

النشرة الوبائية السعودية

تصدرها وزارة الصحة

الوكالة المساعدة للطب الوقائي وبرنامج الوبائيات الحقلية
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Head-shaving practices of barbers and pilgrims to Makkah, 1998

Head shaving is potentially a risk factor for transferring infections, especially bloodborne diseases. Hundreds of thousands of pilgrims (Hajjees) have their heads shaved within hours in a well-defined area. Conceivably, the hygienic behavior of Hajjees and the practices of barbers could make head shaving during the pilgrimage to Makkah (Hajj) an optimum focal setting for the worldwide spread of serious bloodborne diseases such as hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). We studied the head-shaving practices of barbers and Hajjees to identify unsafe practices and to determine what steps are necessary to prevent or reduce the transmission of bloodborne diseases among Hajjees.

We observed 23 nationalities to determine the percentage who had completely shaved their heads. We used a two-stage cluster sampling to select and interview 298 Hajjees who had their heads shaved with razor blades, and visually checked their scalps for visible cut wounds. We covertly observed 196 illegal barbers as they worked (Figure 1). Then, according to a standard checklist, asked them about infectious diseases that could be transmitted by head shaving. We also inspected their hands for visible cut wounds.

The proportion of Hajjees who had their heads shaved exceeded 90% among those from Eritrea, Egypt, Mauritania and Pakistan, whereas the proportion of head-shaving Hajjees was quite low among those from Tunisia and Syria. About 61% (95% Confidence Interval [CI] 55-66) of Hajjees had cuts to the scalp (a mean of 2.6 per Hajjee, maximum of 18 cuts). Of all Hajjees, 1.3% indicated they had a history of hepatitis. Out of 196 barbers observed, 23% (95% CI 17-30) had uncovered hand wounds, 21% (95% CI 16-28) used the same blade for more than one shave, and 82% (95% CI 76-87) threw at least one used blade on the ground. The mean (\pm SD) time for a single head shave was 5 ± 1.8 minutes (range 2-10 minutes).

Seventy-four percent of Hajjees (95% CI 66-77) and 20% of barbers (95% CI 6-15) were not aware of any health problems that could be caused by shaving with used razor blades. Head-shaving practices of Hajjees did not vary with their

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Head-shaving practices of barbers and pilgrims

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educational level. About one-fourth of Hajjees from western countries and sub-Saharan Africa were relatively more aware of potential transmission of HIV/AIDS by barbers, compared with only 4-12% of Hajjees from other countries. Hajjees aged 50 years or younger were relatively more concerned with transmission of HIV, whereas older Hajjees were more concerned about transmission of skin diseases.

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Editorial note: There is no place on earth where hundreds of thousands of people have their heads shaved within a few hours in a very limited geographical area as during Hajj. Similarly, every year large numbers of Muslims perform *Umra*, worship in *Haram*, the Holy Mosque. The uncertainty of disease profiles of the unequivocally diverse population of Haj-

jees, the poor hygienic behavior of Hajjees, and the practices of barbers shown in this study are disturbing. There is an obvious increased potential risk for bloodborne diseases among Hajjees as well as between Hajjees and barbers.

A further risk is presented with the data on the fate of used razor blades, showing that 82% of the barbers threw used blades on the ground after shaving rather than using garbage cans. This presents the hazard of foot injury to Hajjees, as many of them lose their slippers in the crowds that form after finishing *Al Jamarat* (pebble throwing).

The Saudi Ministry of Health (MOH) is aware of the public health consequences of unsafe head-shaving practices, and has spared no effort to constantly upgrade the facilities available to the Hajjees in order to provide adequate health care for them. Included in MOH plans for a

safe Hajj is the wide distribution of illustrated, health education materials translated into 10 main languages. About 700 barber chairs were placed around the *Al Jamarat* area (Figure 2). Nevertheless, the difficulty in communicating with Hajjees makes it very difficult obviously to ensure that all Hajjees practice head-shaving safety as only 14% of the Hajjees actually asked the barber to change the blade before shaving.

An appropriate intervention should be fourfold: availability of safe razor blades, health education, presence of affordable head-shaving services, and close supervision of barbers. Hajjees need to be educated to treat razor blades used for head shaving as if they were using disposable syringes.

It is recommended to have each razor blade and its holder packed in a plastic bag; each Hajjee should be told to make sure the plastic bag is

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Figure 1: Hajjee having head shaved by illegal barber during Hajj



Figure 2: Legal barber chairs at Al Jamarat during Hajj



Glossary of terms

Hajj- Islamic pilgrimage to Makkah

Hajjee- Muslim pilgrims

Hijran calendar- The Muslim lunar year of 12 months calculated from the actual sighting of the moon.

1418H (Hijran)=1998G (Gregorian)

10 Duhl Hijja- the Feast of Sacrifice Day (April 7, 1998)

Ramadan- The Muslim Holy Month of fasting

Hajj season- 4-month period between Ramadan and Dhul Hijja

Hamlah- Organized pilgrim group

Haram-The Holy Mosque, Makkah

Umra-Traveling to worship in *Haram*

Zamzam- The Holy Well, Makkah

Mutawif- Saudi Muslim guide

Al Jamarat-Area near Makkah used for pebble throwing

Masha'ar-The holy city of Makkah and related holy places of Mina, Arafat and Muzdalifa

Behavioral Risk Factors for disease during Hajj: the second survey

During the Islamic pilgrimage to Makkah (Hajj) of 1417 (1997), the Saudi Arabian Field Epidemiology Training Program (FETP) conducted a major survey to assess behavioral risk factors (BRF) for several important diseases and conditions among the pilgrims (Hajjees). At Mina, a holy place near Makkah, where more than 2 million Hajjees camp for at least 3 days, 1101 Hajjees completed a self-administered questionnaire that was translated into 10 major languages. A similar survey was conducted this past year during Hajj 1418 (1998) to validate the results of the first BRF survey, assess current interventions, and to suggest designing additional feasible, relevant, and culturally acceptable intervention programs.

