

## ABSTRACT

**Introduction:** The management of masses during religious events in Karbala which annually attracting millions of people, poses numerous healthcare challenges for Iraq. These challenges vary over time and are complicated by limited information and studies on these gatherings. The main objective of this study was to explore the challenges associated with the provision of health care services to pilgrims.

**Materials and Methods:** A comprehensive survey was used to obtain the objectives of the study. The population of the study 76 hospital managers, 247 medical staff, and 407 pilgrims in Iraq during annual tenth Karbala events in 2023- were all selected through a simple sampling method guided by the Morgan table. The study was conducted across multiple regions associated with mass accumulation management and healthcare provision. The data were collected by using a self-report questionnaire designed by the researcher. The design of the questionnaire involved an iterative process, including a literature review, expert consultation, and pilot testing. The data were then analyzed by using descriptive statistical methods (such as mean, standard deviation, frequencies, and percentages). The findings were presented using tables and figures.

**Results:** The findings of the study Karbala revealed variations in type, number, duration, mode of travel, nationality, and language diversity. Hospital managers identified shortages in infrastructure and overcrowded streets, as well as coordination and planning, while the medical staff cited deficiencies in facilities, reliance on volunteers and the need for training programs. The overcrowding also affected the quality of care. Furthermore, some of shortcomings were related to post-event follow-up and coordination, which particularly affected the quality of life of diabetic and hypertension patients. It was also found that large outbreaks during the events were related to infectious diseases. The emergencies caused by the overcrowding were mostly related to

dehydration. The pilgrims appreciated the presence of healthcare providers and acknowledged the health challenges they faced.

**Conclusion:** The study highlights demographic variations in attendee profiles and significant deficiencies in healthcare provider training, healthcare infrastructure, and emergency preparedness in Karbala mass gatherings. The proposed solutions include language assistance programs, centralized management centers, data collection initiatives, and enhanced emergency systems to improve healthcare delivery during such events.

**Keywords:** Mass gathering, demographic variations, healthcare challenges, language diversity.