

Pilgrims' Awareness regarding Health Hazards during Hajj

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Abstract

Background: Mass gatherings at religious events can pose major public health challenges, particularly the transmission of infectious diseases. Every year the Kingdom of Saudi Arabia (KSA) hosts the Hajj pilgrimage, the largest gathering held on an annual basis where over 2 million people come to KSA from over 70 countries. Living together in crowded conditions exposes the pilgrims for different health hazards. **Aim of the study:** assess the pilgrim's awareness regarding health hazards during Hajj. A descriptive cross-sectional design was utilized to conduct the study. **Setting:** The study was conducted at Benha The M.C.H. center at Benha city during Month of Zou Quada1436 (the 11 th month of Islamic year). **Subjects:** A Convenience Sampling of 254 pilgrims included in the study. **Tools:** first tool: A structured questionnaire: It was developed by the researchers; it was composed considering Pilgrim's socio-demographic data , knowledge regarding health hazards, second tool: self-care practice assessment tool **Results** of the study showed that about two thirds had incorrect knowledge regarding health hazards, which affecting pilgrims and, about more than half of studied sample had unsatisfactory practice. Also the study showed that highly significant correlation between socio-demographic characteristics and both knowledge and practice .**Conclusion;** the majority of the studied pilgrims had poor knowledge and unsatisfactory practice. **Recommendations:** Educational strategy to improve knowledge regarding health-hazards and to develop health practices among pilgrims is recommended.

Key words: Pilgrims, Health Hazards, Awareness, Hajj.

Introduction

Hajj is one of the world's largest annual mass gatherings. The Hajj is held from Zou al-Hijja's 8th to 13th, the last month of the Islamic year. For Muslims, the Hajj is a powerfully sacred and social event. Two to three million people meet in one place from 70 countries. Pilgrims need to take care of their health, especially during the crowded Hajj season, which is rife with disease transmission. (*Arabi&Memish, 2006*)

Hajj is a dynamic system for fully appreciating its physical dimensions implying movement and travel. From Kaaba to Mina: 8 km, from Mina to Arafat: 13 km, from Arafat to Muzdalifa: 13 km, from Muzdalifa to Mina: 2 km, from Mina to Jamarat Akabah: 3.8 km. Makkah to Madina 450 km (*Al Masud, et al. 2015*)

Upon arrival, the pilgrims must walk around the Ka'ba seven times. And then perform the Saa'y seven times, a total distance of 3.5 km between the Safa and Marwah hills. During Hajj crowd densities can increase to seven people per m². Overcrowding is one of the biggest problems

as the area is limited and annual numbers increase (Khogali M., 2013)

The area of pilgrimage rites is a sandy valley embraced by rugged sun baked mountains. The area of rites of pilgrimage is a sandy valley surrounded by rugged mountains baked with sun. In Makkah, particularly during the hot months from May to September, the temperature ranges from 38°C to 50°C with a relative humidity of 25% to 50%. This type of hot environment with high radiant heat favors the development of heat disorders such as heat exhaustion, heat stroke, unintentional physical injuries, and respiratory illnesses, dehydration called as non-communicable diseases or problems (Noweir, et al 2008)

Pilgrims risk many health hazards, feel tired and exhausted as a result of travel. This can overburden the functions of those who are sufficient in heart, chest and kidney (Ahmed, et a, 2006)

The crowded conditions during Hajj increase the probability of tuberculosis transmission. Pilgrims should be advised to see their doctors if they develop signs of active tuberculosis: cough with sputum and blood at times, chest pains, weakness, weight loss, fever, and night sweats. A pre-travel visit should include discussions about prevention, oral rehydration strategies, antimotility agents, and emergency antibiotic use for treatment of traveler's diarrhea. Clothing should be light, not restrictive, and changed often to maintain hygiene. Travellers should be advised to keep skin dry, use talcum powder, and be aware of any pain or soreness caused by garments. Any sores or blisters that develop should be disinfected and kept covered. Special attention should be paid to protect the feet, which are bare when inside the Grand Mosque (Mimish, 2012).

At the end of Hajj, Muslim men must shave their heads. The use of unclean blades can transmit blood-borne pathogens, such as hepatitis B, hepatitis C, and HIV. Licensed

barbers are tested for these blood-borne pathogens and are required to use disposable, single-use blades. Unfortunately, unlicensed barbers continue to operate by the roadside, where they use non sterile blades on multiple men. Male travellers should be advised to be shaved only at officially designated centers, which are clearly marked.