Accordingly, the map of Mina was used to divide the camping area into 4 equal zones, then further subdivided into 475 equal areas. Of those 475 equal areas, we randomly selected 61 clusters proportionate to the number of areas in each zone using a two-stage cluster sampling. A total of 1613 Hajjees from 53 nationalities were interviewed, 20-30 Hajjees per cluster.

Hajjees were grouped according to their nationalities as determined by the Ministry of Hajj: Gulf Cooperation Council countries (GCC), Other Arab countries, South Asia (Indian subcontinent, ISC), Southeast Asia (SEA), Sub-Saharan Africa (SSA), Iran, the Former Soviet Union (FSU), Turkey, the Americas, the European countries, Australia and Other Western countries.

Of the total of 1613 respondents, 71% were performing Hajj for the first time and 15% were residents of the Kingdom of Saudi Arabia (KSA).

Risky behavior for food poisoning included bringing foods from home countries (37%) and eating food from street vendors (33.9%). Heat stroke prevention included using umbrellas (59%). Of all Hajjees, 3-5% moved between the holy places on foot.

Nineteen percent lost their way in Mina for a median of 2 hours, drank a median (interquartile range) of 2500 (1500-3750) ml of fluids, and slept for a median of 6 hours per day. After completing Hajj rites, 56% (95% CI 54-59) had their heads shaved with razor blades and 25% (95% CI 21-29) put themselves at risk of bloodborne disease by reusing razor blades used by other Hajjees. Hajjees also risked injuring themselves by hanging on the backs of buses 12% (95% CI 10-13). The main BRF are summarized in Table 1.

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Editorial note: Hajjees come to KSA from more than 140 countries around the world with varying disease profiles (1). Surveillance of BRF can provide the basis for both launching and evaluating programs designed to reduce the prevalence of unhealthy behaviors. Surveillance data are necessary for formulating intervention strategies, justifying resources to support these strategies, and proposing new policies or regulations. Also, data allow monitoring of trends in health behavior (2).

The results of this survey were consistent with a previous report and indicate the need for simple, innovative cross-cultural educational programs aimed at reducing BRF among religious visitors.

The variation in the meningococcal vaccine (MCV) coverage rates demonstrates the need for continuous effort to maintain high coverage,

probably through the constant release of reminders emphasizing strict adherence to the visa issuance policy for religious visitors. Rapid mini-surveys are needed to identify Hajjees from countries with relatively low MCV coverage early enough to launch mass catch-up vaccinations in KSA.

The reasons for bringing foods were not ascertained; however, it is conceivable that Hajjees brought their favorite items thinking the food might be difficult to find or too expensive to buy in Makkah. Also, perhaps Hajjees brought ready-to-eat foods such as canned foods, because cooking facilities were not readily available and they wanted to save time by not cooking. Canned foods are usually safe. However, in the absence of adequate refrigeration and re-heating facilities, leftover canned foods can be potentially hazardous. The major factor that contributes to outbreaks of foodborne disease in developed countries is holding cooked foods at an ambient temperature for several hours (3).

The results of this survey show there is a remarkable variation in the proportion of Hajjees who had their heads shaved during Hajj. Hajjees should be the center of all interventions as it would be difficult to supervise the large number of licensed and unlicensed barbers (such as fellow Hajjees), whose main goal is to make as much money as possible during Hajj.

Heat exhaustion during Hajj is the leading cause of morbidity among Hajjees and accounts for 70% of all hospital admissions (4). The etiology of heat exhaustion is multi-factorial; well-established risk factors have been elucidated. Conceivably, a multitude of interventions is needed. Some risk factors for heat exhaustion are inescapable (crowding, especially at *Al Jamarat*, and the desire of Hajjees to visit landmarks at Mina and Arafat); whereas some other risk factors are modifiable, such as increasing the daily intake of fluids. Inter-

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Behavioral Risk Factors for disease during Hajj: the second survey

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ventions need to address Hajj and Hajj guides (*Mutawifs*); many interventions might start in the home country of each Hajjee.

Health education is the key element in all interventions to prevent Hajj-related health problems (5). Exposure of Hajjees to intensified sessions in health education regarding different aspects of Hajj-related illnesses could start even before Hajjees depart from their home countries. Then, language would not be a barrier, as health educators would be using the Hajjees' mother tongue. Health education

could continue throughout the journey to Makkah. At that time, Hajjees would probably be more attentive and responsive than when they receive health education after arrival to Makkah. Nevertheless, the *Mutawifs* could still play an important role in health education for Hajjees inside their camping sites.

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Table 1: Main differences between the 1997G (1417H) and 1998G (1418H) BRF surveys

VARIABLE:	1997G (1417H)	1998G (1418H)	REMARKS:
Vaccination against meningococcal meningitis (MCV)	90% (88-91%)	88% (87-90%)	-MCV: Low coverage among Hajjees from FSU (76.4%), Turkey (68.3%). For international Hajjees, 89.9%, domestic Hajjees, 79.7%.
Risk factors for heat-associated illnesses:			
Used umbrellas	51%	59%	-Umbrella usage: almost all Hajjees from Iran (94.9%), half from GCC, SSA, and ISC stated never used umbrellas during Hajj
Moved at least 6 km by foot	1.6 - 26.1%	7.5 - 12.5%	-Walking: mostly those from ISC, SSA, and Arabs from countries other than GCC
Carrying heavy load	*	30% (24.5-35.6%)	—
Median fluid intake (in ml) in 24 hours	2500ml	2500ml	-Fluids: American, European, Australian, Turkish Hajjees drank a median of 3000 ml or more.
Lost way in Mina	22.1%	19.1%	-Lost way: Median duration of 2 hrs (IQR 1-4 hrs).
Visited Jabal Ar-Rahma	31.3%	29.5%	—
Prayed - Namira Mosque	19.9%	15.7%	—
Wore identity wrist band	56.8%	61.3%	—
Had head shaved	41.3% (37.8-44.8%)	56.4% (54-59%)	-Head shaved: Turkish (3.4%) and SEA (12.3%) Hajjees least likely. More than 80% of Hajjees from ISC, UK, Iran had heads shaved.
Food hygiene and safety:			
Brought food from home (canned/dried/other)	9.7/ 26.4/ 4.7%	7.0/ 26.7/ 4.6%**	-Food: GCC, SSA, and Iranian Hajjees least likely to bring (12-18%); Hajjees from Turkey, FSU, SEA brought mostly dried foods (65-86%).
Bought food from street vendors	27.35%	33.9%	—
Visited health facility at least once	24.6%	44.4%	—
Received health education before arrival	65.4%	69%	—

