



# Challenges of Health Services during Arbaeen Pilgrimage in 2019

Ahmad Soltani<sup>1,2</sup>, Mahtab Aram<sup>3</sup>, Farshid Alaeddini<sup>2</sup> and Milad Ahmadi Marzaleh<sup>1,2,4,5,\*</sup>

<sup>1</sup> Assistant Professor, Iran-Helal Institute of Applied-Science and Technology, Red Crescent Society of the Islamic Republic of Iran, Tehran, Iran

<sup>2</sup> Research Center for Health Management in Mass Gathering, Red Crescent Society of the Islamic Republic of Iran, Tehran, Iran

<sup>3</sup> IAE Institute of Business Administration, School of Management, Jean Moulin (Lyon III) University, Lyon, France

<sup>4</sup> PhD of Health in Disasters and Emergencies, Student Research Committee, Department of Health in Disasters and Emergencies, Health Human Resources Research Center, School of Management and Medical Informatics, Shiraz University of Medical Sciences, Fars, Iran

<sup>5</sup> MPH of Health Policy, Health Policy Research Center, Institute of Health, Shiraz University of Medical Sciences, Fars, Iran

\* **Corresponding author:** Milad Ahmadi Marzaleh, Department of Health in Disasters and Emergencies, School of Management and Medical Informatics, Shiraz University of Medical Sciences, Shiraz, Iran. Tel: +987132340774; Fax: +987132340039; Email: miladahmadimarzaleh@yahoo.com

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## Abstract

**Background:** Arbaeen Pilgrimage is one of the world's largest religious gatherings held in Iraq on the occasion of the 40<sup>th</sup> day of Imam Hussein martyrdom. The identification of the problems and challenges facing the Arbaeen Pilgrimage is of great help in holding this event safer in the future.

**Objectives:** The present study aimed to review the challenges of health services provided to pilgrims during the Arbaeen Pilgrimage in 2019.

**Methods:** This cross-sectional study was performed within one month after the end of this event. The statistical population comprised three million applicants registered by the Hajj and Pilgrimage Organization of Iran. Out of this population, 1,200 subjects who had participated in the event were selected using simple random sampling. The needed data were collected using a researcher-made questionnaire containing closed- and open-ended questions. Demographic characteristics, medical records, and subject comments were included in the questionnaire. The researchers contacted the participants and filled out the questionnaire.

**Results:** The mean age of participants was reported as 41.2±14.1 years, and the majority of them (65.7%) were male. The cold mostly caused the need for medical services. In total, 9.5% of the participants did not receive services, and 90.9% received them from the Iranian Red Crescent Society (IRCS). According to the results, 95.4% of those who received services from the IRCS and 82.4% of those who received services from other service providers were satisfied with medical services.

**Conclusion:** Iraq's health system is faced with numerous challenges during the Arbaeen Pilgrimage. These challenges are multiplied due to infrastructural shortcomings in Iraq's health system, the lack of precise planning, as well as attendees' unpreparedness and unawareness. To obtain pilgrims' satisfaction and minimize the problems, the authorities of Iraq's health system should participate, synergize, and provide health equipment and facilities in cooperation with organizations from other countries participating in the Arbaeen pilgrimage. Comprehensive multi-organizational planning and intra- and extra-organizational coordination before the Arbaeen pilgrimage and training the pilgrims are two key factors that can help the better organization of this event.

**Keywords:** Arbaeen, Challenges, Health, Mass gathering, Planning

## 1. Background

Mass gathering refers to any structured or spontaneous event in which multiple people are gathered in a specific place, with a single purpose, over a specific period (1). Mass gatherings take many forms, such as religious, sports, or social events (2). Arbaeen pilgrimage is one of the world's largest religious gatherings held in Iraq on the occasion of the 40<sup>th</sup> day of Imam Hussein martyrdom (the third Imam of Shiites). This event begins about 10-14 days before Arbaeen (the 20<sup>th</sup> day of Safar, the second month of the Islamic Calendar) and continues until the end of Arbaeen, and the pilgrims walk from Najaf to Karbala during this period (2,3). People from various countries take part in the Arbaeen pilgrimage; however, the majority of them are from Iraq, Iran, Afghanistan, Pakistan, and the Persian Gulf (4). A total of 21 million people reportedly

participated in this event in 2019, and this huge number of people can bring about various health-related problems (5).

