sizes does not get infected with impure elements. However, although this theory may be true from a religious point of view, it was certainly not permissible from the point of view of medical science (Floor, 2007, p. 81).

The primary means of disease transmission in Kermanshah was water streams running from one neighborhood to another and water from one house to another; therefore, it could disseminate any dirt quickly (Fourieh, 2007, p. 289). "Dr. Schneider narrates about the terrible plague of 1882. They washed the dead body and their clothes and took water for drinking in the same stream several Zarr (each Zarr is approximately 104 centimeters) away from there (Ittehadieh, Shams, and Ghafari, 2013, p. 41). Kermanshah was in poor health condition due to Abshuran stream wastewater freely flowing without cover from south to northeast, and this issue was constantly endangering the health of the residents. Waste disposal was unsanitary, and waste was mixed with drinking and washing water (Ittehadieh, Shams, and Ghafari, 2013, p.41). The water of the streams was polluted and unsuitable for drinking. People poured garbage, and animal and human waste into the water streams (Soltani, 2003, p. 549). The discharged water from some houses formed the water supply for poor neighbors (Borrell, 2013, p. 11). Fourieh believed living in a polluted and dirty environment was commonplace for Iranians. (Fourieh, 2007, p. 388). Based on this, unsafe drinking water was one of the most critical factors in the transmission of diseases, especially cholera. People who washed the dead bodies, instead of the money, sometimes received the clothes of that dead person (Borrell, 2013, p. 11). In addition, transferring the corpses to al-Atabat al-Aliyat and the issue of the lack of hygiene caused the spread of more diseases. It took months for the bodies to be transferred from the farthest parts of Iran to al-Atabat al-Aliyat to be buried. This was the leading cause of infectious diseases, such as cholera, especially in the hot months of the year. According to the writings of the Imperial Bank, in 1891 AD, 25 thousand people formally, with their passports, crossed the Iranian border with horses, donkeys, mules, and carriages. There were, however, numerous people traveling on foot without having any documents. Then,



it was estimated that maybe 75 thousand people pass through this route of Kermanshah in a year (Ittehadiyeh, Shams, and Ghafari, 2013, p. 30). Henry Binder wrote about Iranian pilgrims' mass transportation of corpses in his travelogue. In order to carry the corpses, thousands of caravans formed from the farthest parts of Iran. These dead caravans usually stopped within five kilometers of the surrounding villages, but they would soon stink that place. Apart from this, Iranian pilgrims spread infectious diseases to al-Atabat, and sometimes, on the contrary, Iranian pilgrims got infected with common diseases there in Arab Iraq and brought them with them to Iran (Atash, 2011, p. 68).

A. Interior Ministry

According to the documents, some people smuggled their family or relatives' newly dead or rotten bodies to be buried in al-Atabat al-Aliyat. Therefore, there were some people who earned money in this way to maintain their families. They took some money from the owners of the dead, and as soon as they removed the body from its place, they threw them into the wells or drowned them in the rivers, or they buried them in farther places (Manuscript Box 38, Folder 45, Serial 19, 1907).

Figure 2 shows how newly dead or rotten bodies are smuggled to be buried in al-Atabat al-Aliyat by a group of people who make money in this way.

People generally did not believe in the contagiousness of some diseases and did not isolate sick people (Floor, 2007, p. 18). Children gathering in a *maktab* (lit. school) and drinking water from the same jar, men gathering in coffeehouses, and smoking each other's hookah were responsible for spreading infectious diseases (Ittehadiyeh, Shams, and Ghafari, 2013, p. 42). About the lack of personal hygiene, Dr. Mehdi Qudsi, the president of the Pasteur Institute of Iran, when visiting one of his relatives who was suffering from typhoid disease, wrote: "I observed that one member of the family washed the bedpan of the typhoid patient in the running water of the aqueduct while the kitchen dishes were piled up for cleaning in the same water" (Azimi, 2010, p. 149).

Another factor that accelerated the spread of infectious diseases was the hot bathrooms in the city (Najmi, 1991, p. 439). The unhealthy way of cleaning the body in the bath was practiced in Iran for a long time. During the Qajar era in Kermanshah, the bathrooms belonged to men for some hours of the day and to women for other hours. (Soltani, 2003, p. 549). Dallaks (bathroom workers) used to take cupping every day in the courtyard of the hot bath (Soltani, 2003, p. 549) Considering the high fuel cost, the bathrooms were warmed up with thorny bushes, dry animals' dung, and bones, so there was always an unpleasant smell around the baths (Dalmani, 1916, p. 638).

Public bathrooms were convenient places to spread infectious respiratory, skin, and fungal diseases (Molai Tovani, and Gholampour, 2013, p. 139). Sometimes, the water in the public bathrooms was so dirty and stagnated that it was not surprising to be accountable for the spread of infectious diseases, especially when all kinds of people with different diseases would enter the caldarium and wash their bodies (Soraya Newspaper, 1896, p. 7).

The spread of superstitions was among other factors in this area at that time. Some beliefs and customs indicate the weakness of the society's general culture during the Qajar era (Tajbakhsh, 2004, p. 827). Low-income and illiterate people refused to see foreign doctors due to poverty on the one hand and the lack of belief in the effect of drugs on



the other hand. They preferred visiting fortune tellers and the so-called prayer writers (Hasanbeigi, 1998, p. 96). In Shahabad, in the west of the country, they wrote a verse to heal the sick. Then, they washed the paper in a dish of rose water and water and gave the water to the patient or sprinkled it on his head (Afshar, 2003, p. 416).