* This question was not asked. ** Hajjees brought more than one food item

Risk factors for hip fractures among pilgrims, Hajj 1998G (1418H)

Hip fractures are a major acute orthopedic condition among the elderly population worldwide (1). Studies have shown that subsequent disability, dependency, and high case-fatality rates (2, 3) frequently complicate hip fractures. During Hajj (the Islamic pilgrimage to Makkah), hip fractures are a leading cause among pilgrims (Hajjees) for admissions and prolonged hospital stay. There are a few descriptive studies on trauma during Hajj; however, none of these studies address the risk factors for hip fractures. The objective of this study is to identify the modifiable risk factors for hip fractures during the Hajj season.

During the Hajj period of 1998 (1418 H), we conducted a case-control study in 3 of 4 major hospitals in Makkah. A hip-fracture case was defined as any patient with a fracture involving the neck of the femur or femoral trochanter (greater, lesser, or subtrochanteric). A control was defined as any patient with fractures other than the hip, admitted to any of the 3 hospitals during the study period.

Included were 61 case-patients and 118 control-patients from 17 different nationalities. The male to female sex ratio was 2:1. Fifty-five case-patients (90.2%) were Hajjees compared with 65 (55.1%) control-patients; Odds Ratio (OR) 7.5, 95% Confidence Interval (CI) 2.8-21.1. The mean age (in years) of case-patients and control-patients was 65 and 42 respectively ($p < 0.005$). Fifty-five case-patients (90.2%) were aged 50 years or older compared to 53 (44.9%) of the control-patients (OR 11.2, 95% CI 4.2-31.6). The older the age the higher the likelihood for hip fracture ($p < 0.001$).

Injuries that resulted in fractures (precipitous injuries) included: falls caused by a variety of reasons, mechanisms and sites; road traffic accidents (RTA), including knocks associated with motor cycles; and other casualties. The leading precipitous injury among case-patients was

falling, either while walking on a level surface (44 cases, 72.1%), or taking stairs (9 cases, 14.8%). Only 6 injuries (9.8%) were caused by RTA. Of all precipitous injuries, 53 (86.9%) cases of hip fractures and 41 (34.7%) other fractures resulted from falls (OR 12.9, 95% CI 5.2-33.0). Half of the case-patients (29, 49.2%) fell inside or around the Holy Mosque (*Haram*) compared with 10 (8.5%) control-patients (OR 10.5, 95% CI 4.3-25.9). Of the 53 case-patients who fell, 25 (47.2%) slipped on smooth ground as compared to 9 (22.0%) of the 41 control-patients ($p < 0.05$). Among those who slipped, 20 case-patients (80.0%) and 6 control-patients (66.7%) reported slipping on wet surfaces ($p > 0.05$). Seven case-patients (13.2%) and one control-patient (2.4%) fell inside bathrooms (OR 15.2, 95% CI 1.8-336).

Compared with control-patients, hip-fracture case-patients were more likely to have a chronic illness such as diabetes mellitus, hypertension or ischemic heart disease (OR 4.3, 95% CI 1.8-10.0) and hearing difficulty (OR 3.8, 95% CI 1.4-11.0). However, there was no difference between case- and control-patients with regard to the use of walking aids (OR 3.7, 95% CI 0.9- 16.0), having visual difficulty (OR 1.4, 95% CI 0.6- 3.4), or having a smoking habit (OR 1.1, 95% CI 0.4-3.2). Only 4 patients, 2 cases and 2 controls, had a past history of any fracture during the preceding 5 years ($p > 0.05$).

—Reported by: Dr. Abdullah M. Al Saigul and Dr. Hassan E. El Bushra (Saudi Arabian Field Epidemiology Training Program)

Editorial note: Risk factors for hip fractures work as a complex unit and the personal and environmental factors intermingle (3). Regarding Hajj season, the risk factors for hip fractures can be divided into two categories: non-modifiable and modifiable risk factors. Non-modifiable risk factors include: age and gender of the

Hajjee and whether or not he or she suffers from symptoms of an acute or an underlying chronic disease; from sensory and perceptual declines; from functional disabilities; or has symptoms from drugs that enhance risks for falls and fracture of bones (4). Conversely, modifiable factors are mainly environmental such as slippery floors, curling rugs, stairways, and poor lighting.

Falls, especially around *Haram*, were the main cause for hip fractures among Hajjees. Falls were facilitated by the hard, smooth, slippery, and occasionally wet, marbled surfaces of *Haram*, the surrounding grounds, and stairways. Slippery surfaces increase the risk for falls (5) and hard surfaces increase the risk for fractures (4, 6).

Although the janitors of *Haram* are conscientious in drying the floors, immediately after each mop-up operation, it is not uncommon to find areas wet with lines of water formed by cleaning machines, or wet from spilled *Zamzam* (sacred well) water or soft drinks. Also, the residual soap makes the floors more slippery. Moreover, it was noted that most Hajjees wore the most slippery type of slippers in the marbled courtyards surrounding *Haram*. The floors of bathrooms annexed to *Haram*, ablution areas, and the *Zamzam* area are almost always wet because of the nature of Hajjee activities at these sites.

