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The Knowledge, Attitude, and Practice of Iranian Pilgrims Regarding Heat-Related Illness during Arbaeen Hosseini Ceremony, as Religious Mass Gathering in the Karbala, Iraq

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Abstract

Background and Objectives: The Arbaeen Hosseini (PBUH) ceremony, a significant religious mass gathering, poses potential risks for heat-related illnesses, especially in the hot and humid climate of Karbala, Iraq. This study aimed to assess the knowledge, attitude, and practice (KAP) regarding heat-related illnesses and their associated factors among Iranian pilgrims at the Arbaeen Hosseini ceremony in Karbala, Iraq.

Methods: This cross-sectional study collected data through a questionnaire. Pilgrims were sampled using convenience sampling at various borders of Iran and Iraq, as well as along walking routes to Karbala and in Iraqi cities.

Results: Data from 1,413 pilgrims were analyzed. The mean scores for knowledge, attitude, and practice on a scale of 0-100 were 72.28, 53.19, and 62.34, respectively. Female pilgrims scored significantly higher than male pilgrims in knowledge, attitude, and practice ($P<0.05$). There was also a significant positive relationship between education and both knowledge and attitude scores ($P<0.05$), but not between education and practice scores ($P=0.237$).

Conclusion: The knowledge, attitude, and practice of Iranian Arbaeen pilgrims regarding heat-related illnesses are moderate to high. KAP scores are associated with demographic factors such as age and sex. However, there are gaps in knowledge and practice, particularly among men and individuals with lower education levels.

Keywords: Heat Stress Disorders, Heat Stroke, Attitude to Health, Mass Gatherings, Iraq

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↑*Question* *To investigate the knowledge, attitude, and practice (KAP) regarding heat-related illness and its associated factors among Iranian pilgrims participating in the Arbaeen Hosseini ceremony in Karbala, Iraq.*

Findings *The mean score for correct knowledge was 72.3%. The correct attitude and practice scores were 72.28% and 53.19%, respectively. Some variables, such as education, did not have a significant relationship with the pilgrims' practice.*

→*Meaning* *This study showed that while the mean knowledge score of Arbaeen pilgrims is relatively high, there are gaps in both knowledge and practice. Despite having correct knowledge, pilgrims may not always be able to practice it correctly.*

1. Introduction

The Arbaeen Hosseini ceremony is a significant religious, social, and cultural event held annually in Karbala, Iraq, attracting millions of pilgrims from around the world (1). It stands as one of the largest religious gatherings globally, showcasing the profound love and devotion to Imam Hossein (PBUH) and his companions (1, 2). However, addressing the health needs of these pilgrims poses a challenge, particularly in the hot and humid climate. Heatstroke and other heat-related illnesses are serious health risks that intensify each year due to seasonal changes and the lunar calendar (3).

Heatstroke is a life-threatening condition that occurs when the body temperature rises above 40°C due to prolonged exposure to high environmental heat or physical exertion. If not treated promptly, heatstroke can cause organ damage, coma, or even death (4, 5). Studies have shown that heat-related illnesses can be prevented and treated by increasing public awareness and providing adequate infrastructure (6, 7). The health system must also focus on the health and treatment services for pilgrims through proper planning and organization. In recent years, significant infrastructure has been provided for pilgrims attending the Arbaeen Hosseini ceremony by Iraq and especially the Iranian government. These include Mawakeb (rest areas), transportation options like buses, trains, and flights, among others. These facilities can effectively reduce the incidence of heat-related illnesses. However, the knowledge and correct practices of pilgrims and participants in these mass gatherings, especially along the long routes of this spiritual ceremony, are crucial in preventing heat-related illnesses and their consequences (7, 8).