Mass gathering can pose numerous public health challenges to attendees, the host country, and the health system (6). The gathering of many people from multiple households in a particular place increases the risk of respiratory diseases (7). Among the common problems in Arbaeen mass gathering, we can refer to the lack of an appropriate transportation system, inadequate health system, lack of access to safe water, infectious diseases, overcrowding, as well as the lack of medicines and medical equipment (3,8-10). Moreover, water- and food-borne diseases, along with skin and respiratory illnesses, such as the flu, are the most common diseases (11). Needs assessment, satisfaction assessment, as well as the identification of problems and challenges are of great help in holding this event safer in the future.

## 2. Objectives

Therefore, the present study aimed to determine the pilgrims' use of and satisfaction with provided health services in 2019.

## 3. Methods

This cross-sectional study was conducted by collecting data via phone calls within one month after the end of the Arbaeen pilgrimage in 2019.

### 3.1. Participants

A total of 1,200 subjects were selected via simple random sampling from the statistical population comprising of three million applicants registered by the Hajj and Pilgrimage Organization of Iran. Out of them, 1,025 cases answered the phone and responded to the questions. The participants were among the attendees in this event.

### 3.2. Data collection

The needed data were collected using a researcher-made questionnaire containing closed- and open-ended questions. Demographic characteristics, medical records, and subject comments were included in the questionnaire. The researchers contacted the participants and completed the questionnaire. They were enquired about the following: their demands to medical services during the pilgrimage in Iraq, type of medical services, if they received their needed services, barriers for receiving the demanded services, and their satisfaction with the provided services.

The information of participants who needed medical services more than once was also collected. The phone calls were answered by the participants in 85.42% of the cases. If the participant was a child or inaccessible, their companions provided the required information. Data were collected by four trained interviewers. If the participants did not respond, they were contacted up to three times.

### 3.3. Data analysis

After sampling and completing the questionnaires, the raw data were entered into SPSS software (version 25) and analyzed using descriptive and analytical tests. To estimate the demands, the obtained number was generalized to three million pilgrims proportional to the gender ratio. The independent t-test and chi-square test (and Fisher's exact test if needed) were used, respectively, to compare the qualitative and quantitative variables between those who demanded and did not demand medical services.

## 4. Results

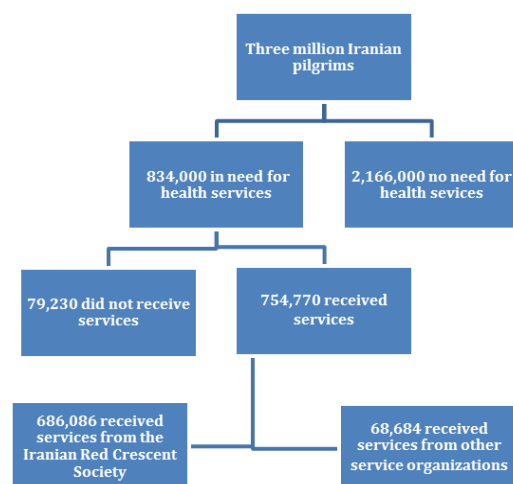
Out of 1,200 selected samples, 1,025 (85.42%) cases answered the phone interviews. The close

**Table 1.** Comparison of characteristics of people in need of medical services with other people

Variable	Group in need of medical services	Group not needing medical services	P-value
Age (mean $\pm$ SD)	43.0 $\pm$ 12.7	40.4 $\pm$ 14.6	0.006
Male (%)	65.3	65.8	0.869
Diabetes (%)	3.9	1.9	0.067
Hypertension (%)	6.3	2.0	0.000
Kidney disease (%)	0.7	0.1	0.189

percentage of men in the three groups of registrants and 1,200 participants indicate the generalizability of this study. The mean age of the participants was reported as 41.2 $\pm$ 14.1 years (age range of 2-78 years). In terms of gender, the majority of cases (65.7%) were male. The mean length of stay in Iraq was 8.5 $\pm$ 3.5 days, varying from 2-25 days. Regarding the underlying diseases, 2.4%, 3.2%, and 0.3% of cases had diabetes, hypertension, and kidney disease, respectively. A total of 285 (27.8%) subjects received medical services. Table 1 compares the participants who demanded medical services and those who did not.

The treatment needs of 285 people included common cold (41.1%), feet blisters (7.0%), heat rash (7.0%), hypertension (4.2%), diarrhea and vomiting (2.1%), leg pain (1.8%), poisoning (1.8%), and other problems (35.1%). In total, 9.5% of the participants did not receive services, and 90.9% of them received services from the IRCS. Based on the results, 95.4% of those who received services from the IRCS and 82.4% of those who received services from other service providers were satisfied with medical services. Figure 1 displays the generalization of the estimated three million Iranian pilgrims in the Arbaeen



**Figure 1.** Generalization of the estimated number of cases in three million Iranian Arbaeen pilgrims according to the gender ratio

Pilgrimage proportional to the gender ratio.