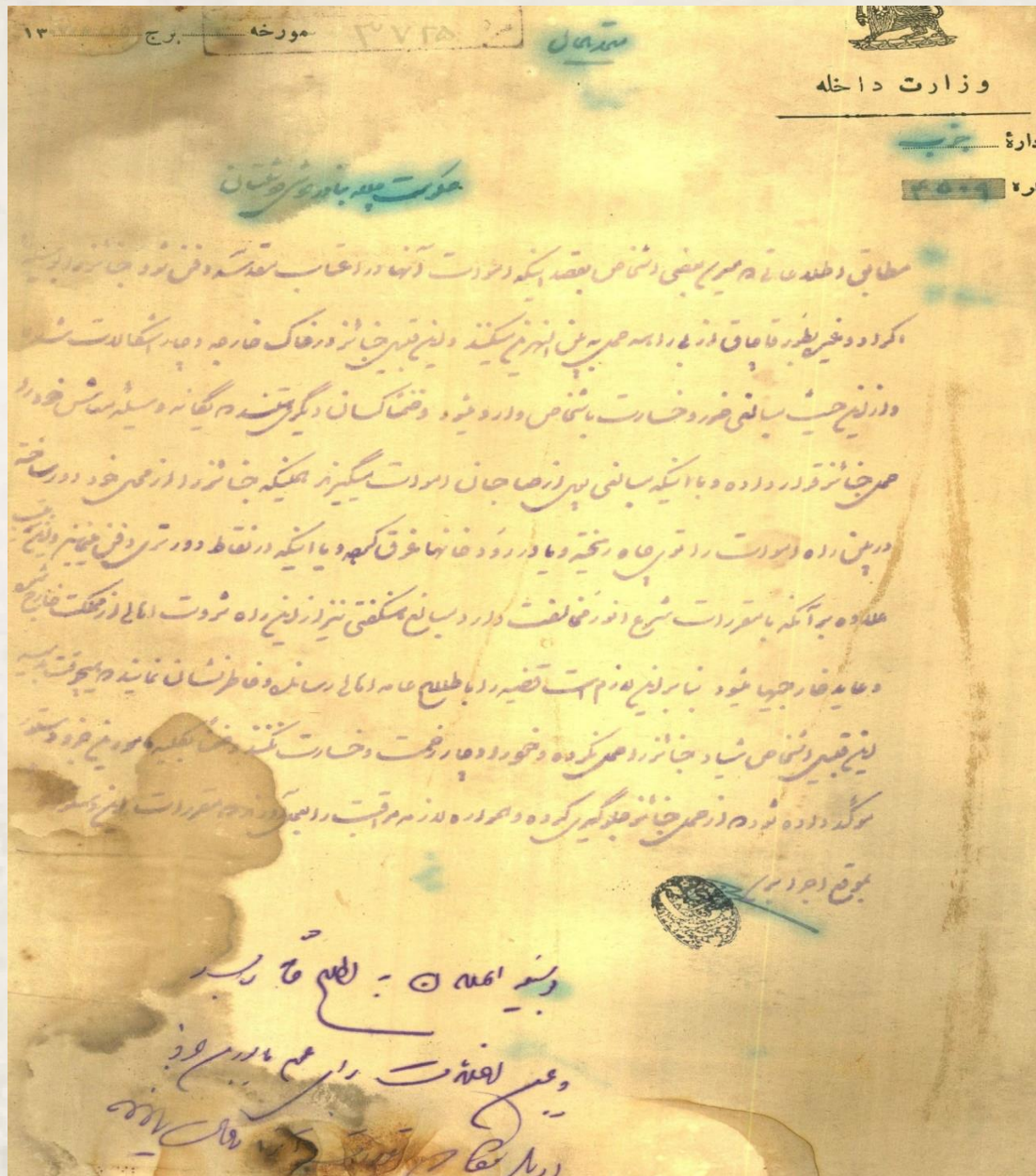


Figure 2. Burring the newly dead or rotten bodies in al-Atabat al-Aliyat by smugglers (Manuscript Box 45, Folder 19, Serial 38, 1907)

With their usual superstitious opinion about celestial bodies, ordinary people relate the illness to the influence of the Canopus star, which was visible on the horizon a little before sunrise at that time (Flora, 1942, p. 19). Others considered the epidemic a result of God's anger to punish sinful people. On the other hand, they read the Qur'an's verses



and used the imams' turbah (medicinal soil) without observing the hygiene standards to cure the disease. Ignorance and lack of knowledge were other factors hindering people from fighting against infectious diseases (Flora, 1942, p. 19).

2- Actions of the rulers in the prevention of infectious diseases

There are different traditions and documents regarding the actions of local and national rulers in the Qajar period. Below, we mention some of the most important actions that were more or less performed by the central government of Iran and the local rulers, including the governors of Kermanshah province.

A. Leaving the areas and prohibition stopping and returning

To protect themselves from infectious diseases, some of the Qajar rulers resided out of the city, enjoying a good and clean climate. (Manuscript No. 295-005426, 1856).

B. Orientation to modern medicine

The rapid movement of European countries towards global health started in the 19th century. The court, princes and some Qajar ministers in modern medicine in Iran took the first actions in this regard. The outstanding measures taken in the field of modern medicine in the Qajar era are as follows: sending some students to Europe to learn new science during the time of Fath Ali Shah and Prince Abbas Mirza, the use of modern medicine and new drugs, Mirza Taqi Khan's health actions, writing the first treatises on variolation, approval of variolation in the parliament and allocation of children's variolation budget (Najmi, 1991, p. 418; Al-Dawood, 1992, p. 62; Zia Al-Mahmoud, 2020, p. 59; Manuscript No. 138-000, 1910).