Several studies have explored the knowledge, attitudes, and practices (KAP) of pilgrims and residents regarding the prevention and management of heatstroke and heat-related illnesses in various regions (9-13). These studies highlight that heat-related illnesses are a common and serious health issue for pilgrims and people living in hot climates. However, no research has been conducted specifically on Iranian pilgrims participating in the Arbaeen Hosseini ceremony in Karbala. This study aims to assess the KAP regarding heat-related illnesses and their associated factors among Iranian pilgrims, in a large sample, at the Arbaeen Hosseini ceremony in Karbala, Iraq. It is the first large-scale study in this field.

2. Materials and Methods

2.1. Study Design, participants and sampling

The study was conducted using a cross-sectional design. Participants were Iranian pilgrims who took part in the walking and mourning ceremony of Arbaeen Hosseini in Karbala in September 2022. The study included pilgrims aged 16 and above who provided informed consent to participate.

We estimated that 50% of the pilgrims had adequate knowledge, attitude, and practice (KAP) regarding heat-related illnesses. We also considered a 3% margin of error and a 95% confidence level, resulting in a minimum required sample size of 1,068 people. In the end, we managed to sample more than this number. The sample was drawn from pilgrims at various borders between Iran and Iraq, walking routes to Karbala, and cities in Iraq. Due to the nature of the Arbaeen ceremony, random sampling was not feasible, so we used convenience sampling, selecting participants based on their accessibility and availability to the researchers.

2.2. Tools and data collection

Participants were asked to complete a self-administered questionnaire after being informed about the study's objectives. To increase the generalizability of the results, we did not exclude illiterate individuals. For these participants, trained interviewers filled out the questionnaire by reading the questions and answers exactly as they appeared, without giving any directions or altering the wording, to accurately record their responses.

The data was collected using a structured Persian questionnaire. To prepare the questionnaire, we first reviewed previous studies (9, 14, 15). Based on existing questionnaires, we created a pool of questions and translated them using the Forward-Backward method. The face and content validity were then assessed by an expert panel. Finally, the questionnaire was modified to suit the study setting and population.

The content validity of the questionnaire was confirmed with a content validity ratio (CVR) for questions ranging from 0.8 to 1.0. The content validity index (CVI) for clarity and relevance, based on the mean approach, was 0.937 and 0.995, respectively. The Cronbach's alpha for the final questionnaire was 0.75, indicating acceptable reliability. Additionally, the internal reliability for the knowledge, attitude, and practice domains was 0.68, 0.64, and 0.48, respectively.

In addition to questions about demographic and basic variables, the questionnaire included 17 questions on knowledge, 11 on attitude, and 10 on practice. Each correct answer was awarded 1 point, while 0 points were given for lack of knowledge, incorrect, or inappropriate answers. To determine the minimum and maximum possible scores for the questionnaire domains (KAP), a standardized score ranging from 0 to 100 was calculated using the following formula: Standardized Score (z) = ((Original Score (x) - Minimum Original Score) / (Maximum Original Score - Minimum Original Score)) × 100.

2.3. Statistical analysis

We used frequency and mean with standard deviation (SD) to describe the data. The normality assumption was checked using the Kolmogorov–Smirnov test and graphical methods like normal Q-Q plots and histograms. We used the independent t-test to examine the relationship between KAP scores and binary variables such as gender. For multilevel variables like education, we used one-way analysis of variance (ANOVA). A p-value of less than 0.05 was considered statistically significant. All statistical analyses were

performed using Stata v.17 software.

2.4. Ethics and confidentiality

Throughout all stages of the study, from implementation to analysis, all ethical considerations were observed. The study was approved by the Research Ethics Committee of the Education, Research, and Technology Division of the Iranian Red Crescent Society (IR.RCS.REC.1401.008).