Besides the direct consequences to a Hajjee's health, hip fractures disrupt Hajj activities and have a very high cost of hospitalization (1). In a few developed countries, the minimum direct cost of a hip-fracture case was shown to exceed 3,000 US dollars (7). During Hajj season, the actual burden of injuries in general, and hip fractures in particular, is not known. Similar to the carefully monitored infectious disease surveillance system, a Hajj injury surveillance is recommended to allow for better understanding of injury patterns and determinants, and to help health authorities plan for future seasons. Interven-

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Malaria among pilgrims to Makkah, 1998: Is it imported or locally acquired?

Hajj is a religious congregation in Makkah, in the Kingdom of Saudi Arabia (KSA), attended by more than 2 million Muslim religious visitors from all over the world, including those from countries where malaria is endemic. Makkah is a malaria-free city. However, an unusual increase in the number of malaria cases in western and southwestern KSA in the last 2 years has been noted. The pilgrimage season is advancing to coincide with the malaria transmission season in the pilgrimage area, which starts in October and continues through May of the next year. In this study we examine the proportion of locally acquired malaria cases among religious visitors to Makkah (Hajjees).

During the 1998 Hajj season, the 4-month-period between *Ramadan* and *Dhul Hijja* 1418H, 178 cases of malaria were diagnosed. Saudis made up 126 (70.8%) of the cases; 52 (29.2%) were non-Saudis. The Saudis came to Makkah from other regions of KSA where malaria transmission exists: 81 cases (45.1%) from the southwestern area of Tihama, and 59 cases (33.1%) cases from the valleys around Makkah. Among the non-

Saudis, 21 (11.7%) of the malaria cases were diagnosed among recent arrivals from the Indian subcontinent, 16 (9.0%) from East Africa, 13 (7.3%) from Yemen, and 2 (1.2%) from other countries: China and Egypt. Only 15 (8.4%) patients were Hajjees; whereas, 163 (91.6%) were residents of KSA. Of all residents of KSA, 90 (55.2%) were from Makkah (Table 1). The male to female sex ratio was 2:1. The difference between the mean age of male and female cases was not statistically significant ($p>0.05$).

Some 123 cases (69.1%) were due to *P. falciparum*, 49 cases (27.5%) were due to *P. vivax*, and 6 (3.4%) cases (5 Saudis, 1 Sudanese) were mixed infections (*P. falciparum* and *P. vivax*). However, malaria cases were predominantly due to *P. falciparum* except for patients from the Indian subcontinent, where most of the cases were due to *P. vivax* (Table 1). The majority of malaria cases due to *P. vivax* 34 (69.4%) came from valleys around the city of Makkah; whereas, the majority of cases of malaria imported from other regions of KSA were due to *P. falciparum*, 69

(56.1%). The onset of symptoms of 48 (27%) malaria patients started at or before arrival to Makkah. On detailed questioning about travel history, none of the malaria cases could be attributed to local transmission of malaria inside the city of Makkah and associated holy places.

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Editorial note:

According to the World Health Organization (WHO), malaria is endemic in 91 countries, predominantly in Africa, Asia, and Latin America. About 40% of the whole world population is at risk. It is estimated that 2.1 billion people live in areas of the world affected by malaria (1). In KSA, about 1.6 million people live in areas where malaria is transmitted. *P. falciparum* causes over 90% of malaria cases in southwestern Tihama and about 35% of malaria cases in the northwestern regions of KSA. *P. vivax* is a predominant species in

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Table 1: Distribution of malaria cases during Hajj by nationality in Makkah Holy City, 1998

Nationality	Total number of cases	Resident of Saudi Arabia		International Hajjees	Plasmodium species		
		Resident - Makkah area	Resident - other KSA regions		P.F	P.V	MIX (P.F+P.V)
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Saudi Arabian	126 (70.8)	67 (53.2)	59 (46.8)	0	88 (69.8)	33 (26.2)	5 (4)
Indian subcontinent (Pakistani=12, Indian=5, Bangladeshi=4)	21 (11.7)	10 (47.6)	8 (38.1)	3 (14.3)	8 (38.1)	13 (61.9)	0
East African (Sudanese=14, Somali=2)	16 (9)	7 (43.8)	4 (25)	5 (31.3)	14 (87.5)	1 (6.3)	1(6.3)
Yemeni	13 (7.3)	6 (46.2)	1 (7.7)	6 (46.2)	11 (84.6)	2 (15.4)	0
Other (Chinese=1, Egyptian=1)	2 (1.2)	0	1 (50)	1 (50)	2 (100)	0	0
Total	178 (100)	90 (55.2)	73 (41)	15 (8.4)	123 (69.1)	49 (27.5)	6(3.4)

- Percentages calculated from column total
- Otherwise percentages were calculated from respective row totals

Malaria among pilgrims to Makkah, 1998

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the northwest regions and accounts for over 50% of the malaria cases; whereas, *P. malariae* is scarce and constitutes 1-2% of all the malaria cases in KSA (2).

The governmental malaria control project in KSA was initiated in 1952 with assistance from WHO, mainly for the protection of the pilgrimage routes. Hajjees are neither screened for malaria at the entry ports of the Kingdom, nor given suppressive doses of anti-malarial treatment. Currently, most areas are virtually free from malaria with the exception of the southwestern areas. Central KSA is non-malarious and only occasional imported cases are reported every year. Transmission of malaria has

been halted in the eastern and northern parts of KSA. However, in western KSA, there is low incidence of malaria (1-3 per 1,000 per year) and in Tihama, the coastal plains along the Red Sea in southern and southwestern KSA, medium or high incidence of malaria (more than 3 per 1,000 per year) is reported (2). The peak of malaria transmission occurs between October and April and coincides with the rainy season (70-550 mm/year). There is a noticeable decline in incidence of malaria during the summer months (2).

All malaria cases diagnosed during the Hajj period admitted recent travel history to, or arrival from malarious areas within KSA in the 2 weeks that preceded the onset of symptoms. The people traveled to malarious areas such as Al-Leith, Al-Gonfedah, or Jizan to visit their relatives during a school vacation or to work in their farms in the affected valleys. This movement of peoples to and from endemic areas poses the threat of imported malaria also in Kuwait (3). The majority of non-Saudi cases of malaria came from East Africa, the Indian subcontinent and Yemen, where malaria is known to be endemic.

