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Research Article

**KNOWLEDGE AND ATTITUDE REGARDING PREVENTIVE
MEASURES AMONG PILGRIMS DURING HAJJ, MADINAH, KINGDOM
OF SAUDI ARABIA, 2016****Moneer Mohammed ¹, Nisreen Albouq ¹, Nada Bakhshwain ², Yousra Nasser ¹,
Abdulmalik Jarrah ³**¹College of Medicine, Taibah University, Al-Madinah Al-Munawwarah, Kingdom of Saudi Arabia.,²College of Pharmacy, Taibah University, Al-Madinah Al-Munawwarah, Kingdom of Saudi Arabia.,³College of Medical Rehabilitation Sciences, Taibah University, Al-Madinah Al-Munawwarah, Kingdom of Saudi Arabia.**Abstract:**

Background: The transmission of infectious disease during huge gathering such annual Hajj pilgrimage its very high and there is a huge effort done by the government of Saudi Arabia to reduce the risk of infectious diseases during Hajj.

Objective: The aim of this study is to assess the Knowledge and the attitude of the most important preventive measures taken among pilgrims and to measure the awareness of being vaccinated by different vaccine to reduce the risk of the transmission of variant disease .

Methods: Analytical cross sectional study was conducted among pilgrims during 2016 in Almadinah , Saudi Arabia . Data were collected using self-administrated questionnaire tool Including a total of 22 questions.

Results: Data was collected from 457 Hajj pilgrims, 216 of the respondents were female while 241 were male. The results shows that the majority of the pilgrims follow the preventive measurements including; washing hands after meals and touching dirty surfaces 93.4 % ,washing hands after using public facilities 91.5%, Wearing face mask 60.4% and washing fruits and vegetable before eating them 94.5% . Most of the participants were vaccinated 84.5% while 15.5% they weren't vaccinated. The majority of the pilgrims 61.5% received meningococcal vaccination and 46.8% received influenza vaccine .Regarding the best methods to educate society , the majority respond that radio and TV29.3% were the best method followed by school and universities18.8%.

Conclusion: This study shows that pilgrims had adequate knowledge and attitude regarding the standard protective measures that enabling them to protect themselves during hajj against variant infectious disease. There are significant opportunities to improve awareness among Hajj pilgrims about the importance of using preventive health measures through educating programme in radio , TV , school and universities .

Keywords: Preventive Measures, Infectious disease, Pilgrims, Hajj.

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INTRODUCTION:

Hajj is the fifth pillar of Islam that is practiced by every financially and physically capable Muslim at least once in a lifetime. According to the recent statistics, about 3 million person from different countries around the globe assemble in Mecca, Saudi Arabia, in order to perform Hajj pilgrimage. Severe crowding, shared personal tools, reduced personal hygiene, and environmental pollution at Hajj may collectively lead to increased transmission of respiratory viruses, notably influenza.[1-3]

Pilgrimage is associated with an increased risk of both acquisition and transmission of respiratory tract infections (RTIs) [4,5].

Respiratory and gastrointestinal tract bacterial and viral infections spread rapidly and affect huge numbers of pilgrims during Hajj [6 – 13].

A large proportion of pilgrims suffer from at least one respiratory symptom (cough, sore throat and rhinorrhea e.g.) whose spread through coughing and sneezing [14,15].

Several months before each Hajj, the Saudi Arabian Ministry of Health (MoH) publishes health recommendations including vaccination requirements for pilgrims to reduce the incidence of transmitted disease [16]. Studies have demonstrated that vaccine uptake and compliance with hygiene and protective measures are highly variable among pilgrims, [17,18] and the reasons behind this variability remain unclear. This cross sectional study aims to assess the Knowledge and the attitude of the most important preventive measures taken among pilgrims and to measure the awareness of being vaccinated by different vaccine to reduce the risk of the transmission of variant disease.

MATERIAL AND METHODOLOGY:

This Analytical cross sectional study was conducted during November and December 2016 in Almadinah, Saudi Arabia. Subjects of this study were pilgrims who attended the campaign which was held by Taibah Medical Club in association with the Ministry of Hajj and Umrah.

This campaign aimed to generate the health awareness among pilgrims regarding the infectious

disease that usually transmitted during Hajj and the preventive measures that must be taken during Hajj. The self administrated questionnaire was conducted before educating the participants and Informed consent obtained from all of them after describing the aim of the study. The questionnaire was distributed in multiple places including: Prince Mohammed bin Abdul-Aziz Airport, Anwar Al-Madinah Movenpick Hotel and Al-Miqat Mosque in hand to hand manner for all of our sample and the sample were include the pilgrims only, either they are Saudis or not. The questionnaire covering questions about: (1) socio-demographics data including: gender, age, income, marital status, work and the nationality, (2) the knowledge and the attitude on the preventive measures in AL-Hajj (3) types of vaccination was taken for Hajj.

