

Medical Presentations Reported Among Participants of the Tuwairij Run(Ashura Day), Karbala, Iraq,2024

By

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Abstract

Background: The most common and largest religious mass gatherings in Iraq are Arbaeenia and Ashura, the risk of various health-related problems increased during such events. This study aimed to describe the medical presentation among participants of the Tuwairij Run (Ashura Day) in Karbala City, Iraq, 2024.**Methods:** We conducted a cross-sectional study on all health outlets of the Mass Gathering Medical Center. The data were collected on the participants in the Tuwairij Run on the 17th of July (Ashura Day),2024 who attended the selected outlets including the demographic information, medical presentations and types of services provided by selected outlets.**Result:** A total of 1058 patients enrolled in our study with a mean of age 37.4 years± 13.7 and 86% (912/1058) were male and a higher percentage of patients were in the 20-29 years age group. More than 61% (650/1058) had a history of chronic diseases and more than two-thirds (730/1058) of patients complained of various symptoms such as headache (461/1058), backache, joint pain (455/1058) and heat stroke (370/1058). Most attendees asked for rest (83.1 %), more than one-third of them were treated with analgesic drugs and only 0.7% (8/1058) were referred to the hospital.**Conclusion:** Most of the participants in this activity were male, young, and middle-aged age groups and a high percentage of them had chronic diseases. The more frequently reported

presentations were joint pain and heat stroke. The attendance for these outlets didn't seek for provision of health services only but also for rest, drinking water, and foot massage. Implementation of real-time surveillance and health promotion among participants is recommended.

Keywords: mass gathering, Tuwairij Run, Ashura Day, Karbala, Iraq surveillance

Introduction

Mass gatherings (MGs) have been defined as gatherings of more than 1,000 people. A more comprehensive definition is groups in which people gather for a specific group purpose in a specific location but of variable size for periods ranging from several hours to several days. These gatherings can significantly impact hospitals and emergency medical centers even when triage and treatment are provided in the emergency medical center(1).MGs are classified into two types: spontaneous and planned gatherings. Planned events may be recurring in several locations such as the World Cup or recurring events in a specific location such as the Hajj (2). MGs may occur for religious including Hajj and Umrah in Mecca, the Arbaenia pilgrimage, and the Ashura pilgrimage in Karbala, also MGs held for sporting, political, or artistic purposes (3-6).

Running and jogging can occur in some religious rituals in Islam, for example, running between Al-Safa and Al-Marwa during the Hajj in the holy city of Mecca, known as Sa'i between Al-Safa and Al-Marwa (7), as well as running from the Qantara Al-Salam area in the holy city of Karbala towards the shrine of Imam Hussein ibn Ali(peace be upon them) known as the Tawirij Run during the Ziyarat Ashura in the holy city of Karbala, it is one of the largest human gatherings in Iraq and is held annually in the afternoon of the tenth of lunar month Muharram to commemorate the martyrdom of Imam Hussein, peace be upon him. Millions of Iraqi, Arab, and foreign visitors participate in this activity who run from the Qantara Al-Salam area in Karbala towards the shrine of Imam Hussein, peace be upon him, in the middle of the old city, with a length of up to 2 kilometers, and the number of participants increases year after year(8).

Karbala historian Saeed Rashid Zamizam told the official website, "The date of the founding of this mourning procession in one account is 1855 AD and in another account 1872 AD, meaning that the age of this procession is nearly 150 years." He added, "The founder of this mourning procession is one of the notables of the city of Karbala in the district of Hindiyia (Tuwairij) whose name was Mirza Saleh al-Qazwini, who used to hold a mourning council during the first ten days of Muharram in his house, after which he got on his horse with a group of lovers of the family of the Prophet, peace be upon them, and they began to run, chanting words of Husseini loyalty, and as soon as the people of Karbala saw them, they joined them in the mourning procession" (8). As the number of participants taking part in these events has increased over the years, some

challenges have arisen such as crowding in some places which leads to congestion, some people getting lost, injuries, stampedes, and sometimes deaths(9). Although, in all religious MGs that were held in Iraq throughout the year, particularly in Karbala, Najaf, and Baghdad, there are specific considerations and measures were taken during preparations for managing the movement of visitors and distributing the participating crowds to reduce stampede incidents, during Tuwairij Run in September 2019, the martyrdom of 31 people and the injury of 102 others, during a stampede that occurred among visitors in the Husseini shrine during the Tuwairij Run in Karbala province (10).