Diagnosis of malaria cases among Hajjees during Hajj season does not

imply local transmission of malaria in the city of Makkah and surrounding holy places. Interruption of malaria transmission in these areas could be explained by the intensive environmental malaria control efforts and strict malaria control measures instituted just before Hajj season, in the holy places, along the road, and the adjacent valleys that lie between Jeddah, the main port of entry of pilgrims (Hajjees), and the city of Makkah (4).

Despite successful efforts made to interrupt local malaria transmission during the Hajj season in the city of Makkah and the neighboring holy places, the continuous influx of religious visitors and expatriate workers remains a potential source for introduction of malaria. The role of illegal aliens in reintroducing malaria into this area can not be ruled out; an influx of a large number of illegal immigrants changed the epidemiology of malaria and other diseases in Kuala Lumpur, Malaysia (5). It is probable that the unusual heavy and prolonged rainfalls in the last 2 years, during these 4 months, favored increased breeding of the Anopheles vector and greater transmission of the parasite in endemic areas around Makkah.

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Risk factors for hip fractures

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tions to improve environmental conditions have greatly reduced the incidence of falls, the prime cause of hip fractures.

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Head-shaving practices

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opened in front of him. Used razor blades should be considered potentially infective and must be handled with extraordinary care to prevent unintentional injuries. They must be placed into puncture-resistant containers located as close as practical to the area in which they are used (1). We also recommend establishing an official shaving area at each camp with qualified barbers and a group of Hajjees (*Hamlah*) responsible for ensuring hygiene and good practice.

References:

1. Lakshman S. Rules of infection control. *International Dental Journal* 1993; 43:578-584

ملخص باللغة العربية

عوامل خطورة كسور الورك بين

الحجاج خلال حج ١٤١٨ هـ

إن كسر عظم الورك حالة شائعة عالمياً بين كبار السن و تتمثل مضاعفاته في الإعاقة اللاحقة والاعتماد على الغير وطول الإقامة في المستشفى بالإضافة إلى ارتفاع معدلات الوفاة.

الهدف من هذه الدراسة هو تحديد عوامل الخطورة القابلة للتعديل خلال الحج.

بين ٦-١٥ من ذي الحجة لعام ١٤١٨ هـ قام فريق من برنامج الوبائيات الحقلية بعمل دراسة مقارنة في ثلاثة من أربعة مستشفيات في مكة وقورنت حالات كسور الورك بحالات مرضى من كسور أخرى. تمت مقابلة ٦١ حالة كسر ورك و ١١٨ حالة مقارنة من كسور أخرى من ١٧ جنسية. وجدنا أن ٥٥ (٩٠,٢٪) من حالات كسور الورك كانت بين الحجاج بالمقارنة مع ٦٥ (٥٥,١٪) من العينة المقارنة (معامل الشذوذ ٧,٥ نسبة التأكد ٩٥٪ ٢,٨-٢١,١).

كان متوسط عمر الحالات ٦٥ سنة والعينة المقارنة ٤٢ سنة كما بلغ معدل إصابة الذكور للإناث ١:٢. يحدث كسر الورك غالباً من السقوط خاصة في المسجد الحرام وحوله ٢٩ (٤٩,٢٪). أيضاً الانزلاق ٢٥ (٤٧,٢٪) والسقوط من على السلالم ٩ (٢٢٪) كانا من ضمن آلية الإصابة كما حدثت حالتان في زمزم وثلاث حالات في دورات المياه القريبة من الحرم. كان السقوط خصوصاً حول الحرم والساحات المحيطة والسلالم سبباً رئيسياً

لكسور الورك بين الحجاج ويسهله الأرضيات الرخامية الزلقة والرطوبة. مما سبق نوصي باستحداث رصد وبائي للإصابات لتسهيل تفهم نمط الإصابات مما يساعد المختصين في التخطيط للمواسم القادمة.

إعداد: د. عبد الله الصيقل

برنامج الوبائيات الحقلية

الملاريا بين الحجاج، ١٤١٨ هـ

في موسم الحج يجتمع أكثر من مليوني مسلم، يأتي بعضهم من بلدان موبوءة بالملاريا وفي السنوات الأخيرة ترافقت الزيادة الغير عادية في عدد حالات الملاريا في غرب وجنوب غرب المملكة العربية السعودية بموسم الحج خلال فترة انتقال المرض من شهر أكتوبر إلى مايو من السنة التي تليها.

الهدف من هذه الدراسة هو معرفة نسبة الإصابة المحلية بالملاريا بين الحجاج و المعتمرين. شُخصت ١٧٨ حالة ملاريا من شهر رمضان إلى ذي الحجة ١٤١٨ هـ، منهم ١٢٦ (٧٠,٨٪). سعوديين و ٥٢ (٢٩,٢٪) غير سعوديين.

من بين حالات السعوديين ٨١ (٤٥,١٪) من تهامة و ٥٩ (٣٣,١٪) من أودية مكة. من بين حالات غير السعوديين ٢١ (١١,٧٪) من الهند و ١٦ (٩٪) من شرق أفريقيا و ١٣ (٧,٣٪) من اليمن وحالتين (١,٢٪) من الصين و مصر. يمثل الحجاج ١٥ (٨,٤٪) من بين الحالات. بلغت نسبة الذكور للإناث ١:٢

ولم يكن للعدد أي دلالة إحصائية. من بين حالات الملاريا ١٢٣ (٩٦,١٪) ملاريا خبيثة و ٤٩ (٢٧,٥٪) ملاريا حميدة و ٦ (٣,٤٪) تجمع بين الملاريا الحميدة والخبيثة. أتت (٦٩,٤٪) من حالات الملاريا الحميدة من أودية مكة و (٥٦,١٪) حالة ملاريا خبيثة من مناطق المملكة الموبوءة.