Although the Saudi Arabia health authority recommends vaccination and other measures to control infections, and despite the fact that the government of the Kingdom of Saudi Arabia provides free health services for pilgrims, many pilgrims are not seeking medical advice. In addition, many of them do not spend the necessary time in hospitals to avoid missing any of Hajj's rituals (Islamweb, Haj and umrah , 2011).

The Saudi Arabia Ministry of Health recommended that national health authorities provide health education to pilgrims about symptoms of infectious diseases, transmission methods, complications, and means of prevention, as well as changes in temperature that may have adverse health effects. The performers of Hajj and Umrah need to be reminded to drink enough fluid; and to have a healthy diet with enough fresh vegetables and fruits. Also, the consumption of salt containing food and drink helps to replenish electrolytes should be recommended in case of heat exhaustion and after excessive sweating, it should also be recommended that pilgrims be educated about personal hygiene, food poisoning during Hajj and ways of protecting against it, diseases that may affect their health. Countries and individuals should raise awareness of health hazards among pilgrims and develop self-care measures to prevent and manage health hazards. During this Holy Pilgrimage Trip, the countries and pilgrims also encouraged their consideration of health preventive measures. However, several studies have identified variable take-up among pilgrims of these measures, and the reasons for this variability remain unclear (The Saudi Arabian Ministry of health, 2015).

Aim of the study:

The aim of the present is assess the pilgrims awareness about health hazards during hajj.

This aim was assessed through:

-Assess of pilgrim knowledge regarding health hazards during Hajj.

-Assess of pilgrim self-care practice regarding health hazards during Hajj

Questions of the study:

1-What is the pilgrim's level of knowledge of health hazards during Hajj?

2-What is the level of pilgrim self-care practices

reported during Hajj regarding health hazards?.

3- Is there a relationship between pilgrims ' socio-demographic data and their knowledge of hajj health hazards?.

4- Is there a relationship between pilgrims ' socio-demographic data and their self-care practice?

Significance of the study:

For Muslims, the Hajj is a powerfully sacred and social event. But it is also unique from an epidemiological and public health point of view: Egypt's health ministry every year announced about the death of many Egyptian pilgrims in Saudi Arabia during the annual hajj season, the death report revealed that they died of acute cardiovascular and respiratory collapse, Deaths from heat exhaustion, fatigue, and natural causes are not uncommon among pilgrims on the hajj in Saudi Arabia. Last hajj, 110 Egyptians died of natural causes during the pilgrimage,

according to figures released by the health ministry at the time (*Nurul, et al 2014*).

Subjects and methods:

Research Design: - A descriptive cross-sectional design was utilized in this study.

Setting: This study conducted at Benha Medical Centre

Sample: The study included a convenience sample of 254 pilgrims attending the Benha Medical Center for hajj vaccination during the month of Zou Quada1436 (Islamic year's 11th month). Who fulfill these criteria:

- 35 years old and older
- Will go to hajj this year

Tools of Data Collection:

In this study, two tools have been used. **First tool:** A structured questionnaire of interviews: the researchers developed it. It consisted of two parts:

Part I: considering the personal characteristics of the pilgrim including (age, gender, educational qualification, etc.), and the studied pilgrims ' medical history. Part II: Including the studied pilgrim's knowledge of health hazards during Hajj, it contains 10 different questions; each question is scored as (0) incorrect; and (1) correct answer.

The total score of knowledge was calculated as: -Incorrect <60 of the total score of knowledge. -Correct knowledge = 60% of the total score of knowledge.

Second tool: self-care practice evaluation tool used to evaluate the self-care practice reported on the prevention and management of various health hazards. Each hazard management consisted of different

self-care practices reported, scored as unsatisfactory practice (< 60 percent of total management measures given and satisfactory practice (>60 percent of total management measures given). Total self-care practice score was calculated as follows: <60 percent of total practice reported unsatisfactory self-care. -Satisfactory self-care = 60% of total practice reported

Validity of content:

Tools have been submitted to a panel of three public health nursing experts to test the validity of content. Modification was performed on the basis of the panel judgment on sentencing clarity and content appropriateness.

Pilot study:

A pilot study (about 10% of the sample were randomly selected) was conducted and the contents, clarity, consistency and applicability of the tools evaluated using the interview questionnaire. Changes have therefore been made to the study tools to be more applicable and the necessary changes have been accomplished through correction, omission or addition of items;. It was found that the sentences of the tools were clear and relevant after conducting the pilot study, but few words were modified according to the results of the pilot study. The pilgrim subject included in the pilot study have been excluded from the main sample of the study.