According to Pollack's remarks, practically all members of the royal family, which were about ten thousand people, were variolated to protect against the disease during this period. In the western province of Iran, Mirza Mohammad Ali Dolatshah, the ruler of Kermanshah, and the brother of Abbas Mirza, also took similar actions. Mohammad Ali Mirza Daulatshah, the brother of Abbas Mirza, also made efforts in this direction to carry out variolation in areas, such as Kermanshah (Pollock, 1984, p. 304).

C. The establishment of a hospital, formation of a municipality and quarantine

In 1866, Abdul Hossein Mirza Farmanfarma, the ruler of Kermanshah, established a hospital there and paid 70 tomans for its monthly fees. Of course, this was not enough and more money was needed. In 1880, Mrs. Steed Tovant opened a pharmacy and provided medical services to ambulatory patients (Floor, 2007, p.74). Farmanfarma found it necessary to establish a legal municipality as soon as he entered the capital of Kermanshah province and saw the unfortunate situation of the city. Then, he determined and formally announced to form a municipality (Bisotoon Newspaper, 1919, p. 191). He telegraphed to Mushir al-Doulah in Mahi Dasht that quarantine should be established in Biston and Mahi Dasht, after receiving the government's order about the outbreak of cholera, ordered to disinfect the city and quarantine the houses (Ittehadiyeh, Shams, and Ghafari, 2013, p. 84).



D. Sanitizing the place of business

Ebrahim Khan Motamed Derakhshan imitated the sanitization of the business place on the agenda for the first time. He ordered that butchers and bakers should tile the front of their shops (Soltani, 2003, p. 549). According to the report of Dr. George, the head of health maintenance, the quarantine was placed on the Ottoman border due to the outbreak of cholera in Kermanshahan, Hamedan and Qasr Shirin (Manuscript Box 22, Folder 121, Serial 36, 1910).

E. Establishment of health maintenance associations

Persia was rarely the source of infectious diseases but was surrounded by diseases (Elgood, 1933, p. 572). The western borders of Kermanshah have always been subject to severe outbreaks of contagious diseases that spread from Mesopotamia and Baghdad. In 1880 AD, Naser al-Din Shah ordered the formation of the Health Maintenance Assembly in Tehran to enhance health conditions in Iran. The assembly recommended a way to improve public health and prevent the spread of contagious diseases to other places. The first health maintenance meeting was held on the 26th of Rabi al-Thani (the fourth month of the Islamic calendar) in 1880. The establishment of the Health Council, preventing the movement of pilgrims and transporting the corpses, and approval of health accreditation and quarantine were among these enactments. Kermanshah, which was on the way to Al-Atabat and the western gate of Iran, was the most important place to implement these orders (Flora, 1942, pp. 120, 124; Elgood, 1933, pp. 571-573; Roustaei, 2004, p. 355). However, due to the lack of support, the Health Maintenance Council stopped working after six months because one of the most important tasks of this Council was to observe the health issues of the city residents (Manuscript No. 295-007295, 1915). Although we do not know the exact date of the establishment of the Health Association in Kermanshah, the point that it was the western gate was more or less noticed in the telegram of the government of Kermanshah to the Ministry of Interior that cholera disease appeared in this province. The text of the telegram considered it necessary to inform the health maintenance. It warned the Department of Foreign Affairs that the Tehran embassy and the officers and asked them to execute the commands. In another letter from Dr. George, the head of health maintenance, warned against the likelihood of the prevalence of cholera in Kermanshahan, Hamadan and Qasrshirin, and it was requested to establish the quarantine at the Ottoman border. Therefore, this was reported to the political agents and consulates to give new visa appointments to pilgrims of the Holy Path, such as Mashhad and Al-Atabat (Manuscript Box 36, Folder 12, Serial 10, 1910) (Figure 3).

3- Infectious diseases and population changes in Kermanshah during the Qajar era

One of the factors affecting the demographic changes of Kermanshah region in the Qajar era was the spread of infectious diseases. For this reason, every year, infectious diseases such as plague, malaria, tuberculosis, measles, cholera and typhoid killed many people in Iran, especially in the country's western regions. This caused famine, poverty and destitution, and a death toll, leading to a fall in the population (Azimi, 2010, p. 144). Cholera appeared in the spring of 1839, and a year before, the disease raged in Nayin, Kashan, Qazvin and Kermanshah. Dolatshah, the governor of Kermanshah, attacked



Baghdad, but he was forced to evacuate his forces due to cholera. During this retreat, he died due to illness, and his army lost 2000 people, and while returning to Hamedan, he lost 30 to 40 people daily (Flora, 1942, p. 38).