STATISTICAL ANALYSIS:

Data were tabulated by using Microsoft office — Excel sheet, entered and analyzed by using SPSS, version 20.0. Ethical Committee approval was obtained before starting the study.

RESULTS:

Data was collected from 457 Hajj pilgrims using questionnaires which were filled electronically. 216 (47.3%) of the respondents were female while 241 (52.7%) were male. The mean age was 41.9 ± 12.7 years with a range of 14 – 80 years of age. The main nationality was from Africa 224 (49.0%) including Egypt, Morocco, Algeria, Sudan, to South Africa, followed by Arabian countries 100 (21.9%) including Saudi Arabia, Yemen and all Middle East countries [Iraq, Syria, Lebanon, Jordan, Palestine] and Gulf Cooperation Countries (Oman, Emirates, Bahrain, Kuwait etc). Most of respondent were married 373 (81.6%). The majority of the participant had university education including Bachelor 186 (40.7%), Master 59 (12.9%) and Doctorate 15 (3.3%). 184 (40.4%) of the pilgrims were employee, 108 (23.7%) were house wife and 50 (11.0%) were students. (Table 1)

Table 1 : Demographic Data

Demographic Data	Numbers	%
Gender (n=457)		
Male	241	52.7
Female	216	47.3
Nationality		
Arabian	100	21.9
Asian and south Asian	60	13.1
European	63	13.8
North America	10	2.2
African	224	49.0
Education Level		
Primary	87	19.0
Secondary	94	20.6
Bachelor	186	40.7
Master	59	12.9
Doctorate	15	3.3
Other	16	3.4
Occupation		
Student	50	11.0
Employee	184	40.4
Housewife	108	23.7
Business	27	5.9
Other	86	18.9

Regarding the pilgrims' knowledge of common disease that usually transmitted during hajj , the majority of the respondents 396 (86,7%) said that Corona and other Influenza infection attacks the respiratory system ,and 376 of them respond that it transmitted through Air and Direct contact with an infected individual "sneezing ,coughing ,or nasal secretion" . (Table 2)

Table 2 : Knowledge of Corona and other influenza infection

	Numbers	%
Corona and other influenza like disease (n = 457)		
Digestive System	32	7.0
Respiratory System	396	86.7
Urinary System	29	6.3
Corona and other influenza infection transmission (n = 457)		
Air and direct contact (sneezing , coughing ,etc)	376	82.3
Contaminated food	14	3.1
Don't know	67	14.7

Regarding the transmission of other disease like Cholera , Hepatitis and Typhoid fever the majority of the respondents said that its transmitted through both contaminated water and food . (Table 3)

Table 3 : Transmission of Cholera , Hepatitis and Typhoid fever .

Transmission of infectious diseases	Numbers	%
Cholera infection (n = 457)		
Contaminated water	141	30.9
Contaminated food	33	7.2
Both	240	52.5
Don't know	43	9.4
Hepatitis (n = 457)		
Contaminated water		
Contaminated food	57	12.5
Both	84	18.4
Don't know	267	58.4
	49	10.7
Typhoid Fever (n = 457)		
Contaminated water		
Contaminated food	63	13.8
Both	74	16.2
Don't know	265	58.0
	55	12.0

The majority of the participants said that Vaccination 308 (67.4%) is the best method to protect themselves from meningitis ,38 of the respondents (8.3%) believes that antibiotic can protect them from getting infected and 63 (13.8 %) they don't know how to protect themselves against it . (Table 4)

Table 4 : Methods of Meningitis protection

Meningitis Protection	Numbers	%
vaccination	308	67.4
antibiotics	38	8.3
awareness campaign	48	10.5
don't know	63	13.8
Total	457	100.0

Regarding the preventive measures among pilgrims , the results shows that the majority of them follow these measurements including ; washing hands after meals and touching dirty surfaces 427 (93.4 %), washing hands after using public facilities 418 (91.5 %), Wearing face mask 276 (60.4 %) , Washing fruits and vegetables before eating them 432 (94.5%) .