بدأت الأعراض عند ٤٨ (٢٧٪) حالة قبل أو بعد وصولهم مكة ولم تنتقل أي حالة ملاريا داخلها.

أنشئ برنامج مكافحة الملاريا في المملكة عام ١٩٥٢م وتم القضاء على الملاريا في المنطقة الشرقية والشمالية كما انخفض معدل الإصابة بالملاريا في المنطقة الغربية وبلغ معدل الإصابة بالملاريا في جنوب غرب المملكة العربية السعودية بتهامة (أكثر من ٣ لكل ١٠٠٠ سنوياً).

وفدت حالات الملاريا المشخصة خلال موسم الحج من المناطق التي يرتفع فيها معدل الملاريا مثل الليث و القنفذة و جازان بالإضافة لأودية مكة كما لم تدل حالات الملاريا المشخصة خلال موسم الحج على وجود حالات ملاريا محلية في مكة أو المشاعر المقدسة، وهذا يعزى إلى تكثيف برنامج مكافحة المشاعر المقدسة و المناطق الموجودة بين جدة ومكة المكرمة.

إعداد: محمد السيد

برنامج الوبائيات الحقلية

تعد حلاقة الرأس عامل خطورة ومصدراً محتملاً لنقل العدوى بين الحجاج. إن سلوك الحجاج غير الصحي وممارسات الحلاقين قد تجعل من الحلاقة سبباً لنشر الأمراض التي تنتقل عن طريق الدم مثل فيروسات التهاب الكبد ب و ج والإيدز. الهدف من هذه الدراسة هو تحديد الخطوات الضرورية لمنع أو خفض انتقال الأمراض بين الحجاج. من خلال عينة عنقودية تم اختيار ومقابلة ٢٩٨ حاجاً من ٢٣ جنسية كما قمنا بمراقبة ١٩٦ حلاقاً بدون علمهم. تتجاوز نسبة الذين قاموا بحلاقة رؤوسهم كلياً ٩٠٪ من حجاج إرتريا و مصر وموريتانيا و باكستان بينما تنخفض بين حجاج تونس وسوريا. تبين وجود جروح قطعية في فروة الرأس لنحو ٦١٪ من الحجاج. كما صرح ١٠٣٪ من الحجاج بأن لديهم تاريخ مرضي عن التهاب الكبد. ومن بين ١٩٦ حلاقاً فإن ٢٣٪ منهم عندهم جروح مكشوفة في اليدين (نسبة التأكد ٩٥٪ من ١٧-٣٠). كذلك فإن ٢١٪ استخدموا الشفرة ذاتها لأكثر من مرة (نسبة التأكد ٩٥٪ من ١٦-٢٨) و ٢٨ قاموا على الأقل برمي شفرة واحدة مستعملة على الأرض (نسبة التأكد ٩٥٪ من ٧٦-٧٨). كان ٧٤٪ من الحجاج و ٢٠٪ من الحلاقين غير مدركين للأضرار الصحية الناتجة عن الحلاقة بشفرة مستعملة. إن

لغة شملت الدراسة ١٦١٣ حاجاً من ٥٣ جنسية منهم ٧١٪. يؤدون فريضة الحج لأول مرة، كما بلغت نسبة حجاج الداخل من سعوديين ومقيمين ١٥٪. ذكر ٦١٪ من الحجاج انهم يواظبون على لبس سوار المعصم وبلغت نسبة التطعيم ضد الحمى المخية الشوكية ٨٨٪. قام ٣٧٪ من الحجاج بإحضار بعض الأطعمة معهم من دولهم. كما تناول ٣٢ من الحجاج الطعام في منى وعرفات من الباعة المتجولين. ذكر ٥٩٪ حاجاً أنهم حافظوا على استعمال المظلة الواقية من الشمس. فيما ذكر ٣-٥٪ من الحجاج أنهم تنقلوا بين المشاعر مشياً على الأقدام. ذكر ١٩٪ من الحجاج أنهم قد ضلوا طريقهم في منى ولدة بلغت في المتوسط ساعتين. بلغ متوسط ما يشرب الحاج من السوائل ٢٥٠٠ مل في اليوم. و يبلغ متوسط ساعات النوم لدى الحجاج ٦ ساعات يومياً. ذكر ٥٦٪ من الحجاج أنهم حلقوا رؤوسهم بواسطة الموسى، ووضع ٢٥٪ أنفسهم تحت خطر الإصابة بالأمراض التي تنتقل عن طريق الدم كالتهاب الكبد باستخدامهم أمواس سبق استخدامها لآخرين. وعرض ١٢٪ أنفسهم لخطر السقوط بركوبهم فوق سقوف الحافلات. كما تعرض ٩٪ من الحجاج لإصابات في الرأس أثناء رميهم لحصى الجمرات.

مع مقارنة نتائج هذه الدراسة مع الدراسة السابقة تبين أنها متوافقة إلى حد كبير. ونوصي بالاسترشاد بنتائجها في وضع برامج التوعية الصحية للحجاج.

إعداد: د. عبد الله الربيعية

برنامج الوبائيات الحقلية

السلوك الصحي السيئ للحجاج وممارسات الحلاقين في هذه الدراسة تدعوا للقلق فهناك احتمال كبير لزيادة خطر انتقال الأمراض عن طريق الدم بين الحجاج وبين الحجاج والحلاقين. وهناك خطر آخر ممثل في مصير الشفرات المستعملة حيث تبين أن ٨٢٪ من الحلاقين قاموا برميها على الأرض مما يعرض الحجاج لخطر الإصابة بجروح في الأقدام. لم تدخر الجهات الرسمية وسعا لتطوير الخدمات في سبيل توفير العناية الصحية للحجاج، فهناك ما يقارب من ٧٠٠ كرسي مخصصة للحلاقين حول الجمرات. مما سبق نرى أن التثقيف الصحي والمراقبة المباشرة على الحلاقين مطلب أساسي. إن توفير مكان للحلاقة في كل حملة تحت إشراف حلاق مؤهل ضروري لممارسة حلاقة صحية سليمة.