Since these religious MGs follow the lunar calendar, seasonal variation should be taken into consideration during planning and preparedness for these events, although the Hajj administration has used the latest methods to manage events (e.g., modern communication technologies, and infrastructure, live crowd analysis, time scheduling, well-trained scouts and police forces), there are still some problems such as unexpected congestion that can occur(9).

During the MGs held in Karbala Holy City, the Mass Gathering Medical Center of Health and Medical Education Authority affiliated with Ataba Hussainya provided various medical and other services through seven healthcare outlets distributed around Imam Hussein and Abbas Holy Shrine. These healthcare outlets consisted of medical emergency units (Class A outlets) equipped with basic medical instruments, including glucometers, stethoscopes, thermometers, mercury sphygmomanometers, defibrillators, resuscitation bag valves, and laryngoscopes, in addition to portable U/S, X-ray, and a laboratory unit to carry out some investigations as complete blood picture, troponin, urine ketones, and renal function test. These outlets also provided surgical instruments to perform some surgical operations such as suturing and dressing of wounds. Life-saving medications were present in these outlets as hypertonic glucose, Pulmicort and Ventolin nebulizers, Atropine, Adrenaline, Amiodarone, Adenosine, and IV hydrocortisone.

Despite many studies that covered various aspects of Arbaeenia and Ashura MGs in Iraq, to our knowledge, this is the first study that highlighted the main health problems among participants in the Tuwairij Run and the types of provided services by healthcare outlets.

Objective:

- To describe the medical presentations reported among participants of the Tuwairij Run, Karbala,2024.
- To describe the types of services offered by healthcare outlets.

Methods and Materials

Study design and setting: A cross-sectional descriptive study was conducted in the healthcare outlets of the Mass Gathering Medical Center affiliated with the Health and Medical Education Authority of the Holy Shrine of Imam Hussain during the Ashura in the holy city of Karbala. The data were collected on the participants in the Tuwairij Run on the 17th of July (Ashura Day), 2024 who attended the selected outlets.

Data Collection Tool:

The data collection team of 160 medical students from Al-Sabtain University for Medical Sciences and Warith Al-Anbiya Medical College in the holy city of Karbala, where two training workshops were conducted for training data collectors to fill an -electronic questionnaire created on Kobo toolbox. The data collectors were distributed at the selected health outlets with supervision by persons from Al-Sabtain University and the Mass Gathering Medical Center.

The questionnaire was divided into two sections: The first section includes the demographic information of the patient (age, gender, and nationality). The second section consists of respiratory, gastrointestinal, and other symptoms as well as past medical history for any chronic diseases such as hypertension, diabetes mellitus, and others. This section also includes questions related to the specific consideration that should be taken by participants in this event activity to protect themselves from the hot climate effects such as covering the head from direct sun rays and drinking water. Types of medical services provided by the health outlets as the provision of medications, and wound suturing in addition to other services as the provision of drinking water were included in this questionnaire as well as the outcomes of the patients.

Data management and analysis: Data cleaning was done and analysis by using Excel software. The descriptive analysis informs of frequency, mean, standard deviation, and percentage were displayed in tables and figures.

Result:

A total of 1058 patients enrolled in our study with a mean of age 37.4 years \pm 13.7 and 86% (912/1058) of them were male, 90.6% (959/1058) were from different Iraqi provinces with higher percent (34%) from Karbala province where the Iranian patients were the more encountered (71.7%, 71/99) among other nationalities (table 1).

