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Research Article

**CHIEF COMPLAINT AMONG PILGRIMS VISITING PRIMARY  
HEALTH CARES DURING HAJJ 2019**<sup>1</sup>Abdullah Saleh Khaled Alanazi, <sup>2</sup>Horia Mohammed Eissa Alduriahem<sup>1</sup>Family Physician at Ministry of health, Primary health care., <sup>2</sup>Pharmacist at Saudi German Hospital.**Article Received:** November 2020**Accepted:** December 2020**Published:** January 2021**Abstract:**

Hajj contain pilgrims from 185 countries including the resident of Saudi Arabia, the total population of the pilgrims approximately 2 million. The pilgrim population is extremely diverse regarding the ethnic origin, socioeconomic status, sex, age, and health status, travel to holy site to accomplish same activities within comparatively short period over limited area of land. Archaeologically hajj has experienced high morbidity and mortality due to pre-existing comorbidities, outbreaks, accidents, and disasters. This study should be considered with its limitations. The sample was biased since the participants were attending PHCCs. Also, the data was collected from PHCCs; thus, it is likely that individuals with severe conditions were not included. A random sample would have been more representative of the population. Also, there was no information about referrals to tertiary hospitals or mortality-related information. However, the study design made it possible to obtain information about the chief complaints among pilgrims attending PHCCs. In conclusion, the most common chief complaint was respiratory-related illness followed by trauma/injury, musculoskeletal/pain- and gastrointestinal system-related illnesses. Our data showed that the peak of the visiting PHCC occurred in day 9.

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## INTRODUCTION:

Hajj is one of the world's biggest assemblies which take place once a year in Mecca, Saudi Arabia (1). Hajj contain pilgrims from 185 countries including the resident of Saudi Arabia, the total population of the pilgrims approximately 2 million (2). The pilgrim population is extremely diverse regarding the ethnic origin, socioeconomic status, sex, age, and health status, travel to holy site to accomplish same activities within comparatively short period over limited area of land (3).

Archaeologically hajj has experienced high morbidity and mortality due to pre-existing comorbidities, outbreaks, accidents, and disasters (4) (5).

Respiratory infections, considered as generality frequent because it is easily Transmitted via the respiratory droplets from one to another, so its highly frequent diseases during Hajj (6) (7). The weather in Mecca is hot, dry and sunny and which can act as important risk factor for heat stroke, heat exhaustion, sleep disorders, nephrolithiasis and metabolic disorders (8) (9) (10).

The risk of exposure to zoonotic diseases is increased during animal slaughter, which is a part of Hajj rituals the (11). Another ritual which poses a health risk is head shaving for men. Head shaving is performed with razors or blades which if used without changing for several hajjis can transmit blood borne infections ( HIV, hepatitis B and hepatitis C) (12). (13) (14).

The provision of health care facilities to 2.5 million people who gather for a short period of time in a relatively smaller area is a huge challenge for the concerned authorities. There are several studies available related to the health issues of pilgrims and Hajj pilgrimage (15) (16) (17).

By investigating the most prevalent chief complain among pilgrims visiting primary health care centers, this will allow and prepare the authority to develop the correct plan to reduce, prevent and manage diseases.

## METHODOLOGY:

This study was designed as a cross-sectional study, and the target populations were pilgrims attending 14 primary healthcare centers (PHCCs) located in Muna and Arafat. The data was collected during the Hajj period (From 8/12/1441H until 13/12/1441H) using a specific electronic questionnaire during the primary healthcare visit.

A study protocol was submitted to the ethics committee of King Fahad Medical College (KFMC) Institutional Review Board, ensuring adherence to ethical principles, such as those specified by the World Medical Association Declaration of Helsinki after which ethical approval was granted. The questionnaire was translated into Arabic by an independent professional translator who did not participate in the preparation of the questionnaire. The questionnaire was back translated by another similar professional to ensure the consistency in the translation.

The total sample was 892, and the sample consisted of a nonprobability convenience sampling.

The questionnaire was designed in three parts: (1) the first part related to demographic characteristics including age, gender and nationality, (2) the second part related to information about the location of the PHCC and the date of visit, and (3) the third part related to previous medical history and the main complaint that prompted the visiting the PHCC. Data were extracted from the PHCC database and exported into a Microsoft Excel sheet. All incomplete or missing data were excluded from the analysis before exportation into Statistical Package for Social Sciences (SPSS) sheet.