Out of 456 participants , 378 (82.9 %) used the bottled water as a source of drinking water , while 78 (17 .1%) used the refrigerator (public water) . (Table 5)

Table 5 : preventive measures among pilgrims :

Preventive Measures	Numbers	%
washing hands after meals and touching surfaces (n = 457)		
Usually		
Sometimes	427	93.4
Never	28	6.1
	2	0.4
washing hands after using the public facilities (n = 457)		
Usually		
Sometimes	418	91.5
Never	37	8.1
	2	0.4
Wearing face mask (n = 457)		
Usually		
Sometimes	276	60.4
Never	143	31.3
	38	8.3
Washing fruits and vegetables before eating them (n = 457)		
Usually		
Sometimes	432	94.5
Never	25	5.4
	0	0
Source of drinking water (n = 457)		
Bottled water		
Refrigerator (public water)	378	82.9
	78	17.1

Most of the participants were vaccinated 386 (84.5 %) while 71 (15.5 %) they weren't vaccinated . out of 457 pilgrims , 214 (46.8%) answered that they received influenza vaccine . the majority of the pilgrims 281 (61.5%) received meningococcal vaccination . Most of the respondents didn't receive cholera vaccine 285 (84.2%) and polio vaccine 356 (78.1%) . (Table 6)

Table 6 : Type of Vaccination received during hajj

	Numbers	%
Vaccinated (n = 457)		
Yes	386	84.5
No	71	15.5
Influenza vaccine		
Yes	214	46.8
No	210	46.0
I don't know	33	7.2
Meningococcal vaccine		
Yes	281	61.5
No	143	31.3
I don't know	33	7.2
Cholera vaccine		
Yes	39	8.5
No	385	84.2
I don't know	33	7.2
Polio vaccine		
Yes	67	14.7
No	356	78.1
I don't know	33	7.2

The results shows that 134 (29.3 %) of the participants use the medical books as source of the health information that they had , 122 (26.7%) use the social media and 111 (24.3%) depends on TV show in their information (Table 7) .

Table 7 : Source of Health Information among Pilgrims

Source of Health Information	Numbers	%
Medical Books	134	29.3
Articles	53	11.6
TV Show	111	24.3
Social Media	122	26.7
Other	37	8.1
Total	457	100.0

Regarding the best methods to educate society , the majority respond that radio and TV 142 (29.3%) were the best method followed by school and universities 86 (18.8%).

DISCUSSION:

The transmission of infectious disease during huge gathering such annual Hajj pilgrimage is very high .[19]

There is a huge effort done by the government of Saudi Arabia to reduce the risk of infectious diseases transmission at Hajj like corona virus , meningitis , hepatitis , cholera and other disease . The authorities in Saudi Arabia recommended regarding preventive measures like vaccination and hygiene measures [20]. Few studies have been conducted to assess the knowledge and attitudes in relation to preventive measures among Hajj pilgrims , So this cross sectional study aimed to assess the Knowledge and the attitude of the most important preventive measures taken among pilgrims and to measure the awareness of being vaccinated by different vaccine to reduce the risk of the transmission of variant disease. The respondents in this study were pilgrims from different countries including Egypt, Morocco, Algeria, Sudan, Saudi Arabia , Iraq, Jordon, Palestine ,Oman , Emirates, Bahrain, Kuwait etc .

Starting with pilgrims knowledge regarding the infectious disease and the way of the transmission , the results show that the majority of the respondent had a good knowledge .

The majority of the respondents 396 (86 ,7 %) said that Corona and other Influenza infection attacks the respiratory system , and 376 of them respond that it transmitted through Air and Direct contact with an infected individual “sneezing ,coughing ,or nasal secretion . The results of our study concerning the knowledge of corona and other influenza infection were far from the result of study conducted in turkey by MK Sahin in 2015[21] since Only 129 of the participants (34%) knew that Corona is a respiratory disease .

In the present study, the results shows that the majority of the participants follow the preventive measures . In contrast to two studies one conducted in French (90%) and in Australia (64%), the level of information concerning protective measures was generally insufficient [22,23] , and there is a study of Australian pilgrims found that there is a considerable misconceptions about preventive measures among Hajj pilgrims[24] .

washing hands after meals and touching dirty surfaces 427 (93.4 %) was the common protective measure followed by the pilgrims , in accordance to study conducted in Riyadh , Saudi Arabia [25] , the results shows that Using face mask, was the most important practical protective measure among pilgrims .

The results of our study revealed that Most of the participants were vaccinated 386 (84 .5 %) while 71 (15.5%) they weren't vaccinated . out of 457 pilgrims , 214 (46.8%) answered that they received influenza vaccine . the majority of the pilgrims 281 (61.5%) received meningococcal vaccination, similar to Saudi study [25] ,their results shows that all participants were vaccinated for meningococcal meningitis.

In this study , the results shows that (29.3 %)of the participants use the medical books as source of the health information that they had , (26.7%) use the social media and (24.3%) depends on TV show in their information.

CONCLUSION:

This study shows that pilgrims had adequate knowledge and attitude regarding the standard protective measures that enabling them to protect themselves during hajj against variant infectious disease. There are significant opportunities to improve awareness among Hajj pilgrims about the importance of using preventive health measures through educating programme in radio , TV , school and universities .

Conflict of Interest:

None declared.

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