Table 1: Demographic characteristics of patients who attended the selected healthcare outlets during the Tuwairij Run activity, Karbala, 16/7/2024

Variables	Number	Percent
Age -groups (years) (N=1058)		
≤ 10	3	0.3
11-19	77	7.3
20-29	291	27.5
30-39	225	21.3
40-49	226	21.3
50-59	165	15.6
≥ 60	71	6.7
Gender (N=1058)		
Male	912	86.2
Female	146	13.8
Nationality (N=1058)		
Iraqi	959	90.6
Others	99	9.4
Country (for other nationality, (N= 99)		
Iran	71	71.7
Pakistan	13	13.1
Lebanon	7	7.1
Bahrain	5	5.1

Syria	1	1.0
Saudi-Arabia	1	1.0
Others	1	1.0
Province for Iraqi participants, (N= 959)		
Karbala	362	34.2
Baghdad	124	11.7
Najaf	103	9.7
Babylon	83	7.8
Basra	74	7.0
Diwaniya	68	6.4
Thiqar	39	3.7
Wassit	35	3.3
Muthanna	30	2.8
Mission	28	2.6
Diyala	11	1.0
Sulmania	1	0.1
Salahdeen	1	0.1

More than 61% (650/1058) had a history of chronic diseases. The majority of reported consultations were hypertension (47.5%), diabetes mellitus(21.5%,) and to a lesser extent respiratory and cardiovascular diseases (figure 1).

Our results revealed that more than two-thirds (730/1058) of patients who attended the selected healthcare outlets complained of various symptoms such as headache (461/1058), backache, joint pain (455/1058), and heat-related illnesses(370/1058), however, only small percent present with fainting attack, chest pain or injuries as wounds (figure 2).

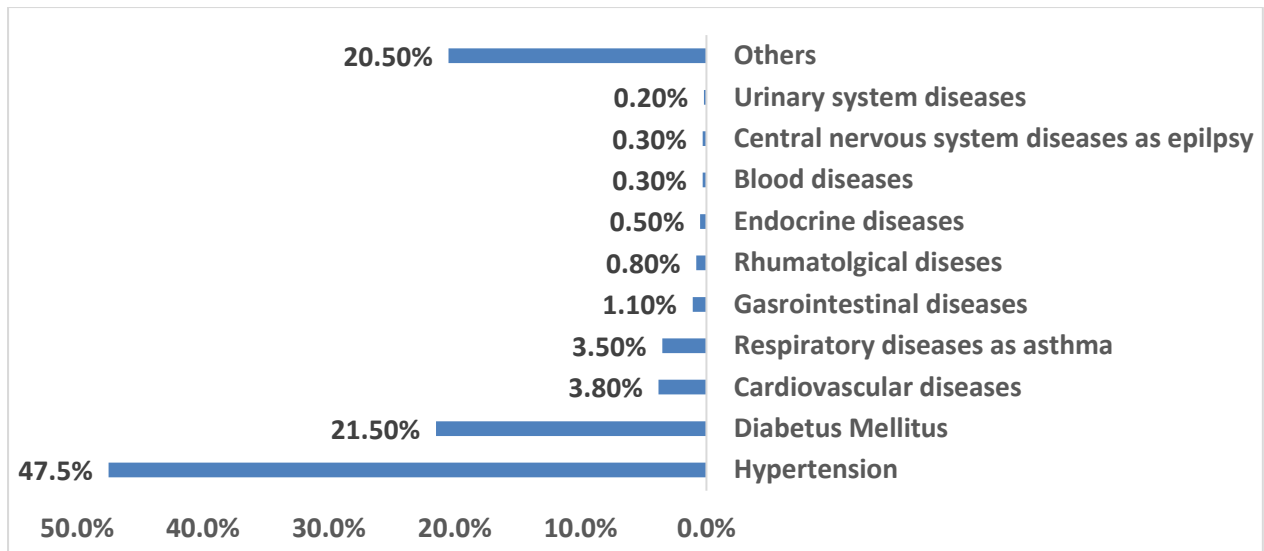


Figure 1: Distribution of reported consultations of chronic diseases for patients who attended the selected healthcare outlets during the Tuwairij Run activity, Karbala,16 /7/2024

