



Barriers and Challenges for Healthcare Professionals in the Context of the Arbaeen Pilgrimage

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Abstract

Background: Mass religious gatherings, especially big events like the Arbaeen Pilgrimage, which attract millions of participants from different nations, have immense spiritual and cultural significance. However, these events are also characterized by inadequate infrastructure, scarce resources, and the huge number of people who gather, which put enormous strain on the healthcare system.

Objectives: To address the major challenges in the provision of health and medical services during such events and to improve the effectiveness and efficiency of health service delivery by overcoming the lack of comprehensive data regarding the specific needs and challenges faced by healthcare professionals.

Methods: The present qualitative research was carried out in this regard to determine the barriers and challenges faced by the medical staff during the Arbaeen Pilgrimage in 2017. Data was collected through in-depth interviews with healthcare workers who were part of the medical mission in the event. Through a conventional approach of content analysis, several major categories were identified.

Results: These included infrastructural deficiencies, shortages of medications and medical supplies, poor coordination between Iranian and Iraqi health systems, workforce shortages, physical and mental fatigue among staff, and the high prevalence of communicable diseases such as respiratory and gastrointestinal infections. In addition, systemic issues such as the absence of clear protocols, insufficient preparedness, and weak inter-organizational coordination further hindered the effective provision of health services.

Conclusions: Overall, the study highlights the need for comprehensive planning, robust cross-border collaboration, targeted training programs, and culturally informed health policies to enhance healthcare delivery during mass religious gatherings. The results provide useful information for policymakers and health system planners who want to support healthcare workers on the ground and improve health outcomes in terms of high-profile religious events.

Keywords: Healthcare Challenges, Arbaeen Pilgrimage, Infrastructural Limitations, Public Health Threats, Infectious Diseases, Logistical Barriers

1. Background

The Arbaeen Pilgrimage is recognized as one of the largest annual religious and social gatherings in the world (1). This event commemorates the 40th day after the martyrdom of Imam Hussain (AS), the third Imam of Shia Muslims, and is marked by a massive walk of

pilgrims from Najaf to Karbala, located south of Baghdad (2). Each year, millions of people – both from within Iraq and neighboring countries – participate in this pilgrimage, with Iranian land borders serving as a major transit route for pilgrims from countries such as Afghanistan and Pakistan (3-5). Recent statistics estimate that approximately 20 million pilgrims attend the

Arbaeen Pilgrimage annually (2, 6, 7), and projections suggest that the number may continue to rise, potentially making it the largest religious gathering in the world (8). The scale and spontaneous nature of such mass gatherings present considerable challenges to public health systems, particularly in terms of providing timely and effective medical services under extraordinary conditions (9). Unlike planned events with controlled settings, the Arbaeen Pilgrimage involves unpredictable movement patterns, limited infrastructure, and high-risk exposure to environmental and communicable hazards (6, 10, 11). Mass gatherings of this magnitude place immense pressure on local and international health systems, especially in contexts where basic sanitation, water safety, and waste management infrastructures are underdeveloped (12-15). The Arbaeen Pilgrimage, in particular, is associated with health risks such as the spread of gastrointestinal and respiratory infections due to crowd density, inadequate hygiene facilities, and limited medical preparedness (1, 9, 16, 17). Given these complexities, healthcare professionals face significant operational, logistical, and psychological challenges while delivering services in the field. Yet, despite the scale and repetition of this annual event, there is a lack of comprehensive research exploring the lived experiences and professional obstacles encountered by frontline medical personnel during Arbaeen.

2. Objectives

This qualitative study aims to fill this gap by examining the barriers and challenges faced by healthcare professionals deployed to provide medical services during the Arbaeen Pilgrimage.

3. Methods

This study employed a qualitative approach using content analysis to explore the challenges encountered by healthcare professionals while providing medical services during the Arbaeen Pilgrimage.

3.1. Participants and Data Collection

Twenty healthcare professionals — including physicians, nurses, public health officers, and paramedics — who had experience providing medical services during the 2017 Arbaeen Pilgrimage were purposively selected. Most had attended the pilgrimage multiple times as part of organized medical missions.

Data were collected through semi-structured interviews using open-ended questions focused on their roles, encountered challenges, coordination issues, public health concerns, and suggestions for improvement. All interviews were audio-recorded, transcribed verbatim, and analyzed using conventional content analysis. Sample guiding questions included: “Would you describe your role and responsibilities during the Arbaeen Pilgrimage?” “What challenges did you experience during service delivery?” “What are your suggestions for overcoming these challenges in the future?”