Field work:

The data collection took one month (11th month of the Islamic year, the month of Zou Quada1436).). The questionnaire for the pilgrims in the immunization unit was filled by the researcher. It took about 30-45 minutes for each interview. In addition to

external factors such as noise and interruptions, the average number interviewed was 10-15 pilgrims per day depending on the interviewer's understanding and responses.

The researcher introduced herself to the pilgrims and in a simple Arabic language asked the questionnaire, taking into account the legal aspects of ethics in research.

Administrative design: The M.C.H. center director interview. They were explained the title and objectives of the study to obtain their permission and help in conducting the study and to facilitate it.

Ethical consideration:

Subjects were assured that all data will be confidentially tested and that information will only be used for the purpose of research and for their advantages and that each study subject has been allowed enough time throughout the study. They were also informed at any time of their right to withdraw without any reason.

Statistical design:

Statistical analysis was carried out using the statistical software package of IBM SPSS 22. Data cleaning was done to ensure that by running frequencies and descriptive statistics there are no missing or abnormal data. Data was submitted using descriptive statistics in the form of frequencies and percentages for categorical variables, means and standard deviations for paired test continuous variables, and chi-square. Pearson correlation analysis was used to evaluate interrelations between qualitative variables. The significant level of all statistical analysis was at < 0.001 & <0.05 (P value).

Results

Table (1): Distribution of personnel characteristics of the studied sample (n=253).

Personnel characteristics	No	%
Age in year		
35-<45	123	48.6
45-<55	84	33.2
≥55	46	18.2
Mean ±SD	48.73±9.53	
Gender		
Male	137	54.2
Female	116	45.8
Educational level		
Illiterate	32	12.6
Primary education	105	41.5
Secondary education	60	23.7
University education	56	22.1
Residence		
Rural	124	49.0
Urban	129	51.0

Table 1 showed that the mean age of studied pilgrims was 48.73±9.53 about 54.2% of them were male and 41.5% of them were primary education and 51.0 % of them reside in urban.

Figure (I): percentage distribution of types of Pilgrim among the studied subjects.

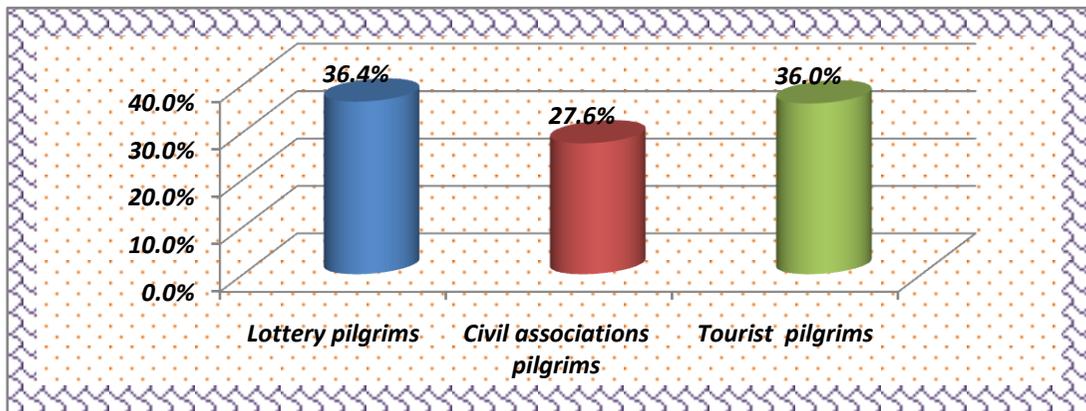


Figure II illustrated that 55.3% have a previous knowledge about the problems that affecting pilgrims

Table II: Distribution of medical history of the studied sample (n=253).

Variable	No	%
Types of chronic illness		
Diabetes	71	28.1
Hypertension	16	6.3
Renal disorder	15	5.9
Liver disorder	10	4.0
Doctor counseling		
Yes	56	22.1
No	197	77.9
Immunization		
Yes	125	49.4
No	128	50.6
Healthy package of pilgrims		
Yes	205	81.0
No	48	19.0

Table II: showed that about 28.1% of studied sample have diabetes, about 77.9% of the pilgrims didn't have doctor counselling before hajj. According to immunization 50.6% of them didn't have it and 81% have the Healthy package of pilgrims.

According to research question 1: What is the pilgrim's level of knowledge of health hazards during Hajj (table III, Figure II,III)

Figure II: percentage distribution of previous knowledge regarding health hazards affecting Pilgrims among the studied subjects.

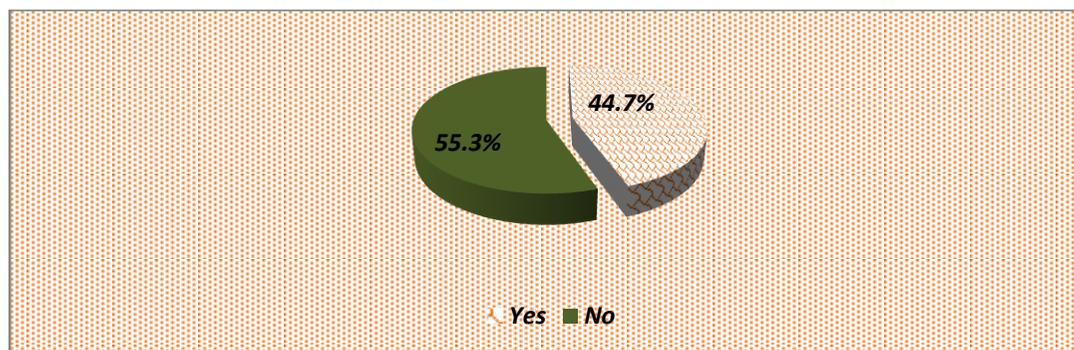


Table III: Distribution of knowledge regarding health hazards that affect Pilgrims among the studied sample (n=253).

Knowledge	Incorrect		Correct	
	No	%	No	%
Respiratory system disorders affecting disorders	139	54.9	114	45.1
digestive system disorders	126	49.8	127	50.2
Signs of Sun stroke	135	53.4	118	46.6
Signs of skin extrusion	124	49.0	129	51.0
Signs of sun skinburns	149	58.9	104	41.1
Types of infected diseases	151	59.7	102	40.3
Mode of transmission of hepatitis A	141	55.7	112	44.3
Mode of transmission of hepatitis B	156	61.7	97	38.3
Mode of transmission of hepatitis C	77	30.4	176	69.6
Mode of transmission of corona	158	62.5	95	37.5

Table III: showed that according the pilgrims knowledge regarding health hazards that affect Pilgrims among the studied sample 63.5% , 61.7% and 59.7% of studied sample have incorrect knowledge with high score of mode of transmission of corona virus, mode of transmission of hepatitis B, types of infectious diseases, signs of sunburns respectively.

Figure III: percentage distribution of total knowledge score regarding health hazards affecting Pilgrims among the studied subjects

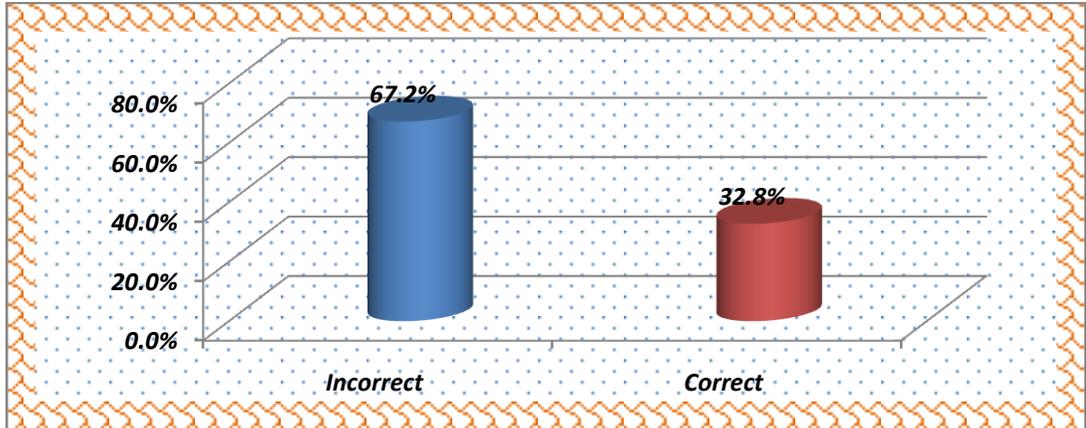


Figure III: showed that about 67.2% had incorrect knowledge regarding health hazards affecting pilgrims

According to research question 2: What is the level of pilgrim self-care practices reported during Hajj regarding health hazards?.

(table IV, Figure IV)

Table (IV): Distribution of reported practice regarding health hazards that affect Pilgrims among the studied sample (n=253).

Reported practice	Satisfactory		UnSatisfactory	
	No	%	No	%
Reported practice for preventing Respiratory system disorders	129	51.0	124	49.0
Reported practice for preventing digestive system disorders	124	49.0	129	51.0
Reported practice for treatment of gastroenteritis.	127	50.2	126	49.8
Reported practice for prevention of sun stroke	88	34.8	165	65.2
Reported practice for treatment of sun stroke	107	42.3	146	57.7
Reported practice for prevention of sun skin extrusion	103	40.7	150	59.3
Reported practice for treatment of sun skin burns	103	40.7	150	59.3
Preventive measure for prevention of hepatitis A,B,and C	72	28.5	181	71.5

Table IV: showed that according the pilgrims practice regarding health **hazards** that affect Pilgrims among the studied sample about 51.4% of studied sample had unsatisfactory practice with high score of Reported practice for preventing hepatitis A,B,C, followed by practice toward prevention and treatment of sun strokes and sun skin burns respectively.

Figure IV: percentage distribution of total reported practice score regarding health hazards management

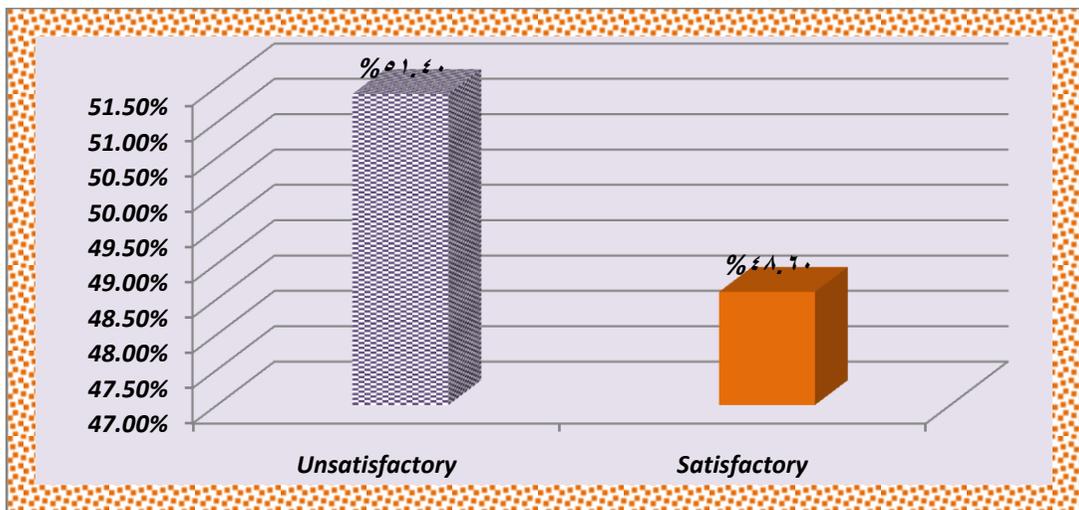


Figure IV :showed that about 51.4% of studied sample had unsatisfactory practice

According to research question 3: Is there a relationship between pilgrims ' socio-demographic data and their knowledge of hajj health hazards?. (**table V**)

Table V: Distribution of relation between Personnel characteristics of the studied sample and their total level of knowledge regarding health hazards among Pilgrims.

Personnel characteristics	Inadequate (n=170)		Adequate (n=83)		X ²	P value
	No	%	No	%		
Age in year					95.17	<0.001**
35-<45	115	67.6%	8	9.6%		
45-<55	47	27.6%	37	44.6%		
≥55	8	4.7%	38	45.8%		
Gender					65.23	<0.001**
Male	108	63.5%	8	9.6%		
Female	62	36.5%	75	90.4%		
Educational level					121.00	<0.001**
Illiterate	32	18.8%	0	0.0%		
Primary education	97	57.1%	8	9.6%		
Secondary education	33	19.4%	27	32.5%		
University education	8	4.7%	48	57.8%		
Residence					76.62	<0.001**
Rural	116	68.2%	8	9.6%		
Urban	54	31.8%	75	90.4%		

Table V: showed that there were a highly significant relation between Personnel characteristics of the studied sample and their total level of knowledge regarding health problems among Pilgrims.

According to research question 4: Is there a relationship between pilgrims ' socio-demographic data and their self reported practice?. (tableVI)

Table VI: Distribution of relation between Personnel characteristics of the studied sample and their total level of self reported practice toward prevention of health hazards among Pilgrims.

Personnel characteristics	Unsatisfactory (n=123)		Satisfactory (n=130)		X ²	P value
	No	%	No	%		
Age in year					79.77	<0.001**
35-<45	95	77.2%	28	21.5%		
45-<55	15	12.2%	69	53.1%		
≥55	13	10.6%	33	25.4%		
Gender					63.65	<0.001**
Male	88	71.5%	28	21.5%		
Female	35	28.5%	102	78.5%		
Educational level					80.01	<0.001**
Illiterate	32	26.0%	0	0.0%		
Primary education	67	54.5%	38	29.2%		
Secondary education	11	8.9%	49	37.7%		
University education	13	10.6%	43	33.1%		
Residence					76.30	<0.001**
Rural	95	77.2%	29	22.3%		
Urban	28	22.8%	101	77.7%		

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Table VI: showed that there were a highly significant relation between Personnel characteristics of the studied sample and their total level of reported practice regarding health hazards among Pilgrims.

Table VII: correlation between total level of knowledge and reported practice of the studied sample toward health hazards among Pilgrims.

Variables	Total reported practice score	
	R	P value
Total knowledge score	.478**	<0.001**

Table VII: showed that there were a highly significant relation between total level of knowledge and reported practice of the studied sample toward health hazards among Pilgrims.

Discussion:

The present work has been carried out to assess the awareness of pilgrims in Banha city about the health problems that Hajj may face. The study was conducted for 254 pilgrims in Banha City to collect data on the knowledge and practice that may be experienced during Hajj. This study showed that socio-demographic data from the studied sample showed that the mean age of studied pilgrims was 48.73 ± 9.53 . Universally, elderly pilgrims were vulnerable to infection due to a decreased rate of immune response actively caused by other factors such as hard work, lack of sleep and dietary disturbances, and mental stress. More than half of participants were male and less than half had primary education.

As many uneducated and old age pilgrims participate in the hajj trip, and most health issues during the trip are for this group, health education planning should be a priority for this group. It is important to raise the educational level of the elderly and the uneducated (Sindy, et al 2015)

According to types of hajj the study illustrated that more than one third of pilgrims were lottery pilgrims and also more than one third were tourist pilgrim but more than one quarter is Civil Association Pilgrims

In the present study, it was found that measures were taken before the Hajj; more

than three quarters of pilgrims did not have physician counselling prior to the Hajj. And more than four fifths have a healthy pilgrim package. Knowledge about vaccination of pilgrims before going the Hajj vice versus. Vaccination measures slightly less than half were taken before the Hajj..

World Health Organization (WHO) issued a visa guideline for the Hajj season in 2015 in accordance with the Ministry of Health of Saudi Arabia. The guideline includes several requirements and recommendations for pilgrims, including yellow fever, meningococcal meningitis, poliomyelitis, cholera, health education, food response and international outbreaks of communicable diseases. Saudi Ministry of Health issued awareness guidelines pilgrims with chronic diseases and encourage them bring and keep a sufficient amount of medications (World Health Organization, 2015)

The Ministry of Health also requested chronic disease pilgrims to visit the nearest clinic or hospital if necessary in the same line to present study, it was found in another study that the most frequently practiced pre - travel health - related behaviour was vaccinated more than half compared to much lower frequencies of seeking health information more than one fifth or clinical health examinations (Ministry of Health, KSA, 2015)

Another study estimated that vaccination rates for influenza among Australian pilgrims in 2 consecutive years in 2011, of the survey's 431 Australians, more than three fifths reported receiving the influenza vaccine. More than four fifths of 535 Australians reported receiving the vaccine in 2012, (*Barasheed, et al 2014*) In another study which calculated the uptake of influenza vaccines among Malaysian pilgrims in another Malaysian study. Before travelling, they found that less than three quarters of pilgrims received influenza vaccine (*Deris, et al 2010*)