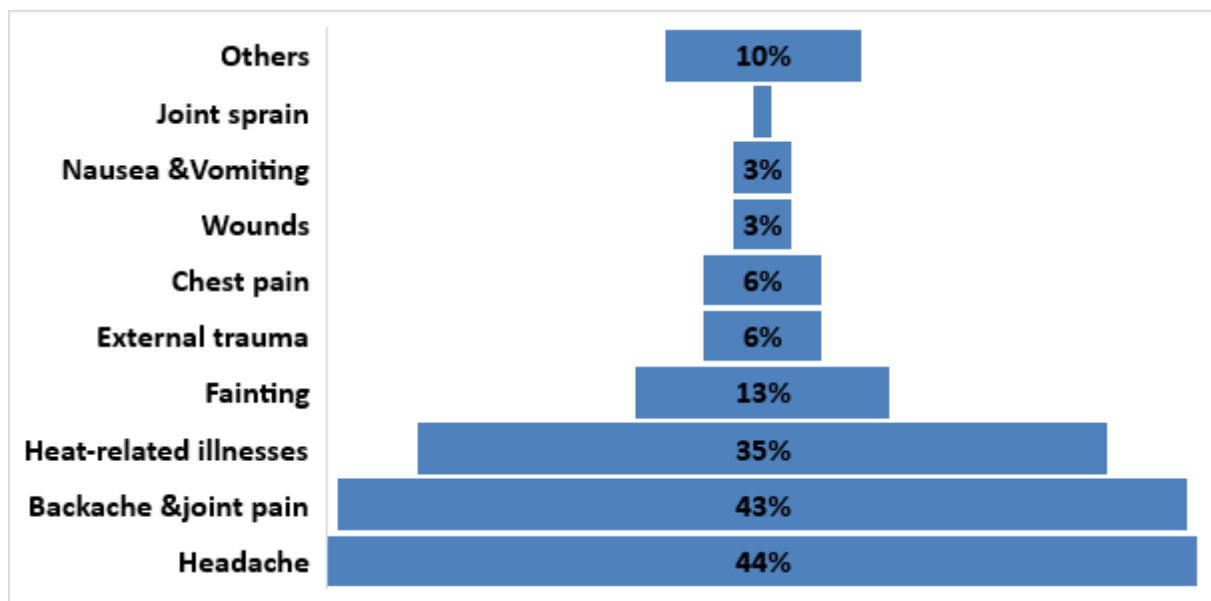


Figure 2: Distribution of reported symptoms of patients who attended the selected healthcare outlets during the Tuwairij Run activity, Karbala,16 /7/2024.

Regarding the specific consideration that should be taken by participants in this event activity for protection themselves from hot climate effects, only 11 % (113/1058) covered their heads from direct sun rays and 57 % (605/1058) drank water during this journey and only 0.2% (2/1058) take soft or energy drinks.

Since the healthcare outlets of Mass Gathering Medical Center provide various services other than health services to the participants during MG events, the majority of attendees asked for rest (83.1 %), drinking water (55 %), and cooling the body due to the extreme heat (36.2 %). More than one-third of attendees (361/1058) received analgesics and 7.1% (70/1058) were admitted for intravenous fluid therapy and only 7.3 %(77/1058) needed wound dressing and suturing (table 2).

More than 82% (868/1058) of patients were discharged well and only 0.7% (8/1058) were referred to the hospital.

Table 2: Types of health and other services provided by healthcare outlets of Mass Gathering Medical Center during Tuwairij Run activity, Karbala,16/7/2024

Type of services	Number	Percent
Sitting for rest	879	83.1
Provision of drinking water	582	55.0
cooling the body due to the extreme heat	386	36.2
Treatment with analgesics	361	34.1
Wound dressing and suturing	77	7.3
Admission for intravenous fluid therapy	70	7.1
Foot massage	15	1.4
Fractures treatment	5	0.5
Others	57	5.4

Discussion

This study aimed to describe the medical presentations of the participants in the Tuwairij Run activity, this activity had a special feature in that millions of participants ran about two kilometers to reach the Imam-Hussain Holy shrine which might lead to different medical complaints and accidental injuries among participants, and if we added to that, these religious MGs follow the lunar calendar so that weather variation must but in consideration.