إعداد: احمد السلامة

برنامج الوبائيات الحقلية

السلوكيات الصحية الخطرة للحجاج

خلال حج ١٤١٨هـ

يفد كل عام ما يقارب مليوني مسلم بمختلف صفاتهم وسلوكياتهم وحالاتهم الصحية إلى مكة لأداء فريضة الحج ولدراسة علاقة هذه السلوكيات مع حدوث المرض قام برنامج الوبائيات الحقلية في حج عام ١٤١٨هـ بدراسة مماثلة للدراسة التي تمت في عام ١٤١٧هـ مع ربط النتائج مع بعضها. تمت الدراسة في منطقة منى خلال الأيام الثلاثة لبقاء الحجاج بعد يوم عرفة باستخدام استبيانات مترجمة لخمس عشر

Selected notifiable diseases by region, July - Sept 1998

	Riyadh	Makkah	Jeddah	Taif	Madinah	Qassim	Eastern	Hasa	Hafr Al Batin	Asir	Bisha	Tabuk	Hail	Al Shmal	Gizan	Najran	Baha	Al Jouf	Goriat	Gofuda	Total
Measles	341	51	102	157	48	35	12	6	14	309	289	41	10	25	39	7	26	0	0	10	1522
Mumps	99	52	204	37	67	35	44	6	17	49	14	4	10	9	30	12	33	7	2	1	732
Rubella	8	4	7	5	5	3	10	9	2	11	0	6	8	0	3	0	0	0	0	0	81
Varicella	640	223	223	199	109	242	912	301	85	397	39	73	52	25	23	50	48	16	36	12	3705
Brucellosis	233	43	22	46	46	397	59	37	71	318	174	37	287	18	50	101	44	39	10	7	2039
Meningitis, mening.	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	4
Meningitis, other	28	16	9	9	12	12	3	7	1	19	0	14	3	0	12	3	0	0	0	0	148
Hepatitis A	63	13	58	4	33	147	48	11	44	80	26	12	8	12	11	148	5	16	17	0	756
Hepatitis B	123	111	175	1	34	29	167	9	9	88	24	7	5	0	4	4	67	1	3	5	866
Hepatitis C	34	63	124	0	13	13	60	4	2	80	2	1	3	0	7	1	39	0	1	0	447
Hepatitis, unspecified	29	58	20	0	0	0	2	17	0	4	0	4	37	3	47	16	0	0	0	0	237
Typhoid & paratyphoid	16	9	3	0	1	2	16	2	0	7	2	4	6	4	6	2	7	0	0	0	87
Shigellosis	15	0	3	4	0	6	22	0	3	0	0	16	0	0	4	13	0	0	0	0	86
Salmonellosis	126	8	49	0	0	12	407	11	17	9	1	66	0	0	0	23	9	0	0	0	738
Amoebic dysentery	29	16	345	31	1	34	22	19	0	352	16	0	21	0	5	11	0	0	5	0	907
Syphilis	19	8	16	0	0	0	8	11	0	2	1	0	0	0	1	0	0	0	0	0	66
VD, other	4	10	18	0	0	0	22	27	2	3	1	0	1	0	8	1	0	0	3	0	100

Comparisons of selected notifiable diseases, July - Sept 1997-1998

DISEASE	July Sept 1998	July Sept 1997	Change %	Jan Sept 1998	Jan-Dec 1997	DISEASE	July Sept 1998	July Sept 1997	Change %	Jan Sept 1998	Jan-Dec 1997
Diphtheria	0	0	0	0	1	Meningitis, other	148	110	35	461	437
Pertussis	32	35	-9	82	80	Hepatitis A	756	1029	-34	2660	4524
Tetanus, neonatal	1	1	0	6	26	Hepatitis B	866	808	7	2465	2967
Tetanus, other	1	4	-75	7	18	Hepatitis C	447	281	59	1015	1167
Poliomyelitis	0	0	0	1	0	Hepatitis, un-spec.	237	369	-36	998	1542
Measles	1522	883	72	4298	3978	Typhoid/paratyph.	87	81	7	226	299
Mumps	732	475	54	2268	2414	Shigellosis	86	106	-19	419	819
Rubella	81	66	23	280	373	Salmonellosis	738	823	-10	1729	2379
Varicella	3705	6236	-41	16896	41315	Amoebic dysentery	907	1302	-30	2820	5309
Brucellosis	2039	1561	31	6105	5781	Syphilis	66	49	35	185	219
Meningitis, mening.	4	2	100	40	108	VD, other	100	193	-48	300	664

Diseases of low frequency, July - September 1998

Yellow fever, plague, diphtheria, polio, viral encephalitis, rabies, hemolytic uremic syndrome, transverse myelitis: No cases

Pertussis: 32 (Riyadh 15, Eastern 2, Taif 5, Makkah 1, Hail 4, Bisha 1, Jeddah 2, Giizan 1, Goriat 1)

Neonatal tetanus: 1 (Makkah 1)

Other tetanus: 1 (Riyadh 1)

Guillain-Barre syndrome: 13 (Riyadh 4, Najran 1, Jeddah 1, Asir 1, Makkah 1, Bisha 1, Jouf 1, Qassim 1, Taif 2)

Echinococcosis: 4 (Riyadh 1, Asir 3)

Puerperal sepsis: 1 (Asir 1)

