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Australian Hajj pilgrims' infection control beliefs and practices: Insight with implications for public health approaches

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Summary *Background:* Hajj is one of the largest annual mass gatherings around the world. Although the Saudi Arabian health authority recommends vaccination and other infection control measures, studies identified variable uptake of these measures among pilgrims, and the reasons behind this variability remain unclear. This qualitative study aimed to addresses this knowledge gap.
Methods: In-depth interviews were conducted with pilgrims over 18 years of age.
Results: A total of 10 participants took part in the study. There was low perception of the potential severity of respiratory conditions and the need for influenza vaccination during Hajj. Different attitudes were found by age group with elderly participants believing that they were under Allah's protection, and were fatalistic about the risk of illness. While younger participants described the impact infections would have on their worship. Facemask use was infrequent with discomfort; difficulty in breathing and a feeling of isolation were commonly cited barriers to use of facemasks. Participants accepted and trusted preventative health advice from travel agents and friends who had previously undertaken the Hajj more so than primary care practitioners.

Abbreviations: GP, general practitioner; ARI, acute respiratory infection.

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Conclusions: This study extended our understanding of how health beliefs influence uptake of preventive measures during the Hajj, and the gaps in the provision of Hajj-specific health information to pilgrims.

1. Introduction

Each year, the Hajj pilgrimage to Mecca, Saudi Arabia attracts over 3 million people from over 180 countries [1]. Overcrowding during the pilgrimage increases the risk of infectious diseases transmission amongst pilgrims [2]. Studies show that acute respiratory infections (ARIs) are the most common health hazards among Hajj pilgrims [3,4], with pneumonia being the leading cause of hospital admission for this group [5—7].

To reduce the risk of ARIs during the Hajj pilgrimage, the Saudi Arabian national health authority requires a valid meningococcal vaccine certificate and recommends a range of other infection control measures [8]. Recommendations include other vaccines, such as seasonal influenza vaccine, and non-pharmaceutical measures, such as facemasks and hand hygiene.

In Australia, around 4500 Australian pilgrims attend the Hajj each year with limited published studies [9—12] and no studies of Australian Hajj pilgrims' preventive health knowledge, attitudes, and practices. Internationally, quantitative studies demonstrate variable uptake of recommended vaccines [13], facemasks and other preventive measures [14]. However, the reasons behind this variability remain unclear. To date only two quantitative studies have attempted to identify the reason behind lack uptake of vaccines. These studies found lack of vaccination knowledge and relay in body immunity associated with poor uptake of influenza vaccine [10,15]. Neither study explored the reasons underpinning these low rates of uptake and knowledge in any depth.

Our qualitative study represents the first steps in addressing this knowledge gap, aiming to explore the experiences of Australian Hajj pilgrims in their use of preventive health measures including vaccines, hand hygiene, facemasks, to control acute respiratory infections (ARIs), and to better understand the barriers and facilitators to the use of these measures.

2. Methods

2.1. Study design

Face-to-face in-depth interviews were conducted in Sydney, New South Wales (NSW), Australia. Half (49.6%) of Australia's Muslim population reside in NSW, with the majority living in Sydney [16]. Face-to-face semi-structured interviews are considered the method of choice where an in-depth understanding into the dynamics of the behaviours of individuals is required [17].

2.2. Participants

Australian Hajj pilgrims over 18 years of age who had undertaken their pilgrimage between 2009 and 2012 were targeted. To ensure a diverse sample, participants were recruited through purposive sampling and snowballing from Sydney suburbs with high Muslim populations. These suburbs are highly multicultural, with residents of Arab, Asian and African background, who access community service centres or attend local mosques. Participants were recruited through several means including shop-front advertisements, street recruitment, mosques, community newsletters, websites of key Muslim associations and contact with individual Muslim community groups.

2.3. Data collection

Interviews were conducted between 22nd September 2013 and 25th October 2013. All interviews took place during business hours in closed meeting rooms at mosques or Muslim Association offices. Written consent was obtained prior to the interviews, and all were audio recorded. The interviews were conducted in either English or Arabic by the first author (AA), depending on the participant's preference.

A standardized topic guide was used to explore 5 major themes: (1) perception of risk and severity of ARIs during the Hajj; (2) knowledge, attitudes and practices around the use of preventative health measures including facemasks, hand hygiene, social distancing and influenza vaccination; (3) barriers and facilitators to using preventative health measures; (4) current preventive health information sources and their cultural appropriateness; and (5) barriers to and facilitators of access to health services prior to and during their travel to Mecca. Participants' experiences were the primary focus of the study, rather than their opinions.

2.4. Data analysis

Each interview was manually transcribed immediately after completion. Transcripts of completed interviews were closely and repeatedly examined guided by the five major themes identified above. To ensure analytical rigor, two researchers (AA and AH) independently constructed a code list of themes emerging from the data. Coding decisions were compared and crosschecked, and a final list agreed upon. Coded data were separated into code files, which were scrutinized, analyzed and summarized.