3. Results

3.1. Characteristics of the Study Population

This study analyzed data from 1,413 Arbaeen Hosseini pilgrims to Karbala, Iraq. More than half of the participants were male (59.3%) and married (64.4%). The participants' ages ranged from 16 to 120 years, with a mean age of 38.4 years (SD=13.8). The most common occupations were housewives (27.7%) and employees (17.6%). Most participants reported moderate (47.0%) or good (45.2%) economic status, with only 2.3% reporting poor or very poor economic status. The body mass index (BMI) of participants ranged from 14.69 to 55.56 kg/m², with a mean of 25.4 (SD=4.3), and 45.3% of participants had a normal weight. Education levels varied from middle school or less (18.6%) to postgraduate, doctorate, or higher (7.8%), with a bachelor's degree being the most common (29.9%) (Table 1).

Table 1. Characteristics of the Iranian pilgrims of Karbala, Iraq (n=1413)

Variable	Category	Number	Percent
Sex	Female	618	43.7
	Male	795	59.3
Age, year	≤20	143	10.1
	20-30	287	20.3
	30-40	431	30.5
	40-50	307	21.7
	50-60	160	11.3
	≥60	85	6.0
Marital status	Married	910	64.4
	Single	474	33.5
	Divorced	12	0.8
	Widow	17	1.2
Employment status	Student	210	14.9
	Housewife	349	24.7
	Employee	248	17.6
	Retired	67	4.7
	Businessman	87	6.2
	Health care worker	26	1.8
	Other	426	30.1
Economic status	Very good	77	5.4
	Good	639	45.2
	Moderate	664	47.0
	Bad	26	1.8
	Very bad	7	0.5
Body mass index (BMI)	Underweight	55	3.9
	Healthy Weight	634	45.3
	Overweight	553	39.5
	Obesity	129	9.2
	Excessive obesity	30	2.1
Education status	Illiterate	42	3.0
	Elementary	90	6.4
	Middle school	131	9.3
	High school	374	26.5
	Associate degree	242	17.1
	Bachelor's degree	423	29.9
	Master degree	98	6.9
	Doctorial, PhD and above	13	0.9

3.2. Knowledge

The correct answers to the knowledge questions ranged from 36.9% to 91.9%. The lowest score was for the question about daily water intake during the Arbaeen walk, while the highest score was for the question about the need to drink more water in hot weather (Appendix 1).

The mean knowledge score, based on a standardized scale of 0-100, was 72.3 (SD=16.0), with scores ranging from 1.2 to 97.7. Participants' knowledge scores were significantly influenced by gender (P=0.002), age (P=0.041), occupation (P=0.001), education level (P<0.001), and previous experience attending the Arbaeen ceremony in Karbala, Iraq (P=0.035), but not by marital status (P=0.102). Females, young and middle-aged individuals, businesspeople, pilgrims with bachelor's degrees, and those with prior experience attending Arbaeen ceremonies had the highest knowledge scores (Table 2).

3.3. Attitude

The correct attitudes for the questions ranged from 27.8% to 79.9%. The lowest score was for the question about performing Arbaeen rituals or walking even if it is crowded, while the highest score was for the question about dressing according to weather conditions (Appendix 1).

The mean attitude score, based on a standardized scale of 0-100, was 53.2 (SD=18.2), with scores ranging from zero to 100. The mean attitude score was significantly higher in females (55.5 vs. 51.4; P<0.001) and young and middle-aged individuals (P=0.001). The mean score was marginally significant with education level, being lower in illiterate or elementary-educated participants (P=0.044). There was no significant difference in attitude scores based on marital status (P=0.204), occupation (P=0.320), or previous experience attending the Arbaeen ceremony in Karbala, Iraq (P=0.142) (Table 2).

3.4. Practice

The correct practices for the questions ranged from 30.3% to 89.8%. The lowest score was for the question about drinking water only when thirsty, while the highest score was for the question about dressing according to weather conditions (Appendix 1).