## 5. Discussion

The present study aimed to determine Iranian Arbaeen pilgrims' use of and satisfaction with the provided health services. The results demonstrated that cold was the most commonly reported medical problem of the pilgrims. The presence of people from different countries in this pilgrimage eases the spread of infectious and respiratory diseases. Therefore, considering health issues and distributing masks among pilgrims play a peculiar role in the prevention of respiratory diseases.

A total of 834,000 Iranian in 2019 Arbaeen pilgrim needed medical services, which is a huge number for a 10-15 day event. This number should be multiplied by at least 7 to include the pilgrims from all other countries. About 10% of these people could not get the needed services. Since the majority of Arbaeen pilgrims (90.9%) used the services provided by the IRCS, it can be concluded that the services of this organization were appropriately distributed throughout the journey.

The weaknesses in Iraq's health care system are a major cause of health challenges (12). The communicable and non-communicable disease monitoring system performs a crucial role in the maintenance and promotion of pilgrims' health. The resolution of these challenges requires an enormous amount of effort on the part of Iraq's health system and other countries involved in the event. Training the pilgrims in the country of origin before attending the event and increasing their understanding of health risks are the most effective measure in this regard. Since this is a religious gathering, clerics and religiously accepted individuals can play an important role in educating and changing people's attitudes and perceptions of the risks. Although the interviews with the pilgrims who participated in this event in previous years pointed to the promotion of health level, it was still far from desirable level. The attainment of this goal needs the establishment of health monitoring systems, the development of health facilities, and the provision of necessary training. Moreover, food and drinks, as well as welfare facilities, such as baths, toilets, and accommodation, should be provided by Iraqi officials and monitored by the health system. In addition, municipalities should expand waste collection and disposal facilities. Travel guidelines, such as mandatory vaccine information, can also be helpful (12).

This mass gathering can be associated with public health risks, including communicable and non-communicable diseases, accidents, and terrorist attacks. The occurrence of these events depends on the number of attendees, the gathering nature, the size of the region, as well as the environmental and infrastructural factors. The presence of pilgrims,

including children and the elderly, from different countries, increases their vulnerability (13).

Proper planning before Arbaeen can prevent casualties and health problems, and the involved countries must take preparatory measures for such gatherings. Nevertheless, developing countries do not devote enough attention to required planning due to economic problems, which make such measures unjustifiable, and even seek help from other countries (14). The provision of health facilities and emergency medical services is essential to maintain the safety of pilgrims attending this mass gathering. In Iraq, the Ministry of Health is responsible for the provision of these facilities (2), and it provides primary care systems and mobile hospitals to the pilgrims in cooperation with Iraq's Red Crescent and other experts (9).

The following measures are recommended to improve the health system, meet the challenges, and increase attendees' satisfaction:

1. Launching an active, hyperactive, and syndromic system for rapid monitoring and detection of communicable diseases
2. Developing medical guidelines for mass gatherings
3. Planning electronic follow-up for the Arbaeen pilgrims
4. Planning for rapid transfer of patients and injured pilgrims, as well as the provision of onsite rapid triage at the accident scene (15)
5. Providing electronic management of participants' information
6. Developing health facilities, especially environmental health
7. Providing obligatory training before participation in Arbaeen
8. Conducting various studies on different dimensions of Arbaeen (13)

## 6. Conclusion

Iraq's health system is faced with numerous daunting challenges during the Arbaeen pilgrimage. These challenges are multiplied due to infrastructural shortcomings in Iraq's health system, the lack of precise planning, as well as pilgrims' unpreparedness and lack of training. To obtain pilgrims' satisfaction and minimize the problems, the authorities of Iraq's health system should participate, synergize, and provide health equipment and facilities in cooperation with other organizations from countries participating in the Arbaeen pilgrimage. Comprehensive multi-organizational planning and intra- and extra-organizational coordination before the Arbaeen pilgrimage and training the pilgrims are two key factors in the better organization of this event.

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## Footnotes

**Authors' Contribution:** Ahmad Soltani was responsible for the study conception and design. Farshid Alaedini and Milad Ahmadi Marzaleh performed data collection and prepared the first draft of the manuscript. Ahmad Soltani, Farshid Alaedini, and Milad Ahmadi Marzaleh analyzed the data, made critical revisions to the paper for important intellectual content, and supervised the study.

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