Also, in one study conducted on 356 Australian Hajj pilgrims, Exploring barriers to and facilitators of preventive measures against infectious diseases among Australian Hajj pilgrims: Cross-sectional studies before and after Hajj showed that four fifths had pre-travel vaccination (*Alqahtani, et al, 2015*). In the study titled Detection of respiratory viruses among pilgrims in Saudi Arabia during the time of a declared influenza A (H1N1) pandemic which also investigated compliance with the H1N1 vaccine between 519 arrivals and 2699 pilgrims departing, less than one third of pilgrims reported vaccinating against pandemic influenza A before leaving for the KSA. (*Memish, et al 2012*) At the time of their admission to the KSA, another study conducted to evaluate the immunological profile of the pilgrim. Serum samples were collected from 796 out of 861 pilgrims. Over the past 3 years, nearly all of pilgrims have been vaccinated by the quadrivalent meningococcal (*Memish, 2014*)

According to previous knowledge and hearing about health problems in hajj our study illustrated that more than half of subjects have a previous knowledge about health problem affecting pilgrims. According to the presentation of the study conducted in Egypt, when the pre-travel health seeking practices of Umrah pilgrims leaving Assiut International Airport were studied, it was found that Egypt; more than half and less

than half, of Umrah pilgrims believed in the importance of pre-travel vaccination, health information seeking, and health examination, respectively (*Aziz, et al 2016*)

According to research question no 1: pilgrim's knowledge about health hazards during hajj this study found that about slightly more than two thirds of pilgrims had incorrect knowledge of health issues. With high score of corona virus transmission mode, hepatitis B transmission mode, infectious disease types, sunburn signs, respectively Respiratory and gastrointestinal tract bacterial and viral infections spread rapidly, affecting nearly all pilgrims during Hajj.

Respiratory and gastrointestinal tract bacterial and viral infections spread rapidly and affect almost all pilgrims during Hajj (*Hui & Zumla, 2015*). Respiratory tract infections – whose spread through coughing and sneezing is exacerbated by the crowded Hajj conditions – include community-acquired pneumonia, influenza, and tuberculosis (TB). While bacterial and viral pneumonia are well-documented causes of hospital admission in pilgrims, quantifying the increase in risk of TB transmission is more challenging owing to the longer time period between infection and the development of symptoms (*Haworth, et al 2013*). The elderly and those with chronic diseases such as diabetes are particularly vulnerable to morbidity from respiratory illnesses. In cross-sectional study, of 157 Iranian Umrah pilgrims were randomly selected in Mecca, Saudi Arabia in June 2011 Level of knowledge were very low in more than one tenth, low in about quarter average in more than one third good in one quarter and very good in less than tenth of respondents (*Tabatabaei, 2015*)

The common health problems during Hajj are mainly divided into two categories: non-communicable diseases less than two thirds and communicable diseases more than

one third as founded by(*Al Masud et al 2015*)

In another study it was found that when asked about the main health problems encountered by the pilgrims during Hajj was answered just less than one fifth of pilgrims about the heat stroke or heat attack,(*Sindy, et al 2015*). In despite the common public people were known heat exhaustion and heatstroke are a leading cause of morbidity and mortality during the Hajj, particularly in summer, temperatures in Mecca can rise higher than 45°C. In another hand another one mentioned that, one-fifth of the pilgrims had multiple diseases where, respiratory infections are the most common in more than half followed by gastrointestinal more than tenth diseases and diabetes, hypertension each constituted less than tenth of the total illnesses,(*Alzahrani, et al 2012*). Also In another study, that evaluate the knowledge of pilgrims about ARI (Acute respiratory infection) using 18 questions about symptoms and sources of contamination overall, the score of true response was slightly more than on quarter (*Gautret, et al 2015*)

Another study was said that the respiratory diseases include pneumonia, influenza, and asthma in less than three quarters were considered as the predominant clinical health patterns which encountered by Hajj pilgrims. It continues to be the increasing burden of diseases among Hajj pilgrims, but there is still a lack of studies being conducted to overcome these problems' (*Bader, et al 2015*)

Other study identified the common causes of hospital admission it was founded that respiratory diseases was the most common cause of hospital admission in more than half during Hajj, with pneumonia being the leading reason for hospitalization' *Samir, et al 2014*).A prospective study was conducted in two different hospitals during Hajj 2011 and revealed that the overall mortality rate in the ward among pilgrims

with pneumonia was 2.4% and in the ICU was 21.45% during Hajj period 2011 was revealed that out of 30 selected studies, 22 of articles had concluded that respiratory diseases includes pneumonia, influenza and asthma less than three quarters were the main health problems encountered by the pilgrims during Hajj'(*Memish et al 2012*)& (*Mandourah, 2012*)

According to research question 2: the pilgrims practice during hajj, the current study showed that the half of the studied subject had unsatisfactory practice with high score of Reported practice for preventing hepatitis A,B,C, followed by practice toward prevention and treatment of sun strokes and sun skin burns respectively.