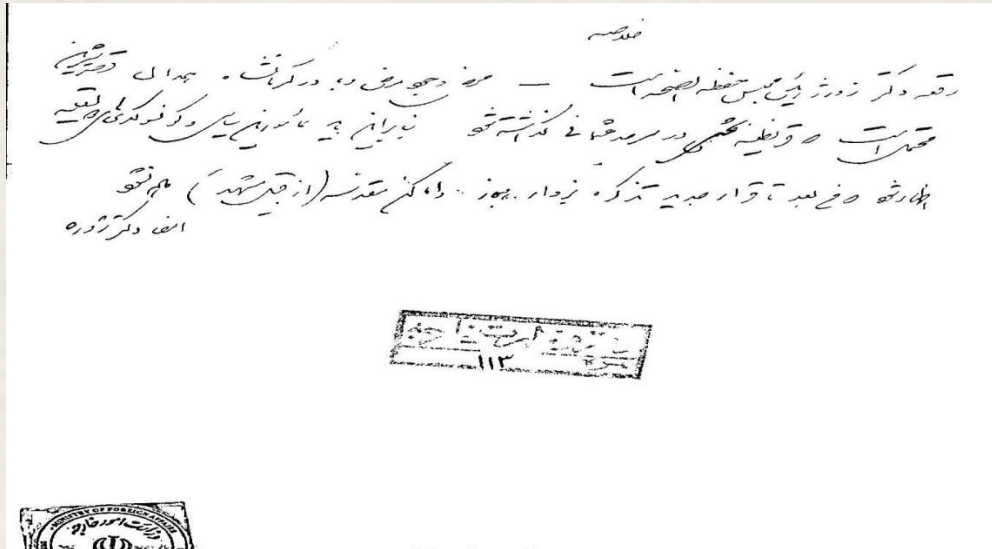


Figure 3. The letter of Dr. George, the head of health maintenance, to establish the quarantine on the Ottoman border due to the outbreak of cholera in Kermanshah, Hamadan, and Qasrshirin (Manuscript Box 12, Folder 36, Serial 21, 1910)

In the 1830s, plague and cholera were spread in the cities of the Ottoman Empire. Hamedan and Kermanshah were among the first cities that were exposed to these diseases due to the large crowd of pilgrims returning from Iraq (Avery, Humbly, and Melville, 2019, p. 398). The Plague disease continued for about three years without stopping in Kermanshah, and almost nine-tenths of the city’s population was infected, causing a sharp decrease in the population of cities and villages (Avery, Melville, and Hambley, 2019, p. 398).

Regarding the plague in 1831, an important historical note has been obtained, which Natiq fully mentioned: “In the year 1831, the plague spread in most of the cities of Iran and Rome. There is no precise account of how many were lost in Kermanshah; it is said that two or three hundred thousand people were lost” (Manuscript No. 295-005-5065, 1831). Kermanshah was destructed by the plague for three consecutive years until 1834 AD, and as a result, its population was greatly reduced. Therefore, the first thing Fraser encountered when he arrived in Kermanshah was the acres of land covered with new graves created within the past two years. In 1860, cholera was severe in Kermanshah, and many people died. The disease spread in the city of Muharram¹ Month. Dr Hanbarshan Brugshan writes, “It is amazing that this dangerous

1- The first month in the Islamic calendar.

disease moved towards the west with an unimaginable speed and attacked Kermanshah and caused many deaths there; almost ten people were killed every day (Soltani, 2003, p. 343).

The disease appeared in Kermanshah on August 28, 1861, where it is said that 300 people out of 25,000 population died per day. The Ottoman authorities accused the Iranian government of neglect. At the same time, Dr. Toluzan, Iran's agent, argued that the plague originated in the mountainous part of the Kurdistan region in Iran and Iraq (Floor, 2019, p. 61). The plague spread in Kermanshah in July 1861. Unfortunately, this coincided with a year of drought and a lack of food. In October 1834, cholera broke out again in Kermanshah and then in Iraq. In 1872, approaching the city walls, Belhouz saw the new graves, filled with the bodies of fifteen thousand people who died there in the last two years. A cholera outbreak was observed in Kermanshah on January 25, 1861, which rooted from the pilgrims' route from Karbala and stopped in Qom. At that time, half of the city's population fled from the city, while the other half were apt to do the same. The city was deserted by the 5th of Shawwal². Thirty people died on the 3rd of Shawwal, and the next day ten people died from the disease, but the death rate began to decrease on the 7th of Shawwal, and the prevalence continued until the end of November 1889. There was a serious cholera outbreak in this city and state in 1904. In 1905, however, cholera did not exist though many people died due to other diseases, and with the emergence of the three-year semi-famine conditions, the death toll increased. In Dhul-Hijjah³ 1905, it was believed that cholera spread in Qasr Shirin, but it was soon understood that it was not cholera but another disease that caused many deaths in Qasr Shirin (Floor, 2019, p. 62) (Table 1 and Figure 4).

On April 10, 1904, four Iranian doctors announced in a report that they had not observed any cholera cases in this city. However, the quarantine measures were still in place because cholera had spread in Kangawar and killed many people. The quarantine system was severely tested here and elsewhere, and Mr. Fazil Momqani, one of Najaf's famous scholars, was disrespected when he travelled to Mashhad with a large number of his students (*tollab*). The cleric had refused the quarantine rules in Kangavar, which had led to an attack by the students and local supporters of the quarantine staff, especially Dr. Rauf Bey, an Ottoman physician. Despite Mamqani's pledge that he would not go to Kermanshah after settling the mess he had created in Kangawar, he went straight to Kermanshah.

2- The tenth month in the Islamic calendar.

3- The twelfth month in the Islamic calendar.



Table 1: Estimation of deaths caused by cholera in Kermanshah province during the Qajar era