The mean practice score, based on a standardized scale of 0-100, was 62.3 (SD = 18.7), with scores ranging from zero to 100. Participants' practice scores were significantly influenced by gender (P<0.001), age (P<0.001), marital status (P=0.012), and occupation (P<0.001). Practice scores were higher among females, younger individuals, single participants, housewives, and students. However, practice scores were not associated with education level (P=0.237) or previous experience attending the Arbaeen ceremony in Karbala, Iraq (P=0.154) (Table 2).

3.5. Correlation between Knowledge, Attitude, and Practice

The results showed a weak to moderate correlation between the domain scores. The correlation coefficient was

Table 2. The standardized knowledge, Attitude and practice mean score (0-100) of heat-related illness by demographic, basic variables and the Arbaeen ceremony experience in the past years

		Knowledge		Attitude		Practice	
		Mean (SD)	P-value	Mean (SD)	P-value	Mean (SD)	P-value
Sex	Female	73.78 (15.45)	0.002	55.53 (18.39)	<0.001	66.60 (17.13)	<0.001
	Male	71.11 (16.29)		51.37 (17.87)		59.03 (19.27)	
Age, year	Less than 20	71.10 (17.42)	0.041	54.55 (16.54)	0.001	62.94 (17.15)	<0.001
	20-30	72.23 (16.27)		55.02 (18.99)		64.53 (17.09)	
	30-40	73.43 (15.70)		55.03 (18.26)		64.94 (18.74)	
	40-50	73.37 (14.13)		50.55 (18.04)		59.32 (20.05)	
	50-60	s69.15 (17.81)		49.83 (17.24)		59.50 (18.79)	
	More than 60 years	70.55 (15.90)		51.23 (18.55)		57.06 (18.76)	
Marital status	Married	72.26 (15.79)	0.102	52.55 (18.39)	0.204	61.87 (19.09)	0.012
	Single	72.70 (16.35)		54.37 (17.89)		63.76 (17.93)	
	Other (divorced/deceased spouse)	66.17 (15.00)		53.92 (17.34)		54.14 (18.03)	
Occupation	Student	72.29 (15.37)	0.001	55.11 (16.78)	0.320	63.67 (16.23)	<0.001
	Housewife	73.57 (14.53)		53.95 (18.72)		65.96 (17.20)	
	Employee	73.69 (16.75)		52.13 (18.39)		60.52 (19.03)	
	Retired	69.41 (17.38)		52.37 (17.91)		55.07 (17.00)	
	Businessman	76.21 (14.23)		54.44 (14.77)		60.80 (19.84)	
	Health care worker	65.29 (15.88)		48.25 (19.37)		55.77 (15.79)	
	Other	70.47 (16.73)		52.41 (18.93)		61.64 (20.48)	
Education	Illiterate or elementary	68.95 (16.55)	<0.001	48.69 (16.48)	0.044	60.38 (18.63)	0.237
	Middle school	71.09 (16.69)		54.75 (20.78)		63.59 (18.77)	
	High school	72.51 (15.19)		52.50 (15.14)		63.18 (18.03)	
	Associate degree	69.53 (16.11)		53.57 (19.73)		60.37 (19.20)	
	Bachelor's degree	74.96 (15.15)		54.18 (18.79)		63.24 (18.97)	
	Master degree and higher	72.66 (18.15)		54.38 (20.10)		61.26 (19.07)	
Arbaeen ceremony experience in Karbala (Iraq)	I don't have (this is the first time)	71.11 (16.76)	0.035	52.14 (18.40)	0.142	62.16 (19.68)	0.154
	I have, once	73.67 (15.49)		54.17 (18.62)		63.94 (17.79)	
	I have, more than once	72.91 (15.07)		53.96 (17.56)		61.36 (17.99)	

0.288 for knowledge and attitude (P<0.001), 0.443 for knowledge and practice (P<0.001), and 0.486 for attitude and practice (P<0.001).

4. Discussion

This study examines the knowledge, attitude, and practice (KAP) regarding heat-related illnesses and their associated factors among Iranian pilgrims at the Arbaeen Hosseini (PBUH) walking and ceremony in Karbala, Iraq.