Analyses appropriate to each outcome variable was performed using SPSS. Descriptive analysis will be carried out by computing frequencies and percentages for categorical variables, and the mean and standard deviation for continuous variables. The independent t-, chi-square, or Fisher's exact test were used when appropriate to assess the difference between groups.

## RESULTS:

Of the 892 included patients who completed the surveyed during visiting the primary health care centers (PHCCs), the male constitutes the majority (76.7%), (55.6%) aged between 18-44 years old. Participants visited PHCCs located in Arafat were (98.5%) more than Mina PHCCs. Concerning, patients seeking medical care were highest on day 9. Most of the patients (71.7%) stated that the symptoms onset started within 24 hours. The most predominant chronic illness was Diabetes (8.6%) , followed by asthma (8.0%). Regarding the nationality individuals were predominantly from Gulf countries (24.4%), followed by Saudi (23.1%) and north African countries (14.2%)

This study showed that the most frequently occurring diseases were those relating to the respiratory system

(399 individuals), followed by trauma/injury related illness (178 individuals), musculoskeletal / pain related illness (148 individuals) and gastrointestinal system (125 individuals). Diseases related to the cardiovascular system showed the lower frequency (32 individuals)

According to the distribution of disease in proportion to gender showed that the respiratory category was the highest among both males (45.2%) and females (43.3%) ( $P>0.682$ ), trauma and injury were higher in men (23.5%), compared to women (8.2%) ( $P<0.0001$ ). the musculoskeletal / pain was higher in females (26.4%), than males (8.2%) ( $P<0.0001$ ). in contrast, the percentage of female (21.6%) is higher than male (11.7%) ( $P<0.0001$ ) among gastrointestinal group.

This study revealed that the respiratory related illness was the most occurring frequency among all the nationalities ( $p<0.002$ ). Southeast Asian countries showed that musculoskeletal and pain related diagnosis were very high among them (33.3%) ( $P<0.0001$ ). Trauma and injury frequently occur more among nationalities from gulf countries (28.4%) ( $P<0.0001$ ). GIT problems appeared more among western Asian countries (21.6%) ( $P>0.310$ ).

Concerning the disease distribution and the onset, most of the patients who attended the PHC had symptoms onset within 24 hours, followed by patients who had symptoms onset more than 72 hours. Also, there was statistically significant relationship between the symptoms onset and heat related illness ( $p<0.0001$ ), respiratory related illness ( $p<0.0001$ ), musculoskeletal/ pain related illness ( $P<0.0001$ ) and other diagnosis ( $P<0.004$ ). neither GIT related illness, nor Trauma/Injury related, and cardiovascular related illnesses were found to be associated with symptoms onset.

All disease categories showed that the majority of cases attended day 9 followed by day 8, this was statistically significant with only patients who had respiratory related illness ( $P<0.0001$ )

All health-related illnesses were statistically significant with chronic illness except for heat related illness was not significant ( $P>0.179$ )

Regarding the proportional frequencies of the different diseases according to age Individuals aged 18-44 were the most affected group among and the age group 45-59 except for other diagnosis. For other diagnosis the most affected group was age 60-69

( $P>0.0001$ )

### DISCUSSION:

This study illustrates that the most frequent chief complaints among pilgrims in 2019 were respiratory-related illnesses followed by trauma/injury related illness, musculoskeletal/pain-related illness, and gastrointestinal system issues. Previous studies showed respiratory diseases were the leading cause of admission during Hajj (18), (7), (19), (20). Respiratory symptoms are still the main cause for visiting the PHCCs. Therefore, preventive measures are essential to reduce the cases visiting PHCCs. For instance, vaccinations, chemoprophylaxis, frequent hand washing/disinfecting, and the use of a face mask provide some shielding (21). Face masks (22) can help protect users from large respiratory droplets. (23) (24)

Face masks differ in width and penetrability and are not qualified to protect users from airborne infection (23). N95 respirators are precisely designed to protect users from tiny airborne particles, including aerosols (23) (24). According to the World Health Organization (WHO) and the Centers for Disease Control (CDC), N95 respirators are recommended during procedures in which aerosols may be generated and during other high-risk situations (6,9). The (22) (25). Hajj is considered a high risk environment, which includes crowds, cramped accommodations and adverse weather (26) (27). Therefore, wearing N95 respirators must be mandatory for pilgrims.