Row No.	Date	Reign period	Illness report	Duration of illness (estimated)	Number of Deaths (estimated)
1	1830	<i>Fath Ali Shah</i>	In 1830, cholera spread in the cities of the Ottoman Empire. Kermanshah was one of the first cities that were exposed to this disease due to the large population of pilgrims returning from Iraq. This disease continued for about four years and caused many casualties to society.	4 years	8000 people
2	1850	<i>Nasir al-Din Shah</i>	In late 1850 and early 1851, cholera emerged in Kermanshah and killed approximately 20 to 30 people daily and by continuing for nearly three months, people were forced to leave the city and a large number of tribes were forced to move out of the state.	3 months	2250 people
3	1853	<i>Nasir al-Din Shah</i>	Vaqayei newspaper published news from Kermanshah on the 22nd of Safar 1853 and reported the outbreak of cholera in this city. Many were affected by this disease and died.	3 months	2500 people
4	1860	<i>Nasir al-Din Shah</i>	In January 1860, cholera was observed in Kermanshah and spread. Dr. Hanbarshan Brugshan writes: It is amazing that this dangerous disease moved towards the West with unimaginable speed, attacked Kermanshah and caused many casualties there. Ten people were killed almost every day.	1 year	3650 people
5	1861	<i>Nasir al-Din Shah</i>	In 1861, a severe plague broke out in Kermanshah and spread all over Iran, and 300 people out of 25,000 population died every day.	1 month	9000 people
6	1867	<i>Nasir al-Din Shah</i>	In 1867 a severe plague spread throughout Iran and covered all the cities of Iran. The number of deaths in Iran was not less than one hundred thousand.	6 months	3000 people
7	1872	<i>Nasir al-Din Shah</i>	At the beginning of October 1872, cholera appeared in the city of Kermanshah and spread throughout the city and its surroundings.	1 month	500 people
8	1928	<i>Nasir al-Din Shah</i>	Cholera originated in Kermanshah in 1928. Etimad al-Satna said sarcastically that the king was pale of fear, his nose drawn and his voice hoarse. It seemed that cholera caused fear for the king, and the number of casualties was not known. The last epidemic, which was very severe, started in Badkoba in last 1891 and spread throughout the whole country. Its intensity was incomprehensible.	2 months	1000 people
9	1892	<i>Nasir al-Din Shah</i>	Another time in 1892, a mild cholera disease appeared in the city of Kermanshah and a limited number of people died.	2 months	500 people
10	1893	<i>Nasir al-Din Shah</i>	In the middle of Jamadi al-Awal in 1893, an illness similar to cholera appeared in Kermanshah, and five to six people died of that disease a day, lasting for a month.	1 month	150 people
11	1903	<i>Mozaffar al-Din Shah</i>	In 1903, cholera spread in Kermanshah. In Hajiabad, 40 to 50 people out of 250 people were killed. The number of deaths reached to 5000 people in Kermanshah and 6800 people in the whole country. Kermanshah was suffering from cholera for seven months.	7 months	5000 people
12	1910	<i>Ahmad Shah</i>	Cholera spread again in 1910 in the city of Kermanshah and killed up to 25 people daily. Most people fled to the countryside and foothills.	3 months	2500 people
13	1911	<i>Ahmad Shah</i>	In 1911, cholera spread again in Kermanshah, and its intensity increased until October, leading to the death of 45 people.	3 months	45 people



Quarantine employees prevented the group from entering the city. They insisted that it would be better to stay in their quarantine stations until it was determined that they were not infected with the cholera disease that was raging in Najaf. Students of Agha Momghani told health authorities that “The saddle of His Highness (Hazrat Agha) is holy and merciful, and wherever he goes, the calamity will be removed, and there is no need for quarantine”. When the health authorities stated that in the past His Highness and other clerics were present in Najaf and Karbala but could not prevent the epidemic. Having heard this, the students reacted harshly, throwing their sticks at them. Then, they quickly moved to Kermanshah. The next day, several of them fell ill and 23 of them died on the same day. The rest of the group spread and travelled to Borujerd, Isfahan, Hamedan and other places, and no one dared to stop them, and thus cholera spread. Finally, they reached Tehran through Qom and spread the disease there (Floor, 2019, p. 63).

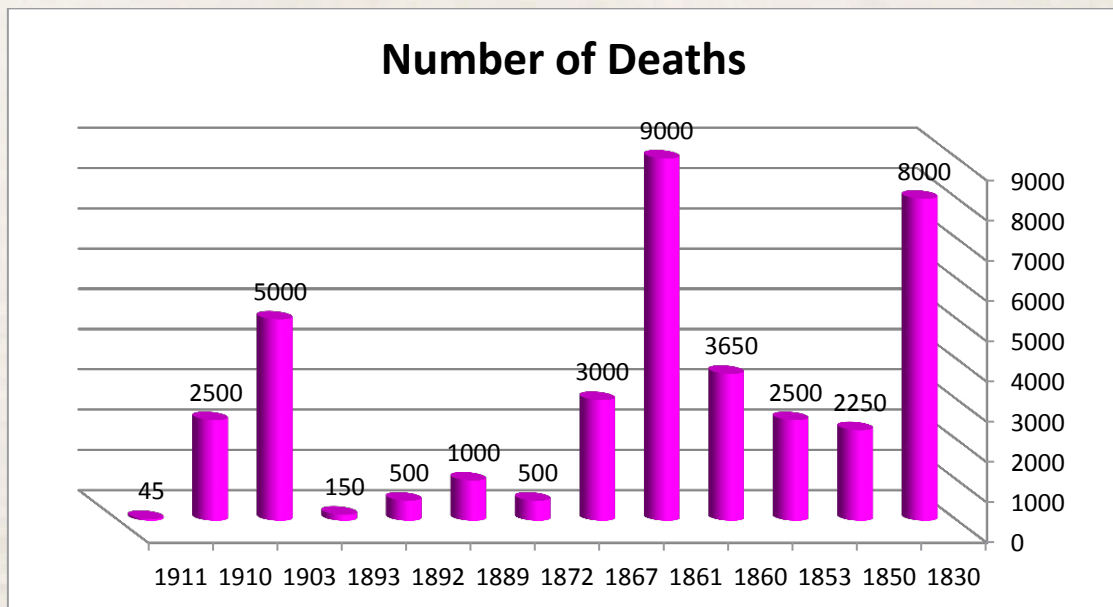


Figure 4. The status and statistics of human casualties caused by cholera in Kermanshah during the Qajar era

In 1904, cholera reached Kermanshah through Basra for the seventh time, and from there, it spread all over Iran. It was said that 30 thousand people died in Tehran (Ittehadieh, Shams, and Ghafari, 2013, p. 16). Dr. Fourieh, who was in Iran between 1927 and 1930, wrote that according to the news, cholera appeared in the western borders of Iran through Baghdad and apparently reached Kermanshah. After causing many casualties in Arab Iraq, this disease quickly reached Shushtar via Karun and Kermanshah via Diyala (Fourieh, 2007, pp. 152-215).

The people panicked when the son of one of Kermanshah’s prominent clerics died of cholera on May 8, 1904. Approximately, one-third of the city’s population fled the city, camping in villages. As a result, the disease spread throughout the state. Mortality rates varied. In Hajiabad, which had a population of 250 people, there were 40 to 50 dead, but



this number was significantly lower in other villages. The people returned to the city on the 30th of Jumadi Awal, observing that the situation outside was worse than inside the city. Since quarantine stations could easily be bypassed, this system was not effective. Out of 68,000 deaths in the whole country, 5000 people died in Kermanshah, a figure believed to be an underestimation. In 1904, Rauk was sent to Kermanshah to organize health services. However, he died of cholera at the end of August (Floor, 2019, p. 64).

As Captain Haworth, the British consul, said, something like “a sick season” started at the end of Sha’ban. In September 1907, Hayworth reported that “at least one person had the fever in every house in the city. This could have affected about 10,000 people in total.” Perhaps it was the local flu known as “Misheh”. According to Russian doctors, every day of that year, they witnessed the death of people in the Russian communities (Floor, 2019, p. 65) (Table 2, and Figure 5).

Table 2: The death rate of plague in Kermanshah province during the Qajar era

Row No.	Date	Reign period	Illness report	Duration of illness (estimated)	Number of Deaths (estimated)
1	1829	<i>Fath Ali Shah</i>	In 1829, as Sepehr says, the plague existed for many years in Kermanshah, Nahavand, Hamedan, Borujerd, and Azerbaijan, killing almost half of the people.	1 year	3000 people
2	1830	<i>Fath Ali Shah</i>	The plague continued in Kermanshah for about three years, and almost 90% of the city's population was infected.	1 year	5000 people
3	1831	<i>Fath Ali Shah</i>	In 1831 AD, the plague reached most parts of Iran and Rome and swept all over Iran. In the month of Ramadan in 1831, the number of casualties reached 100 people a day. There were families of about 40 people, most of whom died, and at most, one or two members survived. The dead in Kermanshah were numerous. Two hundred and three hundred thousand people perished.	2 years	100,000 people
4	1834	<i>Mohammad Shah</i>	In 1834, Kermanshah was devastated by the plague for three consecutive years. As a result, many people died. The number of casualties was not determined.	1 year	3000 people
5	1855	<i>Nasir al-Din Shah</i>	In 1855, the western borders of Kermanshah were exposed to a serious attack of the plague that spread from Baghdad, and it was so widespread that it reminded one of the great plagues of 1772.	1 year	3000 people
6	1861	<i>Nasir al-Din Shah</i>	In 1861, the plague spread in Kermanshah. Unfortunately, this coincided with a year of drought and food shortage. The casualties were high.	1 year	5000 people
7	1903	<i>Mozaffar al-Din Shah</i>	According to the news published in the Chihrehanma newspaper near Kermanshah, a plague occurred, and 13 people died then.	6 months	2000 people
8	1912	<i>Ahmad Shah</i>	According to reports, a plague outbreak occurred in Kermanshah, killing 13 people.	3 months	1000 people



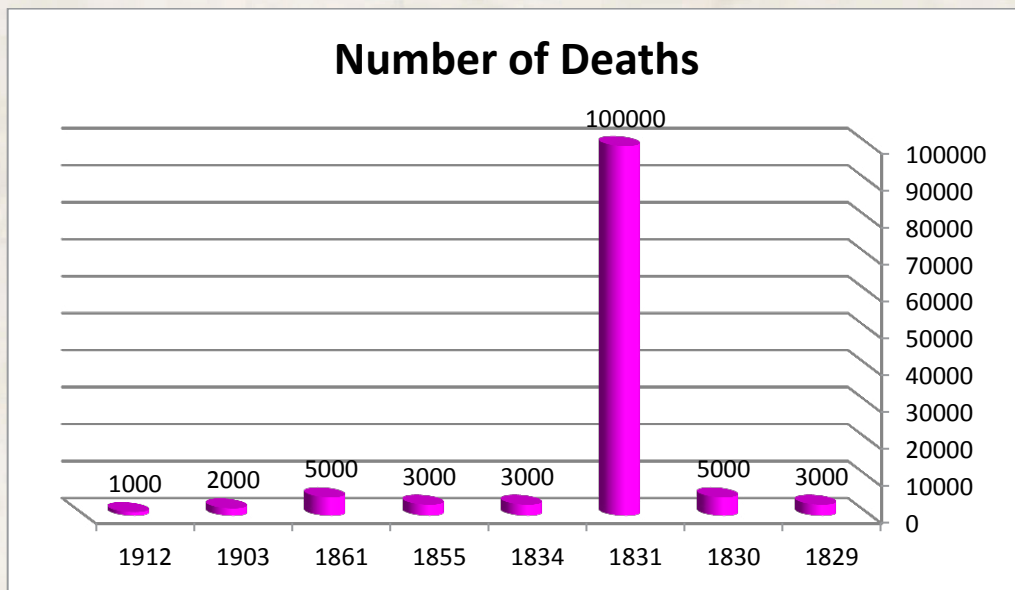


Figure 5. The status and statistics of human casualties caused by Plague in Kermanshah during the Qajar era

Cholera was seen again in Kermanshah in early Shawwal 1911, and its intensity increased until the end of the month, and also it led to the death of 45 people. After Shawwal 18th, cholera decreased, and no cases were observed after that. Cholera was also prevalent in the villages, but no information was available about the devastation it caused there. In 1911, an outbreak of chicken pox broke out among children, and after a while, it inflicted the adults, and the disease reached its peak. However, the outbreak diminished after that (Floor, 2019, p. 65) (Table 3 and Figure 6). According to the data gathered on the diseases in the Qajar era, most diseases that caused a lot of casualties in the Kermanshah region were cholera and plague (Table 4, and Figure 7).

Content and Tables analysis

The national rulers did not take any significant measures in health and modern medicine until the time of Fath Ali Shah and Abbas Mirza, the crown prince. We have witnessed the first measures to promote variolation in the country at this time. However, the turning point of these measures in regard to health and preventing the spread of infectious diseases returned to the time of Naser al-Din Shah and Amir Kabir chancellery. In this period, we see the establishment of Dar al-Funun School; students sent abroad to study medicine, the establishment of health and medical institutions, and the Health Maintenance Assembly, and the entrance of European doctors for treatment.

The above statistics and Figures show that the spread of infectious diseases was high and prevalent in Kermanshah during the Qajar era. These diseases caused heavy casualties in the region, and they subsided after a time but spread again on another occasion. As soon as a disease spreads in one place, it quickly spreads to other areas. Based on some pieces of evidence, cholera was the most common infectious disease in Kermanshah during the Qajar era. This disease occurred once every year, and as soon as it spread in the infected areas, it caused mass casualties. In addition to the cholera disease, the plague



was also widespread in the region and caused a lot of human casualties. Sometimes, the simultaneous outbreak of cholera, plague and drought caused the loss of a large population of the region. In addition to cholera and plague, other infectious diseases, such as fever, typhoid, malaria, and influenza, caused casualties in the region. However, their prevalence and casualties were less than cholera and plague.

Table 3: Estimating the number of deaths from other infectious diseases during the Qajar era in Kermanshah province

Row No.	Date	Reign period	Illness report	Duration of illness (estimated)	Number of Deaths (estimated)
1	1821	<i>Fath Ali Shah</i>	In 1821 AD, the scourge of malaria spread in various forms. According to the research, 20 thousand people in the whole country died from fever, fainting and other various episodes.	6 months	5000 people
2	1833	<i>Fath Ali Shah</i>	In 1833, many people died due to malaria, fever and severe tremors. Twenty thousand and two hundred people from Iraq and the whole of Iran died in Dar al-Khilafah.	1 year	3000 people
3	1907	<i>Mohammad Ali Shah</i>	In 1907, there was a sick season, according to the statements of Captain Harroth, the British Consul. He reported that at least one person in every house had a fever, and a total of about 10,000 people suffered. Maybe it was a local flu.	4 months	1000 people
4	1912	<i>Ahmad Shah</i>	On the 26th of Jumadi al-Aval, in 1912 AD, typhoid disease spread throughout Iran and killed many people.	6 months	1000 people
5	1918	<i>Ahmad Shah</i>	According to the regional report of the influenza disease in Kermanshah in 1918, forty thousand people, practically all local people, were attacked by the disease; it is said that the death rate was 1% in the city and 20% in the villages.	1 year	7500 people

Number of Deaths

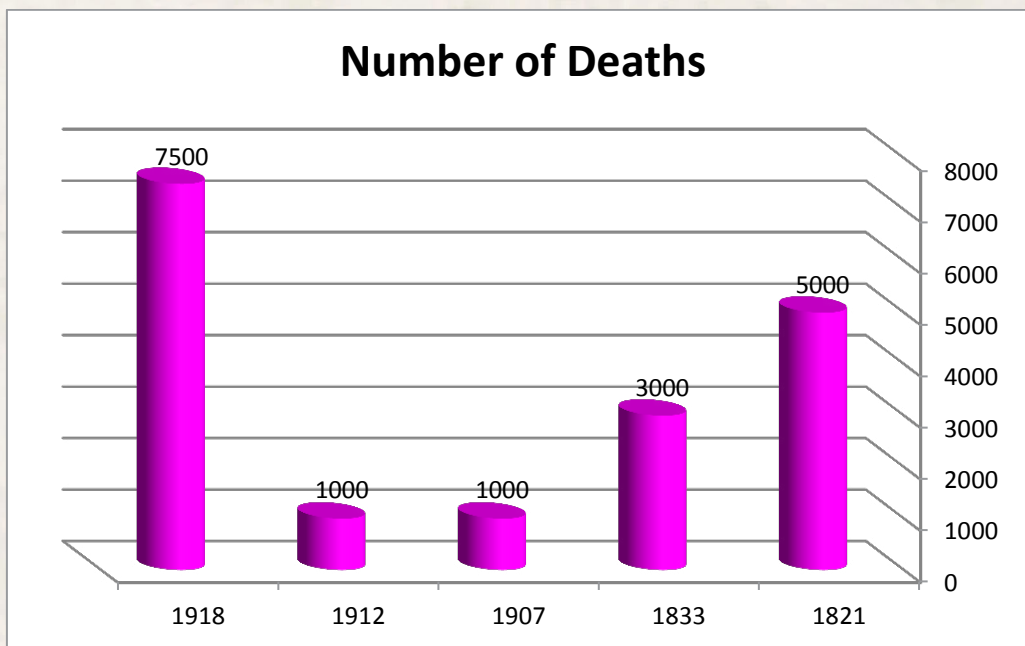


Figure 6. The status and statistics of human casualties of other diseases in Kermanshah during the Qajar era



Table 4: Comparison of human casualties caused by infectious diseases in Kermanshah province during the Qajar era

Infectious disease	Number of Deaths (estimated)
<i>Cholera</i>	42795
<i>Plague</i>	32000
<i>Other diseases</i>	17500

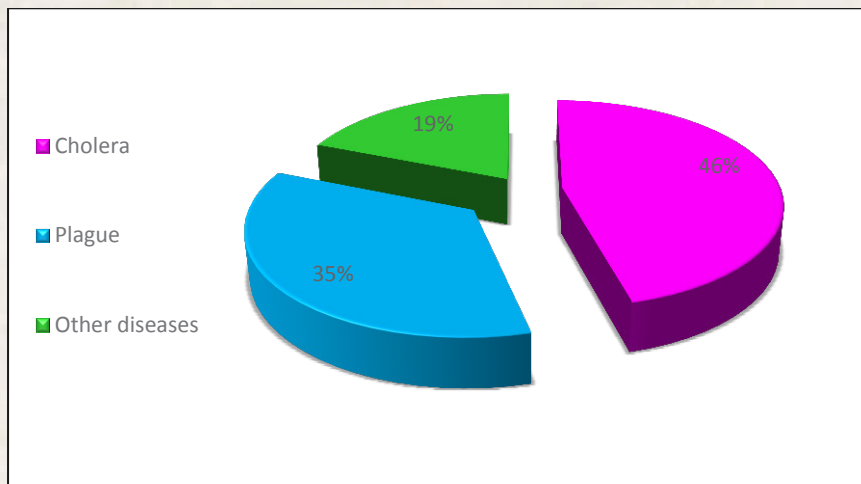


Figure 7. The Comparison of the percentage of human casualties from cholera, plague and other diseases in Kermanshahs during the Qajar era.

It can be acknowledged that the highest prevalence of infectious diseases happened during the reigns of Fath Ali Shah, Naser al-Din Shah and Ahmad Shah. Perhaps one of the reasons for the movement towards the development of health activities and the expansion of modern medicine during Naser al-Din Shah’s era was the quick dissemination and casualties of the diseases from which even the Qajar kings and courtiers were not immune. In addition, statistics and data show that infectious diseases in Kermanshah region fluctuated significantly over time, and casualties were less when the quarantine regulations were followed. We had the highest number of human casualties in the Kermanshah region during Naseruddin Shah’s era, and sometimes the disease was in the region for up to three years, killing a lot of people. The biggest and most severe contagious diseases during the Qajar period in Kermanshah region were cholera and plague from 1830 to 1834 during the reign of Fath Ali Shah and the beginning of the reign of Muhammad Shah, when a large population died due to the spread of cholera, plague, poverty and drought.

Conclusion

Iran faced widespread epidemics of diseases such as malaria, plague, typhus, smallpox, whooping cough, influenza, tuberculosis, leprosy and particularly “cholera” in most parts of the country during the Qajar era in the 19th century. Kermanshah was one of the most important states and provinces of Iran, which was repeatedly exposed to these contagious diseases and epidemics. The most important problem was the transmission and spread of infectious diseases, such as cholera, plague and smallpox, from the lands of the Ottoman



government to the region and the country. The absence of a government health organization, lack of proper observance of personal hygiene, the spread of superstitious beliefs and misunderstanding of the commands of Islam, as well as the traditional way of living, the dispersion of the population, the low level of people's income, structural and infrastructure problems, such as unsuitable roads and the lack of means of communication and transportation, especially the lack of health and treatment facilities, were significant in the severity and spread of contagious diseases in Kermanshahs during the Qajar era.

Contagious and infectious diseases were constantly entering the Kermanshah region through Mesopotamia in the 13th century, which coincided with the Qajar era in Iran. Dangerous infectious diseases, such as cholera, smallpox, plague, and typhus, affected the region and the entire country. Ignorance of people in recognition and prevention measures, basic health facilities and the neglect of local and national rulers, non-observance of individual and collective hygiene, unhealthy weather and water, improper and unsanitary bathrooms, carrying the corpses to al-Atabat al-Aliyat, bad conditions of the roads and lack of medical facilities were responsible for more casualties in Kermanshah. These factors caused the spread of more diseases, leading to the death of thousands of people in Iran, especially Kermanshah region, every year.

Documents and information about the trend of contagious diseases in Kermanshah in the early Qajar dynasty have yet to be made available. The highest number of human deaths due to the spread of infectious diseases in the Qajar era from 1834 to 1906 AD was during the reigns of Mohammad Shah, Naser al-Din Shah and Muzaffar al-Din Shah and the population of Kermanshah decreased due to the spread of infectious diseases. However, this, in turn, led to the development of health and treatment policies during the Naser al-Din Shah era. The first social consequence of contagious diseases in the Qajar period in Kermanshah was the reduction of the population and the spread of poverty and social disability of the people. Therefore, we see measures taken by some national and local rulers to prevent the spread of diseases and human casualties. The local rulers of Kermanshah took measures, such as establishing quarantine at the border, mandating inoculation and variolation, preventing the entry and exit of travelers to these areas and building hospitals to treat the patients. Mirza Farmanfarma established a hospital and a pharmacy, Ebrahim Khan Motamed Derakhshan quarantined the border and paid attention to the health of the guilds in order to reduce the spread of diseases, but these measures did not have much effect in preventing the spread of the disease and human losses. There are no accurate statistics about the population decline due to the spread of the disease. However, every year this disease killed thousands of people in the region and played a significant role in the population decline of the region, along with famine and drought.

Conflict of Interest

None.

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