The pilgrims' knowledge, attitude, and practice scores varied based on several factors. The study also identified gaps in knowledge and practice among pilgrims, consistent with previous research (15). Demographic factors such as age, gender, and education level influenced the KAP scores. These findings align with another study that reported associations between age, gender, and education level with good knowledge and practice of HRIs among pilgrims (15). Marital status also affected behavior, with single pilgrims scoring higher than married ones. This is consistent with previous research showing similar associations between these variables and health outcomes (10). Additionally, like other studies (10, 16), this study found significant differences between male and female pilgrims in their KAP scores, suggesting that gender-specific factors such as cultural norms, social roles, or access to information may influence health awareness and behaviors.

The present study showed that KAP (knowledge, attitude, and practice) in young and middle-aged groups is better than in other age groups, which is consistent with findings in similar populations and settings (16). Therefore, there is a need for interventions to increase awareness and improve practices among both younger and elderly pilgrims.

The results of this study show that previous experiences at the Arbaeen ceremony in Karbala, Iraq, have an impact on pilgrims' knowledge and practices regarding heat-related illness prevention. This aligns with another study that found having experience with heat-related illnesses was associated with higher awareness scores (14). This implies that exposure to the harsh climate and challenging conditions of the pilgrimage can increase health consciousness and behavior among pilgrims.

The knowledge, attitude, and proper practices of pilgrims and participants in the long walks of this spiritual ceremony are crucial for preventing heatstroke and its consequences. The results of this study show a gap between the knowledge and practice of pilgrims regarding drinking water during the mourning ceremony. Although most pilgrims were aware of the importance of drinking water in hot weather, they did not follow the recommended guidelines for daily water intake and hydration signs. This finding is consistent with another study that reported similar misconceptions and preferences among pilgrims (15). The lack of adequate knowledge and correct practices about drinking water could increase the risk of heatstroke and dehydration among pilgrims, especially in crowded and stressful conditions. Therefore, it is essential to provide effective education and intervention programs to improve pilgrims' awareness and practices regarding drinking water. Additionally, ensuring the availability and accessibility of clean water and sanita-

tion facilities for pilgrims, as well as monitoring and enforcing hygiene standards, is necessary. These measures could help prevent the spread of diseases and infections that may deter pilgrims from drinking enough water.

The results of this study indicate a need to improve the attitudes and practices of pilgrims. The study revealed that many pilgrims, despite having sufficient knowledge, did not have the right attitudes and practices regarding planning for walking and other mourning programs. They were determined to perform the rituals according to their schedule, regardless of the crowd and weather conditions. These results can be explained by the characteristics of the situation and the population studied. Although in this study we presented the attitude score using a two-way scale (correct and incorrect attitudes for the questions), which facilitated comparison with other KAP domains and provided a percentage of correct attitudes, this method of measurement can have limitations and may not capture the full range of attitudes.

In some cases, pilgrims may have adequate knowledge and the correct attitude about the issues, but they may not be able to implement them due to the conditions of the ceremony. For example, most pilgrims had correct knowledge about wearing suitable and light clothes in hot weather, but only a small percentage followed this advice because of the nature of the ceremony. Alternatively, pilgrims may take preventive measures against heat-related diseases not because of their knowledge, but because of their experience from attending this event in previous years. For instance, this study also showed a significant relationship between education and knowledge, but not between education and practice. This is consistent with other similar studies that found a weak correlation between KAP domains in mass gatherings.

The results of this study align with another study that reported low use of protective equipment, such as umbrellas, sunscreen, sunglasses, and hats, among pilgrims (17). The study suggested that not using these measures increased the risk of heat-related illnesses (HRIs) among pilgrims by more than eightfold (16). The previous study also indicated that the "penguin effect" and the high humidity and temperature inside the tents could increase the risk of HRIs among pilgrims. It is recommended that environmental conditions and facilities for pilgrims be improved and monitored to ensure their safety and comfort (18, 19). Therefore, health authorities and organizers should provide adequate education and awareness programs for pilgrims before and during this mourning ceremony.

