

AN ASSESSMENT OF THE 2012 HAJJ PROVIDING SERVICES,
PILGRIMS AND HAJJ AGENCIES STANCE
AN EXPLORATORY STUDY

A Thesis

Presented to

The College of Graduate and Professional Studies

Department of Applied Health Sciences

Indiana State University

Terre Haute, Indiana

In Partial Fulfillment

of the Requirements for the Degree

Master in Health Sciences with a concentration in Public Health

By

Samar Alshenawi

March 2014

Keywords: Hajj, Saudi Arabia, Mass gathering, WHO checklist, Public health.

COMMITTEE MEMBERS

Committee Chair: Shiaw-Fen Ferng, Ph.D., MPH.

Professor of Applied Health Sciences

Indiana State University

Committee Member: Eliezer Bermúdez, Ph.D., CP-FS

Associate Professor of Applied Health Sciences

Indiana State University

Committee Member: Lynn Duerr, Ph.D., RD, CD.

Associate Professor of Applied Health Sciences

Indiana State University

ABSTRACT

Annually, millions of Muslim pilgrims take the journey to Makkah, Kingdom of Saudi Arabia (KSA) to perform the holy pilgrimage. Due to the potential ramifications of such a large gathering, caring for the needs of pilgrims occupies the top priority among the Kingdom's concerns. This research was conducted to investigate the level of the health related services that were provided during the 2012 Hajj to the pilgrims and Hajj agencies to ensure the safety and accessibility of the public services. With the support from the Ministry of Hajj, 225 Saudi citizens residing in Jeddah, participated in 2012 Hajj answered and completed the study survey. A total of 48 employees who worked in Hajj agencies as a subsidiary to the Ministry of Hajj were also selected for the study and completed the survey. For the data collection, electronic questionnaires were provided to both pilgrims and Hajj agencies. The collected data was analyzed using SPSS 20.0 program. The study aimed to evaluate the new preparedness plan for the event and provide feedback for decision makers. The results showed that on average the majority of pilgrims were satisfied with the overall services (85%). Moreover, on an average 76.8% of the pilgrims were satisfied about the health and the accommodation services in 2012 Hajj. However, there was no significant difference of satisfaction on the overall services in various age groups but there was significant difference in health and general services among various educational levels ($p=0.034$). Similarly, on average the majority of the agents were satisfied with the overall services during Hajj 2012 (83.1%) but there was no significant difference on overall service satisfaction among agents having different educational levels.

ACKNOWLEDGMENTS

At the onset, I would like to express my sincere gratitude to my thesis advisor Professor Shiaw-Fen Ferng whose expertise, understanding, motivation and encouragement, and patience, added considerably to my graduate experience. She provided me with necessary direction and technical support and became more of a mentor and friend, than a professor. The guidance and valuable feedback that I had from Dr. Ferng has enriched my experience in conducting this thesis.

Also, I would like to thank our department chair, Professor Eliezer Bermúdez who motivated and supported me throughout my graduate studies at ISU. I would also like to thank Professor Lynn Duerr for her tremendous support and encouragement. I will ever be grateful for their support and comments which helped me to complete this study.

I would also like to thank the Ministry of Hajj staff and the Hajj agencies who were supportive enough to participate in this research.

Last but not the least, I am proud to acknowledge the generous and enduring support and prayers from my mother, father, sisters, and brothers during this work. I dedicate this thesis to them. Above all, I thank Almighty Allah for giving me such an opportunity to work on this research paper.

TABLE OF CONTENTS

COMMITTEE MEMBERS	ii
ABSTRACT.....	iii
ACKNOWLEDGMENTS	iv
LIST OF TABLES.....	ix
INTRODUCTION	1
Statement of the Problem.....	1
Research Question	2
Research Hypotheses	2
Significance of the Study.....	2
Limitations	3
Delimitations.....	4
Assumptions.....	4
Definition of Terms	5
Mass gatherings (MGs)	5
Ministry of Hajj.....	5
Ministry of Health	5
Mina Valley.....	5
Muzdalifah	5
Arafat.....	5
REVIEW OF THE LITERATURE	7
Literature Search Method	7
World Health Organization and Mass Gatherings.....	8

The Hajj Collaboration	8
Hajj Rituals	9
Guidelines of Islam	10
Hajj Journey	10
Planning and Organizing Hajj.....	11
Hajj: Intro to Potential Health Risks.....	12
Historical Standards: Hajj of 2011.....	12
Ministry of Hajj	13
Connecting with the People	14
Incoming Travelers	15
Health Provisions.....	15
Ministry of Health	16
Hajj 2010: Health Statistics	16
Vaccinations for Hajj	17
Health Recommendations during Hajj	18
Safety: Preventative Measures.....	19
The Most Common Health Risks during Hajj	20
Influenza.....	20
Climate Related Health Risks	21
Heat Exhaustion and Sunstroke Injuries	21
Sources of Public Health Education	22
Media Involvement	24
Controlling Potential Problems.....	24
WHO Standards	25
WHO and Saudi Government Cooperation	25
Preview of the Lancet Conference of 2010	26
METHODOLOGY	27

Subjects.....	27
First: Pilgrims Questionnaire Distribution.....	27
Second: Hajj Agencies Questionnaire Distribution.....	28
Survey Instruments.....	30
Questionnaires.....	30
Data Analysis.....	32
Descriptive Statistics.....	33
Inferential Statistics.....	33
Institutional Review Board (IRB) Approval.....	33
RESULTS.....	34
Pilgrims' Satisfaction about Overall Service.....	34
Pilgrims' Satisfaction about the Health and Accommodation Services.....	36
Pilgrims' Satisfaction on the Medical Preparedness Plan.....	38
Pilgrim's Satisfaction about the Health Education and Safety Awareness.....	39
Pilgrims' Satisfaction about Media Services.....	41
Agencies' Satisfaction on the Overall Services.....	42
Agencies' Satisfaction about Emergency Policy Issues.....	44
Agents' Satisfaction about the General and Medical Operational Issues.....	46
Agencies' Satisfaction about the Education, Awareness, Training, Promotional Campaigns.....	48
Agencies' Satisfaction about Communication Services.....	50
Agencies' Satisfaction about Media Services.....	51
DISCUSSION AND RECOMMENDATION.....	53
Recommendations for Future Studies.....	58
REFERENCES.....	59
APPENDIX A: PILGRIMS QUESTIONNAIRE.....	65

APPENDIX B: AGENCIES QUESTIONNAIRE.....	70
APPENDIX C: PILGRIMS QUESTIONNAIRE_ARABIC COPY	76
APPENDIX D: AGENCIES QUESTIONNAIRE_ARABIC COPY	81
APPENDIX E: INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL.....	86

LIST OF TABLES

Table 1. Pilgrims' Satisfaction about the Overall Services that were Provided by the Saudi Government in 2012 Hajj.....	34
Table 2. Pilgrims' Satisfaction about the Health and Accommodation Services in Hajj 2012.....	36
Table 3. Pilgrims' