



## History of Medicine

# Spanish Flu and the End of World War I in Southern Iran from 1917–1920

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## Abstract

The Spanish Flu was one of the disasters in the history of Iran, especially Southern Iran, which led to the death of a significant number of people in Iran. It started on October 29, 1917, and lasted till 1920 – a disaster that we can claim changed the history. In one of the First World War battlefields in southern Iran in 1918, there was nothing left until the end of World War I and when the battle between Iranian warriors (especially people of Dashtestan and Tangestan in Bushehr, Arabs, and people of Bakhtiari in Khuzestan and people of Kazerun and Qashqai in Fars) and British forces had reached its peak. As each second encouraged the triumph for the Iranians, a flu outbreak among Iranian warriors led to many deaths and, as a result, military withdrawal. The flu outbreak in Kazerun, Firoozabad, Farshband, Abadeh, and even in Shiraz changed the end of the war. In this article, we attempt to discuss the role of the Spanish flu outbreak at the end of one of the forefronts of World War I.

**Keywords:** Britain, Fars, Iran, Spanish Flu, World War I

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## Introduction

There has been a lot of recent news about the new coronavirus (COVID-19), which has revived fearful concerns in the medical community such as high Spanish flu mortality. It seems this fear is not false, and if scientists intend to tackle COVID-19 and its inevitable effects, they must begin an in-depth study of the Spanish Flu that occurred 100 years ago.

In 1918, the Spanish Flu caused 40–50 million deaths worldwide and became “the greatest medical massacre in history”.<sup>1</sup> From 1918 to 1920, a type of influenza became pandemic worldwide and caused one of the deadliest catastrophes in human history. Its outbreak had two major phases, which caused 50-100 million deaths overall (3–5% of the world population). The coincidence of the outbreak and World War I had a great effect on the spread and control of the disease. It is also called the “1918 Flu pandemic,” which emphasizes the importance of the disease extent.<sup>2</sup>

Although the disease is famous as Spanish Flu, no one believes that it originated from Spain. Probably, the disease got its name during the climax of World War I. At that time, countries such as Germany, Austria, France, the United States, and Britain were silent about the disease outbreak to keep it a secret, rather than a weakness during the war. However, the government of Spain believed that

they should not hide the truth. Therefore, it has been thought that the disease’s first outbreak was in Spain. However, there has been controversy around the source of the first confirmed cases till now.<sup>3</sup>

Influenza entered Iran when southern liberators had risen against British colonialism, and the long-running public war between them had reached a critical juncture.<sup>1</sup> The outbreak of influenza led to two million deaths out of the 12 million population of Iran. The mortality rate in Fars had been reported differently by locals and British-Indian soldiers. Still, it was estimated that 10-30 thousand deaths occurred in Fars –<sup>4</sup> a fact that should be taken into consideration by researchers and historians. The coincidence of the 1918 flu outbreak and the end of World War I inflicted heavy decimation on Iranian liberators, turned possible Iranian victories over British forces to inevitable defeat, and finally changed the history. In this paper, we aim to determine the importance of the Flu outbreak in southern Iran and its impact on changing the trend of war between Iran and Britain.

## Three Simultaneous Events: World War I, Iran-Britain War, and Spanish Flu

### World War I and Iran

World War I began in June 1914 due to the murder of Archduke Franz Ferdinand, the crown prince of Austria-

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Hungary between Allies and Axis powers. At the same time, eight days after the coronation of Ahmad Shah (last king of Qajar kingdom, 1909–1925), he announced a declaration of neutrality in the war.<sup>5,6</sup>

However, due to the weakness of the king of Qajar, a breach of announced neutrality occurred. During World War I, Iran underwent significant changes. The countries involved in the war had divided our country into their territories. Russia<sup>[1]</sup> in the north, England in the south and southeast, Ottomans in the west, and German forces scattered in the center of Iran and other areas.<sup>6,7</sup>

### Iran-Britain War

Several successes of Germany damaged Britain's interests in the Middle East, especially in the south of Iran and Persian Gulf ports; it compelled the Britain government to think about a solution to control their interests in the south of Iran (the access road to India for Britain). Therefore, the military delegation named SPR (South Persia Rifles) under the command of Percy Sykes was organized in March 1916 without reaching any agreement or obtaining consent from the government of Iran (Figure 1).<sup>9</sup>

The establishment of SPR caused several damages to the Iranian people. They created fictitious insecurity in various aspects to induce the thought that they were the only forces that could establish security to solve the people's problems.<sup>10</sup>

The Iranian people and forces opposed the deployment of the SPR and feared that Iran would become a colony like India. The highest focus of SPR was in the Fars province,



**Figure 1.** Map of Fars Province. Source: <https://www.iraniconline.org/articles/fars-i#prettyPhoto>.

especially in Shiraz and Abadeh. The colonial nature of the British government led to the formation of anti-British and anti-colonial movements in Southern Iran. The movements aimed to prevent Iran from becoming a colony of Britain like India.<sup>11</sup>

On April 29, 1918, with the formation of Samsam al-Saltaneh's government cabinet and with his supports, anti-British liberators of the Qashqai tribe began to confront SPR. British forces, which had become robust and sturdy, criticized Solat al-Dawlah with irrational excuses to break his power and influence him. Thus, with the attack of SPR to a part of the Qashqai tribe, a conflict between them began on May 9, 1918.<sup>11</sup> Solat al-Dawlah, on the other hand, to declare war on SPR, called all heads of the Qashqai tribe and leaders of other surrounding tribes for an alliance against Britain to defend Islam and the country. From June-July 1918, SPR was attacked and defeated several times by Qashqai liberators.<sup>12</sup>

At the climax of the conflict between these two sides, just when the story seemed to be at the end and Qashqai liberators in the Kazerun seemed to win the victory, a third force, Flu, the legacy of World War I, entered the scene and affected both sides, but not to the same extent.<sup>9</sup>

The story was that Sykes and the commander of the Fars sent Qavam al-Molk with an army to Firozabad (center of the Qashqai Tribe) to inflict severe damage on the Qashqai tribe. Mohammad Naser Khan, the eldest son of Solat al-Dawlah, confronted them fiercely and forced them to withdraw their forces.<sup>9</sup>

A fierce battle took place near Firozabad. However, betrayal by someone close to one of the tribal leaders caused the Qashqai liberators to withdraw their forces. Many of Solat al-Dawlah's counselors demanded an exit from Firozabad, but he did not accept until he heard that Flu had infected his eldest son. Thus, he had no choice but to leave the city. With the disease outbreak, thousands of people were infected, and Solat al-Dawlah, along with his army, was forced to retreat, and they headed toward Karzin. He took advantage of this condition and created a garrison in Abadeh to confront and attack British forces. Therefore, he sent a letter to Mohammad Ali Khan Salar Mozafar to prepare the requisites. In the battle of Abadeh, the disease helped the British forces again. The disease killed him and all his 300 soldiers in a few days. When the other Qashqai liberators were affected by the disease, they had no choice but to leave the battle and scattered over the surrounding mountains.<sup>9</sup>

After a month, Solat al-Dawlah attempted to seize Firozabad, but again Flu entered and took many death tolls of Qashqai emancipators without any war. The emancipators were killed one by one with their rifles beside them, but there was no one to collect their corpses.<sup>13</sup>

Not only the Qashqai tribe were affected by the disease, but also other tribes such as the Dashtestani tribes were

afflicted with Flu. In October 1918, when leaders of many tribes of Fars were preparing supplies to re-struggle against British forces, the outbreak of uncontrollable Flu killed hundreds of their military forces and thousands of Fars locals. This disaster temporarily ended any military operation.<sup>12</sup>

The disease outbreak in Firozabad, Farashband, and even Abadeh turned Iranian victory into compulsory defeat. The disease also affected British-Indian forces and killed about six thousand people,<sup>14</sup> but due to proper nutrition, expert physicians, and proper medications, they suffered less mortality compared with the Iranians.<sup>13</sup>

### Spanish Flu and World War I

During the last year of World War I, the influenza pandemic began and spread worldwide. It is noteworthy to start with the history of Spanish Flu in the history of medicine. Although the disease is well-known as Spanish Flu, no one confirms that it was initiated first from Spain. However, the government of Spain believed that they should not hide the truth and reported the first casualties of this pandemic; now, there is controversy around the source of the first confirmed cases, and some areas such as the east of Asia, Europe, and Kansas state are supposed to be probable sources.<sup>3</sup> Mark Humphries stated that the mobilization of Chinese laborers to work behind the British and French lines might have been the source of the pandemic<sup>15</sup> – a claim that was rejected by a report published in 2016 in the Journal of the Chinese Medical Association.<sup>16</sup>

The coincidence of the outbreak and World War I had a significant effect on the spread and control of the “1918 Flu pandemic”. This outbreak had two phases; the first one was similar to the common influenza and mostly affected the elderly and those with chronic diseases, unlike young individuals who had a fast recovery. This phase, with low mortality, occurred in the first half of 1918 (winter of 1296 SH and spring of 1297 SH). However, in August 1918, the second phase began from France, the USA, and Sierra Leone, with a peak in death tolls from October to December of that year (autumn of 1297 SH). There was another phase following the second phase that was not significant.<sup>2</sup> The abnormal mortality rate had also been in the attention of international journals and newspapers. One is presented in Figure 2.

Physicians in 1918 figured out the presence of a virus, and as Wendy Barclay, professor of Imperial College of London, said, “they certainly did not know that the virus was not the only cause of the disease.” The main cause of death was bacterial infection and pneumonia in people weakened by famine and poverty. Antibiotics such as penicillin were not available at that time, which became commercially available in 1943. Therefore, in 1918, there was no effective treatment for this disease. It is also worth mentioning that health care organizations and their

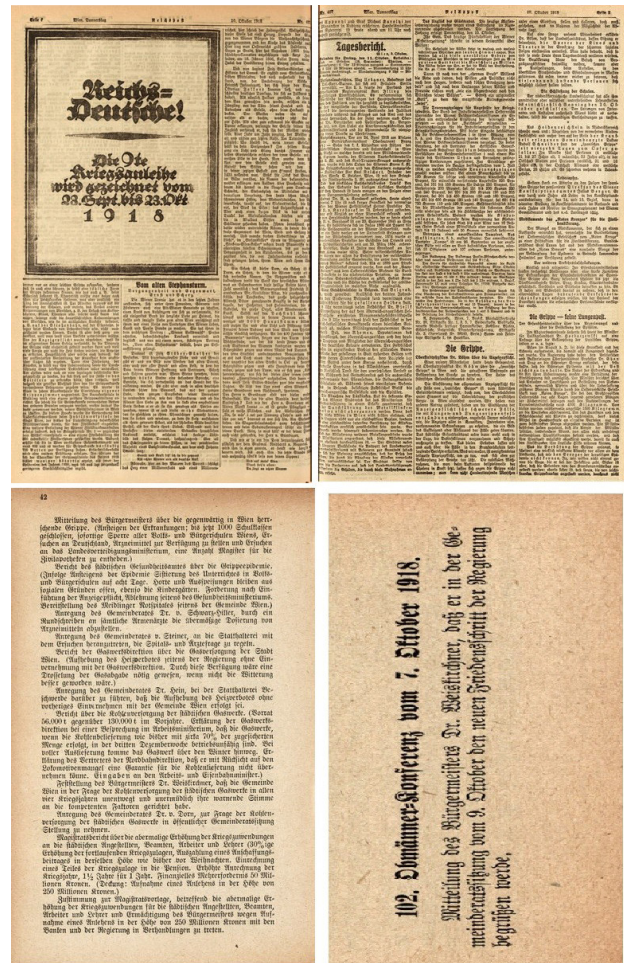


Figure 2. “Preventing Spanish Flu,” a Newspaper Article from Reichspost, Issued October 18, 1918. Source: <https://ww1.habsburger.net/en/chapters/spanish-flu-1918>.

facilities were not as advanced as nowadays.<sup>2,17</sup>

In addition to inadequate health care services and lack of medical facilities, the high mortality rate was a direct consequence of the weak and catastrophic conditions of life in those sad days of human history. Trenches also provided a good condition for the spread of the disease among soldiers during World War I. Vitamin B complex deficiency influenced the high number of deaths. New researches that focused on medical reports of those days have discovered new details. Researchers have reported that the nature of the disease was not more aggressive than previous influenza types, but the fact that it caused more deaths than before might be due to abnormal world conditions such as malnutrition, unfavorable conditions in military camps, and overcrowded hospitals.<sup>17</sup> Finding out the exact reasons for the high mortality rate will help us to face new outbreaks.

### Spanish Flu in Iran

The main ways in which the virus entered Iran in the final years of the war included the following:

- From Baku to Julfa and Tabriz in the northwest,
- From Baghdad to Kermanshah in the west,
- From India to Bushehr and then Shiraz in the south.<sup>2</sup>

At that time, the British and Indian soldiers entered Bushehr, and Bandar-e Lengeh Port had a notable effect on the outbreak of Influenza to the Persian Gulf region and Iran.<sup>2</sup> Therefore, the Spanish Flu reached Bushehr from India by ships and, after that, reached Shiraz in a way that disrupted all parts of the south.<sup>18</sup> At that historical time, due to the entry of three lethal killers to Shiraz, a great famine as well as a cholera outbreak and lack of proper medical facilities, many people died and corpses were seen everywhere in the city.<sup>7</sup>

In military camps of Iranian liberators, the Flu was a riot, and its outbreak ended the battles, which caused the continuation of strengthening among the British forces. In the disease outbreak, two girls of Solat al-Dawlah died, and even two of his sons were infected, but they recovered.<sup>19,7</sup> Two letters from the commander of Fars to Solat al-Dawlah expressing satisfaction about the recovery of his two sons are shown below (Figure 3).

The flu outbreak ended all military operations, and General Douglas sent a letter to the Indian government not to send any soldiers any more till the disease subsided.<sup>20</sup> Sir Percy Sykes mentioned that the type of Flu that was common among British troops was different from that among locals. He also said, “Influenza spread among British troops at the beginning of October but was mild, and the mortality rate was only 2%, but at the same time

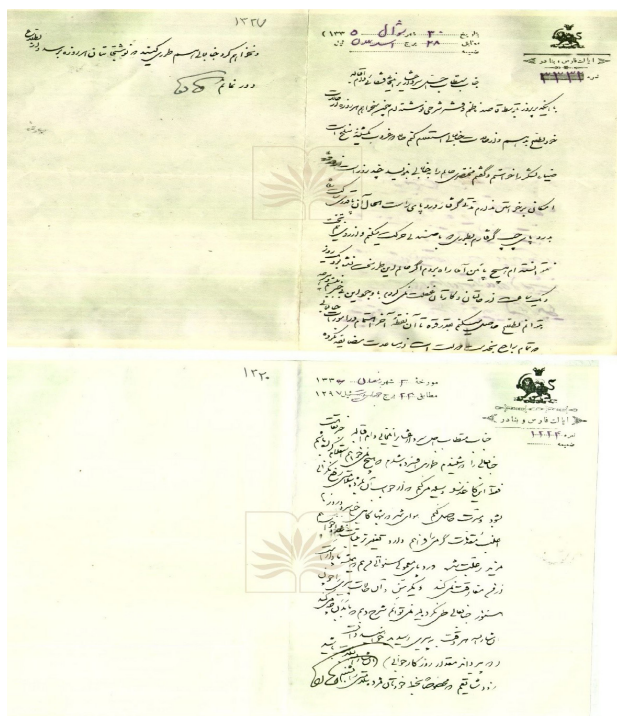
in Shiraz, this figure was 18%. Simultaneously, all those who had the disease were weakened and were not ready for hard works until complete recovery. Therefore, mortality rates were much higher in the surrounding areas, and this would reduce the risk of any serious opposition.”<sup>10,21</sup>

This report is confirmed by Sir Percy Molesworth Sykes (1867-1945), British brigadier-general, author, and geographer. According to him, in only one month (October 1918), one-fifth of Shiraz’s population was swept off by this disease. He wrote, “The war with the Qashqais ended successfully with much difficulty because both sides were equally defeated by the horrific flu onslaught of 1918, which seemed to be in its most severe form. In the beginning, we did not realize that the disease was going to kill one-fifth of the population and hit Shiraz and Firouzabad forces with the same intensity.” As for the death toll, he wrote: “Shiraz has lost 10 000 out of its population of 50 000. It is a shame to note that the Iranian authorities hoarded even the shrouds, and we were so busy caring for our forces that we could not do anything for the people of the city, hundreds of whom had managed to reach the mosque stumbling out of misery and despair to die there. Our losses were also shocking. More than 600 men, both British and Indian, fell victim to the epidemic wave, which was horrifying. Abdolhossein Mirza Farmanfarma (1857–1939) had recently survived the disease. We came to him after his recovery, and he said in his unique French style: “Le – demi – mond de Chiraz est mort” (Half of Shiraz is dead).<sup>21</sup> As mentioned in a telegraph (see below) and a letter sent to his son Nusrat al-Dawlah on October 31, 1918, he mentions the Flu and writes that everyone in Shiraz is infected and shops are closed.<sup>22</sup> (Figure 4). Two sons of Prince Abdolhossein Mirza Farmanfarma, the ruler of Fars, died of the same disease. It seems that he had better demographic information, even if he was exaggerating to some extent.<sup>23</sup>

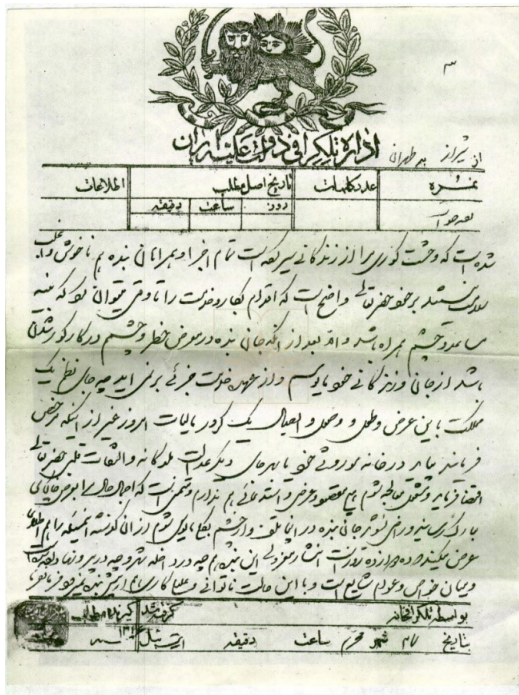
It is obvious that Sykes’s explanation for justifying much fewer casualties among British forces – a different type of Flu among British forces and Iranians – was an apparent paradox unless we accept that the Flu virus discriminated against and oppressed both sides. The higher Iranian casualties were mainly caused by famine, which was aggravated by British forces who had stored foods for their soldiers during the outbreak of influenza in 1918.

While the British forces were well fed, the Iranians quickly died of famine. These 10 000 victims of the influenza were, in fact, victims of the famine. Thus, it would not be surprising if one-fifth of the population of Fars disappeared within a month, as almost half of Iran’s population suffered from famine between 1917 and 1919. Besides, famine cannot be attributed to other countries because, from November 1914, Fars region was under British occupancy.<sup>10</sup>

On October 23, Flu reached its peak, and 1453 (about half of military medical staff) people were in hospitals.<sup>20</sup>



**Figure 3.** Two Letters from the Commander of Fars to Solat al-Dawlah Qashqai Expressing Gladness about the Recovery of His Two Sons (National Library & Archives of Iran).



**Figure 4.** Report of Farmanfarma’s illness; reduction of taxes in Fars due to famine and illness; the possibility of his dismissal; the Shah’s emphasis on maintaining commitment to the government, and sending taxes and donations (National Library of Iran Archives).



**Figure 5.** An old photograph of the remnants of Shiraz population who came to the Qur’an Gate to celebrate the end of World War I despite the famine and Spanish Flu outbreak. (Image by British Foreign Office Archives)

### Spanish Flu and its Effect on the Foundation of Pasteur Institute

The ex-commander of Fars, Abdolhossein Mirza Farmanfarma, was one of the most famous politicians infected by the Flu. After recovery from the Flu and completing his mission in Fars, he realized that preventing the spread of contagious diseases in Iran requires a scientific and research institute. Thus, he established an institute on August 21, 1920, with 22549 square meters known as the Pasteur Institute in Tehran. Abdolhossein Mirza Farmanfarma donated 10 thousand Tomans (= \$15 million) by cash and 15 thousand Tomans (= \$22 million) with the approval of the government cabinet assigned to Pasteur Institute in Tehran. After that, the government decided to re-establish its scientific relationship with France to investigate contagious diseases. This donation has implemented the contract which was assigned, at the Paris Peace Conference on October 23, 1919, by the Iranian delegate and Emile Roux, president of the Pasteur Institute in Paris. The result of the negotiation was the inauguration of the Pasteur Institute of Iran. Furthermore, in the last 100 years, it has been the origin of many charities and exceptional medical services in Iran, especially in eradicating some contagious diseases.<sup>26,27</sup>

In conclusion, the outbreak of Spanish Flu in southern Iran, Fars Province, and Shiraz was a disaster in which the role of World War I is undoubtedly obvious. Fighting between liberators in Southern Iran and British forces in the police of the south by creating an imposed famine caused malnutrition and food shortage in southern Iran, which ultimately afflicted the poor and weak Iranian population. That outbreak turned Iranian victory into compulsory defeat. The disease also affected British troops and killed several British and Indian soldiers, too. However, proper nutrition, proper medications, and availability of physicians reduced British casualties; on the other hand, shortages among Iranians changed the end of the battle and provided prerequisites for Britain’s further influence

In October 1918, the disease, lack of water, and high temperatures were so severe that they killed 129 children in a single day. Massive deaths from Flu also disrupted the annual decamp and migration of the Qashqai tribe to the south of Fars. In Fars, the mortality rate among Indian forces was 20%, and it was around 80% among villagers and tribes.<sup>20</sup>

On March 22, 1918, World War I ended after four years. In Shiraz, on this occasion, one hundred guns were fired. People in Shiraz were happy and rejoiced despite the Flu epidemic (Figure 5).<sup>19</sup>

Unfortunately, despite many efforts, local newspapers could not be received from 1917 to 1919. We know that local newspapers mentioned British influence, SPR organization, Flu, and other contagious diseases. Even the Fars Newspaper, the official body of the Fars province, also identified the Flu and recommended ways to deal with and prevent the disease.<sup>24</sup> At that time, as mentioned above, with the October 1917 revolution, Russians left Iran. Finally, with a coup by Reza Khan, the first king of Pahlavi, on November 22, 1921, the breakup of SPR occurred, and Britain was expelled from Iran at no cost.<sup>24</sup> We found documentation in Astan Quds Razavi Library about those events that pointed out the influence of Britain, a paper from Estakhr Newspaper, which was authorized by Mohammad Hossein Estakhr. He has discussed Flu, the end of World War I, cholera, other catastrophic events of 1917-1919, and the treaty of Versailles in his newspaper.<sup>25</sup>

in Iran and the change of regime from Qajar to Pahlavi.

The Flu outbreak, as it did in the past, has altered the outcome of wars, and it seems that in today's world, COVID-19 plays a role similar to the Spanish flu outbreak, and it has the potential to change the outcome of modern wars, such as economic wars etc.

#### Authors' Contribution

SAG and AS: Idea and design of the research. SAG and SG: Collecting of data. SAG, MEZ, MHT, SG, AS: Drafting and finalizing the manuscript.

#### Conflict of Interest Disclosures

The authors have no conflicts of interest.

#### Ethical Statement

The Research Center for Traditional Medicine & History of Medicine, Shiraz University of Medical Sciences approved the study. The author(s) received financial support for the Research Center for Traditional Medicine and History of Medicine, Shiraz University of Medical Sciences authorship, and publication of this article.

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#### Endnotes

[1] During World War I, the October 1917 Revolution occurred in Russia. While the Russians were transmitting power, Flu was transmitted to Russia via American forces which caused plenty of deaths among them. One of the reasons that Russia left the war with Treaty of Brest-Litovsk was the outbreak of Flu in their military forces; based on that, Russia not only gave up those claims that caused them to enter the war, but also recognized Georgia, Ukraine, Poland and Finland's independency and gave up her claims against Baltic countries, some parts of the Ottoman Empire, Caucasus and Asia.<sup>3,8</sup> But infected military forces of Russia transmitted the disease to Caucasus and from there to the northwestern Iran and different regions of Iran's border with Ottomans.<sup>2</sup>

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