In cross-sectional study of 157 Iranian Umrah pilgrims were randomly selected in Mecca, Saudi Arabia in June 2011, Practice scores were above average. Behavioural interventions such as hand hygiene, wearing a face mask, cough etiquette, social distancing, and contact avoidance can be effective at preventing and managing respiratory illness among Hajj pilgrims. Pre-Hajj travel advice about common respiratory conditions should include a general assessment for respiratory fitness, necessary vaccinations, and prescription of adequate supplies of portable respiratory medications (prefer inhalers over nebulizers) (*Tabatabaei, 2015*)

According the research question no 3: the relation between personal characteristics and the knowledge of pilgrims the present study showed that there were a highly significant relation between Personnel characteristics of the studied sample and their total level of knowledge regarding health hazards among Pilgrims. In one study in 2011, assessed knowledge of Hajj pilgrims about ARI (Acute respiratory infection) using 18 questions about symptoms and sources of contamination. Overall, the score of true responses were higher in one quarter of elderly. Scores were also higher for female

pilgrims. No other demographic or health factor had significant influence (*Gautret , et al 2012*). In another study when studied the health knowledge, attitude and practice among Iranian pilgrims was found that there was a significant relation between age and knowledge of studied sample (*Tabatabaei et al 2015*). Few studies have been down in the field of association between health knowledge during the Hajj and personal characteristics. More studies are recommended.

According the research question no 4: the relation between Personnel characteristics of the studied sample and their total level of reported practice toward prevention of health hazards among Pilgrims. This study indicated that there were a highly significant relation between Personnel characteristics of the studied sample and their total level of reported practice regarding health problems among Pilgrims, Our finding in consisted with another study in which founded gender and education level were significantly associated with increased knowledge and practice score (*Abdulrahman, et al 2015*). The present study indicated that the practice is satisfactory in urban living participant in more than three quarters this finding may be logic because of the availability of health care services both governmental and private are more in urban than rural one also the availability of health educational program in urban are more than rural because the availability of university and medical faculties in urban so the needed for rural health education home visits are recommended especially in hajj season.. our study indicated that the practice level is satisfactory in university and secondary school educated subject rather than primary education and illiterate one it reflect the role of education as an interactive process of teaching and learning which enables learners to acquire knowledge and to develop attitudes and skills which support the adoption of healthy behaviours. Education impacts on health in two ways; firstly

through teaching that enables people to learn specifically about health (often known as skills-based health education) and secondly through the educational process as a whole which provides skills such as critical thinking and making choices that enable people to adopt for healthy lifestyles. (*Omer, et al 2015*)

Regarding the correlation between total level of knowledge and reported practice of the studied sample toward health problems among Pilgrims, Our study indicates that there were significant correlation between total level of knowledge and reported practice of the studied sample toward health problems among Pilgrims. In another study it was found that Although the old and low educated pilgrims had little knowledge of health tips, they had a good health attitude and practice. Health education builds people knowledge, skills, and positive attitudes about health. Health education teaches about physical, mental, emotional and social health. It motivates people to improve and maintain their health, prevent disease, and reduce risky behaviors. Health knowledge and instruction help people learn skills they will use to make healthy choices throughout their lifetime. It result in positive changes in behavior that lower health risks (*Kamran, 2010*).

Conclusion

Based on the result of the current study, it was concluded that the majority of pilgrims did not have health education courses regarding common health hazards during Hajj. In addition the majority of them had incorrect knowledge and unsatisfactory practice regarding health hazards during Hajj. It reflects the needs for such these educational courses.

Recommendation:

Based on the findings of the present study, the following recommendations were suggested:

- Educational strategy to improve knowledge regarding health-related problems and to develop health practices among pilgrims is needed
- Training of general practitioners in the public health sector about the travel health information would promote the travel health services.
- Raising awareness among Hajj/Umrah pilgrims about the importance of seeking professional pre-travel health advice and communicating the risk of exposure to travel-related diseases to pilgrims could be important strategies to improve the uptake of preventive measures..
- the need for adequate planning for pilgrims' health monitoring and the prevention and control of disease outbreaks show the importance of academic and scientific research

Reference:

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