3.2. Interview Process

Interviews commenced during the period of medical team deployment at the Ali Ibn Musa Al-Ridha (AS) medical station along the Najaf to Karbala route. Each interview lasted between 15 and 30 minutes, and in some cases, due to the demanding field conditions, the interviews were split into two sessions during healthcare workers' rest periods. In total, 15 interviews were conducted with participants from various healthcare backgrounds, including medical specialists, general practitioners, nurses, and support staff. All interviews were conducted with informed verbal consent, recorded, and fully transcribed. In order to establish credibility and scientific authenticity of the study, we followed Lincoln and Guba's (1985) four criteria: Credibility, dependability, confirmability, and transferability, and further strengthened the rigor through method triangulation (integrating qualitative and contextual field data), investigator triangulation, and transparent research processes.

3.3. Data Analysis

The findings of in-depth interviews were analyzed using the conventional content analysis technique, which is especially suitable for investigating under-researched aspects. Audio-recorded interviews were translated verbatim and re-examined several times to achieve optimum immersion in data. The initial codes emerged inductively from the raw text without the constraint of existing theories. These codes were then classified based on similarities and repeating patterns and these were iteratively refined to form broader themes. To increase the validity and reliability of the findings, several researchers who made the coding independently followed up with consensus discussions

Table 1. The Key Challenges, Barriers, and Proposed Solutions for Healthcare Services During the Arbaeen Pilgrimage, 2017

| Categories and Subcategories | Codes |
|---|---|
| Challenges | |
| Ambulance deployment | Lack of proper locations for ambulance deployment. |
| Field hospitals' performance | Limitations in the space and lack of facilities in field hospitals. |
| Communication issues | Dependence on mobile networks for communication between ambulances and supervisors. |
| Weaknesses in disease detection | Weakness in identifying and caring for patients with contagious diseases. |
| Dust storms | Effects of dust storms on pilgrims' health and respiratory issues. |
| Health and cultural challenges | Problems related to waste collection and sanitation of human waste. |
| Lack of resources | Lack of medical equipment like splints and casts. |
| Solutions | |
| Proposal to establish a fixed hospital | Need to strengthen paraclinic services. |
| Use of radio communication and optimization | Proposal to complete a fixed hospital behind field hospitals. |
| Disease prevention | The need for cooperation among different organizations for crisis management. |
| Health supervision | Introducing proper footwear and improving paths to reduce injuries. |
| Service planning | Proposal for supervision of food hygiene and the cleanliness of the rest areas (Mokebs). |
| Creation of communication groups | Need for precise planning for volunteers and optimal use of their time. |
| Increase in the number of doctors | Proposal to create WhatsApp groups for reviewing suggestions and monitoring corrective actions. |

to clear up any differences. MAXQDA software (version 11) was utilized to support systematic coding and organization of the data. The process continued until data saturation was reached, with no new themes emerging in the final interviews.

4. Results

The findings revealed that the challenges faced by the healthcare staff during the Arbaeen Pilgrimage include infrastructure limitations, logistical and operational barriers, human resource constraints, public health threats, and managerial and policy gaps (Table 1).

The data analysis identified five main categories of challenges:

(1) Infrastructure limitations:

- Inadequate medical facilities
- Poor sanitation conditions and waste disposal issues

- Instability in power and water supply

(2) Logistical and operational barriers:

- Shortage of medical supplies and medications
- Difficulties in transportation and referral of critical patients

- Lack of coordination between Iran and Iraq's health systems

(3) Human resource constraints:

- Shortage of specialized personnel

- Fatigue and burnout due to long shifts

- Language and cultural barriers with local patients

(4) Public health threats:

- Outbreaks of communicable diseases (e.g., gastrointestinal and respiratory diseases)

- Issues in health education and disease prevention

- Limited vaccination coverage

(5) Managerial and policy gaps:

- Absence of a unified disaster response framework
- Limited pre-event planning and inter-sectoral collaboration

- Lack of standardized protocols for emergency healthcare service delivery

5. Discussion

The results from this study reveal the inherent complexities and multiple challenges that healthcare personnel encounter during the Arbaeen Pilgrimage. These include infrastructural weaknesses like poor sanitation, inadequate medical facilities, and unstable supply of power and water. Also, logistical obstacles, including lack of medical supplies and drugs and challenges in coordination between Iranian and Iraqi health systems, contribute to the problem. Human capital constraints such as the scarcity of specialized healthcare staff, staff fatigue as a result of working long hours, and cultural or language barriers have also played a significant role in subjecting the medical staff