Our findings showed that the majority of patients who were seeking healthcare at selected outlets were males, young, and in the middle age –groups and this is explained as males only participating in this activity, as mentioned previously participants in this ceremony ran for a long distance that old age people can't handle running for this distance.

This study demonstrated an increase in consultation for chronic diseases, particularly hypertension and diabetes mellitus, and less extant cardiovascular disease, that is might be due to changes in physical activity, food habits, and adherence to the medication which might disrupted during MG, this result consistent with other studies conducted on religious MGs in Iraq during Ashura and Arbaenia and other studies in the region (11-15).

Although the consultation for respiratory and gastrointestinal diseases is expected to increase during such gatherings, the proportion of attendees with such symptoms was less, however, this is as same findings of a study conducted during Arbaenia MG in Iraq,2014, but didn't consistent with the result of real-time surveillance conducted on Arbaenia MG in Iraq,2016 that showed the major categories of reported infectious diseases were respiratory and gastrointestinal symptoms, that may be the seasonal variation play a role(16,17).

The majority of the reported presentations at the selected facilities were musculoskeletal disorders due to the loads of walking and that is the same finding reported among the pilgrims during the Arbaenia MGs in Iraq (17,18).

Since these religious MGs follow the lunar calendar and this studied event, Tuwairij Run happened in July during the day under direct exposure to the sun, our findings that heat-related illnesses were reported in high percentage among

attendance which is most likely due to hot weather and physical exertion (19)., such findings also reported among pilgrims in Hajj (20), furthermore, most of them had chronic comorbidities and didn't take special consideration for protection themselves against heat-related illnesses as shown in our results that approximately 43% didn't drink water during this journey, while regular drinking of water will reduce the development and severity of heat-related illnesses as the study showed that consumption of 250 ml of fluid every 30-45minutes lead to prevention of such diseases (21).

Many studies done on MGs documented that the risk of trauma and various types of injuries increased during such events (11,17,22), our result revealed that the percentage of participants in this studied ceremony had external trauma and this was expected as many injuries happened during the same activity in 2019 (10).

MGs require well-planned healthcare services including outpatient care services for mild cases, care for medical emergencies, and access to ambulance service, our study demonstrated that selected healthcare outlets of Mass Gathering Medical Center provide medical services such as drug prescription, wound suturing and dressing in addition to other services such as preparing special places for the attendances for rest, water drinking and foot massage, these services also reported in another study described the types of services provided by community-based facilities during Arbaenia MG (23).

Our study has some limitations since the data collected only from healthcare outlets belonging to the Mass Gathering Medical Center and other health outlets were not included. The overall burden of this event cannot be measured accurately, especially the more severe illness and injury cases managed at the hospital, furthermore, lack of standard definitions for some medical presentations.

Conclusion and recommendations:

We can conclude that most of the participants in this activity were male, young, and middle-aged age groups, however, a high percentage of them had chronic diseases. The more frequently reported presentations were joint pain and heat stroke and the majority of them didn't take special consideration from hot weather. The attendance for these outlets didn't seek for provision of health services only but also for rest, drinking water, and foot massage.

Finally, it is recommended that health surveillance systems during mass gatherings should cover all facilities that provide health services during the event and give accurate measurement of the burden of these events and subsequently facilitate better planning for future events, furthermore, implementation of real-time syndromic surveillance during MGs, this enables for early outbreak detection and control measures implementation as early as possible. Health promotion among participants of such gathering events related to the risk of infectious disease transmission and raising awareness regarding the risk of heat-related illnesses and injuries through educational campaigns before and during MGs were recommended.

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