Trauma/injury related illness was the second most frequent chief complaints among pilgrims visiting the PHCCs. Trauma and injury were higher among males than female. Pilgrims may walk long distances through or close dense traffic, and motor automobile accidents are inevitable. The bluest funk trauma hazard, however, is a stampede. In such dense crowds, little can be done to avert or escape a stampede once it has begun, nonetheless the physical surroundings of the Hajj has been engineered punctually to minimize such accidents. Overcrowding is considered a significant factor for increasing the dangers associated with trauma since pilgrims make the ritual journey over a short period in a small area (Holy Places). In such mass movement of pilgrims from one place to other place, overcrowding is an unavoidable phenomenon (28). Therefore, pilgrims are at risk for different type of injuries. Mass causality incidents, such as from crushing injuries due to stampedes, fires, and accidents increases traumatic injuries and deaths. For instance, on September 11, 2015 a crane being used for structure to enlarge the area around the Grand

Mosque (Masjid al-Haram) in Mecca tumble down, killing 107 people and injuring 394. Also, on September 24, 2015, a major stampede in Mina at the joint leading up to the Jamaraat Bridge occurred. This incident resulted in pulverizer injuries and strangulation with 769 pilgrim deaths and 934 injured people.

Musculoskeletal/pain was considered the as the third chief complaint and was higher in females than males. This type of complaint was more common among southeast Asia countries. This finding can be explained by the long hours of travel followed by the extra physical effort expended during the performance of rituals (long-distance walking, uncomfortable sleeping conditions, and carrying heavy weights), similar to a previous study (19).

A previous study indicated that gender may be a predictor of chronic musculoskeletal health with females at higher risk than males (29). Also, chronic musculoskeletal health issues are more prevalent in women than in men and display an upward trend as age increases, a finding that has been reported in other studies (30) (31) (32).

Gastrointestinal-related illnesses were also high among pilgrims visiting PHCCs. These illnesses are more common in females than males, and the most affected group was from Western Asia countries. Previous studies have shown that gastrointestinal infections poses a huge burden on the Hajj health system and a threat to healthcare professionals and public-health security (33) (19) (34). Outbreaks related to food- borne gastroenteritis with elevated mortality rates are common at all religious festivals, including the Hajj (35) (36) (19). These types of outbreaks may be due to poor food sanitation and poor storage of food or leftovers (37). Pilgrims must be educated about food safety, hygiene, oral rehydration strategies, antimotility agents, and emergency antibiotic use for treatment of traveler's diarrhea (19).

Cardiovascular related illness showed the lowest frequency, this can be explained by most of cardiovascular diseases require hospitalization and our sample was taken from PHCCs.

Concerning the disease distribution and onset, most of the patients who attended the PHCC had symptom onset within 24 hours. A statistically significant relationship among between the symptom onset and heat- related illness ( $p < 0.0001$ ), respiratory-related illness ( $p < 0.0001$ ), musculoskeletal/ pain-related illness ( $P < 0.0001$ ), and other diagnosis ( $P < 0.004$ )

was found. This finding can be explained by all disease categories showing that the majority of cases attended PHCCS on day 9 followed by day 8. A previous study showed that pilgrims with respiratory diseases attended the PHCCS on days 8,11, and 12 while the musculoskeletal diseases attended on day 9. Our results address the peak attendance at the PHCCs as day 9, which can be explained by most of the pilgrims fasting on this day and also traveling to Arafat; therefore, this combination would have exacerbated the symptoms.

Crowded medicine at Hajj is dazed by obstacles of healthcare availability, infection control, on-site treatment, referral, shifting, and response to tragedies and public health emergencies in addition to challenges to providing assistance such as accommodation, food and water, conveyance, mass communication, interpersonal communication, hygiene and cleanness, overcrowding, and human security (33) (3). Therefore, establishing forecasting model based on previous data scenarios to calculate infections, trauma, gastrointestinal diseases etc is essential for description accurate measures such as hospital and PHCCs recourses, manpower, prevention measures etc.

This study should be considered with its limitations. The sample was biased since the participants were attending PHCCs. Also, the data was collected from PHCCs; thus, it is likely that individuals with severe conditions were not included. A random sample would have been more representative of the population.

Also, there was no information about referrals to tertiary hospitals or mortality-related information. However, the study design made it possible to obtain information about the chief complaints among pilgrims attending PHCCs.

In conclusion, the most common chief complaint was respiratory-related illness followed by trauma/injury-, musculoskeletal/pain- and gastrointestinal system-related illnesses. Our data showed that the peak of the visiting PHCC occurred in day 9.

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