to stress. Public health threats (outbreaks of gastrointestinal and respiratory infections) as well as lack of preventive measures and health education were also revealed to be of key concern. Further, the research found key managerial and policy shortcomings, such as the lack of a standardized disaster response approach, non-cooperation at intra-sectoral and inter-sectoral levels both prior to and during the occurrence, and poorly streamlined procedures for delivering emergency healthcare. Such challenges indicate an obvious demand for better preparations, coordination, and systematic improvements that would make health service provision more effective in future pilgrimages. One key and unexpected discovery was the effect of cultural and language differences, which retarded communication and provided poor care to the patients. The Arbaeen Pilgrimage is highly popular among internationals, where the complexity of the crowd poses special issues to healthcare professionals in providing proper healthcare to the worshippers. This aspect underlines the need for medical staff to be well-equipped with cross-cultural interaction and language skills while working in such high-stress conditions. The issues noted in this study closely correlate with findings from other research studies conducted during other mass gatherings and pilgrimages, including Arbaeen itself. For example, Nazari et al. (18) also pointed out some parallel key areas of concern, such as insufficient infrastructure of healthcare services, difficulties with surveillance of disease, and ineffective public health promotion. Their findings from the 2022 Arbaeen Pilgrimage, based on interviews with healthcare workers, revealed the crucial need for concerted action between various organizations and across borders. Similarly, health-related problems, including the spread of infectious diseases and poor waste management, were recorded by Moulai et al. (6), which similarly mirrored the problems identified in the current study. Their findings confirmed that loose healthcare structures in event environments are prone to failure if there is no proper planning and cross-border coordination. In addition, there are multiple reports on the high prevalence of infectious diseases at mass religious events, such as respiratory and gastrointestinal diseases (16, 19). These diseases are mostly caused by unhygienic situations, overcrowding, and poor health education. The findings from this study strengthen the above observations by indicating that the poor awareness of pilgrims about health risks and

hygiene plays a role in spreading communicable diseases. This is consistent with past studies that have advocated for improved hygiene, better sanitation, and enhanced public health education during massive events.

The findings from this study provide several important implications for improving healthcare delivery during large-scale religious events such as the Arbaeen Pilgrimage. Primarily, infrastructure must be significantly strengthened to ensure that healthcare facilities are adequately equipped to handle the high volume of patients. This includes enhancing sanitation conditions, ensuring a stable supply of essential utilities like power and water, and increasing the availability of medical equipment and supplies. Moreover, effective coordination between the Iranian and Iraqi health systems must be prioritized to streamline patient referral processes and ensure that resources are efficiently allocated. This will also help in managing medical emergencies and facilitating the rapid movement of patients between medical centers. The establishment of clear communication channels and joint operational planning between these two countries is crucial to avoid any gaps in service delivery. Human resource constraints, such as the shortage of trained personnel and staff burnout, should be addressed by providing adequate training and support to healthcare workers. This training should include cultural competence and language skills to enhance interactions with pilgrims from diverse backgrounds. Additionally, policies to reduce worker fatigue — such as providing adequate rest periods and rotational shifts — could improve service quality and reduce errors caused by exhaustion. Public health education is another critical area. Preventive measures, such as vaccination campaigns and health education on hygiene, should be implemented well in advance of the event. Such initiatives can help reduce the spread of infectious diseases, especially in crowded settings. Furthermore, continuous health surveillance before, during, and after the event is essential to track potential outbreaks and respond promptly. Lastly, policy and managerial changes are necessary to create a unified disaster response framework. This framework should include standardized emergency healthcare protocols, clearly defined roles for healthcare professionals, and enhanced cross-sector collaboration. A well-prepared, coordinated, and well-resourced healthcare system can

more effectively meet the needs of participants in future mass gatherings.

Given the challenges outlined in this study, future research should explore the effectiveness of the interventions recommended for future Arbaeen Pilgrimages. Longitudinal studies could assess the long-term impact of improved infrastructure, health education, and inter-organizational collaboration on public health outcomes. Moreover, research into the cultural aspects of healthcare delivery – such as the role of religious beliefs and practices in shaping health behavior – could provide valuable insights into how healthcare systems can be better tailored to meet the needs of diverse populations. Additionally, comparative studies between different religious gatherings, such as Hajj and Arbaeen, could offer useful lessons in addressing common health issues that arise in these settings. Such research could focus on the differences in healthcare provision, resource management, and public health outcomes in different pilgrimage contexts. Finally, further investigation into the perspectives of the pilgrims themselves could provide a more comprehensive understanding of the challenges and gaps in healthcare provision. This could help ensure that the needs of both healthcare professionals and recipients are considered in future planning and policy development.

5.1. Conclusions

Overall, the Arbaeen Pilgrimage presents a unique opportunity for providing healthcare services and spiritual growth. By identifying challenges, leveraging opportunities, and focusing on strengths, the quality of services and the experience of the pilgrims can be improved. These actions require collaboration, coordination, and effective planning from all relevant institutions to ensure better and sustained services in the years to come.

Footnotes

Authors' Contribution: Study concept and design: L. M.; Analysis and interpretation of data: L. M. and E. S.; Drafting of the manuscript: L. M. and E. S.; Critical revision of the manuscript for important intellectual content: L. M.

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