5. Conclusion

The knowledge, attitudes, and practices of Iranian Arbaeen pilgrims regarding heat-related illnesses are moderate to high. The findings suggest gaps in knowledge and practice, particularly among the elderly, the less educated, and the married. Knowledge scores are associated with certain demographic and baseline factors, as well as previous Arbaeen ceremony experiences in Karbala, Iraq. However, practice scores were not associated with education or Arbaeen ceremony experience.

Ethical Statement

The study was approved by the Research Ethics Committee of the Education, Research, and Technology Division of the Iranian Red Crescent Society (IR.RCS.REC.1401.008).

Authors' Contributions

Conceptualization: P.K, P.S., P.H-S., H.R.; Data curation: P.H-S., N.S., H.R.; Formal analysis: Z.O-A., H.R.; Investigation: Z.O-A., P.S., H.R.; Methodology: P.H-S., N.S., H.R.; Project administration: Z.O-A., P.K., P.S., P.H-S., N.S., H.R.; Writing—original draft: Z.O-A., P.H-S., H.R.; Writing—review & editing: all authors.

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Conflict of Interests

The authors declare that they have no competing interests.

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Appendix 1. Distribution of answers to knowledge, attitude and practice questions regarding Heat-Related Illness During Arbaeen Hosseini Ceremony, Karbala, Iraq (n=1413)

Statement/Question	Answers	Number	Percent
Attitude questions			
Should we drink more water during a hot day, even if we are not thirsty?	No	396	28.0
	Yes	1017	72.0
Is it better to use an umbrella in areas without shade while performing Arbaeen?	No	529	37.4
	Yes	623	44.1
	Not applicable	261	18.5
If the weather becomes very hot during the days of Arbaeen, should we postpone our mourning and actions until it cools down?	No	328	23.2
	Yes	861	60.9
	Not applicable	224	15.9
If possible, in the evening or at night, when the weather is cooler, should we perform mourning and Arbaeen walking?	No	124	8.8
	Yes	1129	79.9
	Not applicable	160	11.3
Even if it is crowded, we should walk according to the schedule or perform Arbaeen rituals.	No	393	27.8
	Yes	1020	72.2
Should we pay for an umbrella to be in the shade?	No	276	19.5
	Yes	882	62.4
	Not applicable	255	18.0
Should we use sunscreen during the day when mourning or walking?	No	322	22.8
	Yes	952	67.4
	Not applicable	139	9.8
When we feel thirsty, should we drink soft drinks, tea or coffee instead of water?	No	708	50.1
	Yes	597	42.3
	Not applicable	108	7.6
Is it possible to decide not to drink water despite being thirsty because of the fear of water contamination?	No	576	40.8
	Yes	837	59.2
Should we drink less water than the body needs in order to find less need for the bathroom?	No	722	51.1
	Yes	691	48.9
Should we only use bottled water even if we feel thirsty?	No	404	28.6
	Yes	1009	71.4
Practice questions			
I dress according to the weather.	No	144	10.2
	Yes	1269	89.8
I walk a shady road even if it takes longer.	No	245	17.3
	Yes	1168	82.7
I use an umbrella in areas without shade while performing Arbaeen and walking.	No	422	29.9
	Yes	732	51.8
	Not applicable	259	18.3
I only drink water when I feel thirsty.	No	428	30.3
	Yes	985	69.7
How much water do you drink on average during Arbaeen walking and mourning?	Less than 1.5 liters	29	2.1
	1.5 to 2 liters	135	9.6
	2 to 3 liters	241	17.1
	3 to 4 liters	285	20.2
	4 to 5 liters	220	15.6
	5 to 6 liters	173	12.2
	6 to 10 liters	189	13.4
	10 liters or more	141	10.0
I check the weather forecast before going out.	No	357	25.3
	Yes	1056	74.7
During the Arbaeen walking ceremony, when I feel thirsty, I drink soft drinks, tea or coffee	No	647	45.8
	Yes	673	47.6
	Not applicable	93	6.6
I use sunscreen during Arbaeen walking and mourning ceremonies	No	328	23.2
	Yes	959	67.9
	Not applicable	126	8.9
On sunny days, do you use sunscreen in other activities outside the inn/hotel in addition to walking and Arbaeen mourning ceremony?	No	371	26.3
	Yes	912	64.5
	Not applicable	130	9.2
When the sun is strong, I rest, and during the cool hours of the day and night, I go for a walk or mourn.	No	151	10.7
	Yes	1112	78.7
	Not applicable	150	10.6