Selected notifiable diseases by region, Oct - Dec 1998

	Riyadh	Makkah	Jeddah	Taif	Madinah	Qassim	Eastern	Hasa	Hafr Al Batin	Asir	Bisha	Tabuk	Hail	Al Shmal	Gizan	Najran	Baha	Al Jouf	Goriat
Measles	129	42	70	82	51	15	16	16	4	40	112	625	16	0	15	2	0	0	0
Mumps	263	113	537	59	87	53	64	37	15	32	72	49	9	2	50	28	5	4	5
Rubella	4	3	20	8	4	7	10	4	0	8	0	12	0	0	0	0	1	0	0
Varicella	810	92	511	213	221	368	1317	373	55	743	13	375	69	88	43	107	65	21	28
Brucellosis	100	9	14	43	18	259	35	21	61	291	99	11	166	14	48	79	46	37	6
Meningitis, mening.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Meningitis, other	51	16	12	8	12	15	10	8	12	11	1	3	5	1	9	3	0	1	0
Hepatitis A	58	45	60	0	25	66	54	15	28	89	9	16	4	7	6	112	18	28	50
Hepatitis B	130	97	242	0	18	33	182	13	6	59	20	13	15	4	8	11	65	0	0
Hepatitis C	21	63	156	0	31	7	59	5	1	3	2	1	5	0	1	4	42	0	1
Hepatitis, unspecified	15	12	24	0	3	0	1	18	0	86	0	3	49	0	31	13	0	0	0
Typhoid & paratyphoid	5	6	1	0	7	3	2	2	1	11	3	1	3	1	2	1	5	0	0
Shigellosis	23	0	38	6	6	3	49	5	18	2	0	23	0	0	2	31	1	0	0
Salmonellosis	110	2	63	0	2	11	334	13	18	16	0	45	0	0	0	18	22	0	0
Amoebic dysentery	66	0	482	19	2	73	16	15	2	237	15	30	9	0	22	3	0	0	9
Syphilis	13	0	20	0	0	0	14	2	0	2	6	0	1	0	0	0	0	0	0
VD, other	10	0	25	0	0	0	26	15	2	3	1	0	0	0	6	4	0	0	9

Comparisons of selected notifiable diseases, Oct - Dec 1997-1998

DISEASE	Oct-Dec 1998	Oct-Dec 1997	Change %	Jan-Dec 1998	Jan-Dec 1997	DISEASE	Oct-Dec 1998	Oct-Dec 1997	Change %	Jan-Dec 1998	Jan-Dec 1997
Diphtheria	0	1	-100	0	1	Meningitis, other	178	131	36	639	437
Pertussis	2	19	-89	84	80	Hepatitis A	690	968	-29	3350	4524
Tetanus, neonatal	4	12	-67	10	26	Hepatitis B	921	816	13	3386	2967
Tetanus, other	4	2	100	11	18	Hepatitis C	405	331	22	1420	1167
Poliomyelitis	0	0	0	1	0	Hepatitis, unspec.	255	339	-25	1253	1542
Measles	1244	511	143	5542	3978	Typhoid/paratyph.	54	75	-28	280	299
Mumps	1494	843	77	3762	2414	Shigellosis	207	305	-32	626	819
Rubella	81	110	-26	361	373	Salmonellosis	654	705	-7	2383	2379
Varicella	5577	6392	-13	22473	41315	Amoebic dysentery	1001	1224	-18	3821	5309
Brucellosis	1363	1360	0	7468	5781	Syphilis	58	68	-15	243	219
Meningitis, mening.	2	6	-67	42	108	VD, other	101	135	-25	401	664

Diseases of low frequency, October - December 1998

Yellow fever, plague, diphtheria, poliomyelitis, viral encephalitis, hemolytic uremic syndrome, transverse myelitis: No cases

Rabies: 1 (Jeddah 1)

Pertussis: 2 (Makkah 2)

Neonatal tetanus: 5 (Makkah 3, Riyadh 1, Jeddah 1)

Tetanus Other: 4 (Makkah 3, Jeddah 1)

Guillain-Barre syndrome: 15 (Riyadh 7, Taif 4, Jeddah 1, Asir 1, Bisha 1, Baha 1)

Echinococcosis: 3 (Asir 3)

Puerpural Sepsis: 4 (Asir 3, Riyadh 1)

Notice to Contributors

The *Saudi Epidemiology Bulletin* is published quarterly by the Department of Preventive Medicine and the Field Epidemiology Training Program.

This publication provides feedback between the Department of Preventive Medicine and medical staff in the Kingdom. The scope is public health in general and epidemiology of infectious and non-infectious diseases in particular, with emphasis on surveillance, outbreak investigation, applied research, hospital infection and innovative approaches. All medical personnel may contribute. Papers fulfilling the following requirements will be considered:

- The work should be original.
- Follow the Vancouver style [1] in preparing articles, which should be no longer than 500 words. An Arabic translation of the summary is desirable. Number references sequentially.
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- 1 International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. *Saudi Med J* 1991;12(6): 443-448.

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Inside the Kingdom

Oct. 14-15, 1999: Core of Health: Kingdom of Saudi Arabia, 100 years. King Saud University, College of Applied Medical Sciences. P.O. Box 10219, Riyadh 11433 Saudi Arabia, Tel: 435-0810. Fax: 435-5883.

Outside the Kingdom

Aug. 31-Sept. 4, 1999: The XV International Scientific Meeting of the International Epidemiological Association: Epidemiology for Sustainable Health. Florence, Italy. Contact: Organizing Secretariat, IEA Florence 99, c/o SINEDRION, Via G. Marconi, 27, 50131 Firenze, Italy.

Oct. 3-5, 1999: Annual meeting of the American College of Epidemiology: Epidemiology, Risk Assessment, and Public Policy. Bethesda, MD, USA. Contact the college at 4101 Lake Boone Trail, Suite 201, Raleigh, NC 27607, USA. Phone: (919) 787-5181 Fax: (919) 787-4916.

Nov. 28-Dec. 2, 1999: 48th Annual Meeting, American Society of Tropical Medicine and Hygiene, Washington, DC, USA. Contact: ASTMH, 60 Revere Dr., Suite 500, Northbrook, IL 60062 USA. E-mail: www.astmh.org. Online submission process: <http://liabstract.cornester.com>

Send correspondence, comments, calendar listings or articles to:

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Saudi Epidemiology Bulletin (SEB) is published quarterly by the Department of Preventive Medicine and the Field Epidemiology Training Program (FETP), the Ministry of Health.

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Printing of this issue of the

Saudi Epidemiology Bulletin
is supported by
Abbott Diagnostic Products

Riyadh, Saudi Arabia

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