Appendix 1. Distribution of answers to knowledge, attitude and practice questions regarding Heat-Related Illness During Arbaeen Hosseini Ceremony, Karbala, Iraq (n=1413)

Statement/Question	Answers	Number	Percent
Knowledge questions			
Does high temperature cause certain diseases?	No	163	11.5
	Yes	986	69.8
	I do not know	264	18.7
Before traveling to Iraq (Karbala), did you get any information about the weather condition of this country?	No	380	26.9
	Yes	1033	73.1
Have you received information on "heat-related illnesses"?	No	333	23.6
	Yes, before the trip	490	34.7
	Yes, during the trip	267	18.9
	Yes, before and during the trip	323	22.9
Does excessive sweating cause loss of body fluid components such as minerals?	No	92	6.5
	Yes	1105	78.2
	I do not know	216	15.3
Which of the following can be symptoms of heatstroke?	Bloody urine	58	4.1
	Feeling confused	818	57.9
	Muscle cramps	643	45.5
	Stomach ache	404	28.6
	Dizziness	726	51.4
	Visual Disturbances/ blurred vision	198	14.0
	Feeling tired or weak	388	27.5
	Coughing up blood	22	1.6
Is it better to wear dark clothes in hot weather?	No	963	68.2
	Yes	368	26.0
	I do not know	82	5.8
Is thirst the only sign of the need to drink water?	No	551	39.0
	Yes	714	50.5
	I do not know	148	10.5
How much water should we drink daily during Arbaeen walking ceremony?	Less than 1.5 liters	31	2.2
	1.5 to 2 liters	124	8.8
	2 to 3 liters	244	17.3
	3 to 4 liters	277	19.6
	4 to 5 liters	245	17.3
	5 to 6 liters	157	11.1
	6 to 10 liters	193	13.7
	10 liters or more	142	10.0
Did you know that there is free water in holy places?	Yes	125	8.8
	No	1288	91.2
Does using sunscreen reduce the risk of heat-related illnesses?	No	249	17.6
	Yes	914	64.7
	I do not know	250	17.7
Does walking and mourning in hot weather require drinking more water?	No	41	2.9
	Yes	1298	91.9
	I do not know	74	5.2
Are pilgrims with underlying medical conditions (such as diabetes, high blood pressure) more susceptible to heat-related illnesses?	No	66	4.7
	Yes	1191	84.3
	I do not know	156	11.0
Are older pilgrims more susceptible to heat illness?	No	43	3.0
	Yes	1255	88.8
	I do not know	115	8.1
Can high temperature cause death?	No	79	5.6
	Yes	1116	79.0
	I do not know	218	15.4
Does exposure to sunlight in hot weather lead to fever?	No	148	10.5
	Yes	1010	71.5
	I do not know	255	18.0
Does good ventilation play a role in cooling the air?	No	48	3.4
	Yes	1227	86.8
	I do not know	138	9.8
Does overcrowding play a role in increasing air temperature?	No	48	3.4
	Yes	1270	89.9
	I do not know	95	6.7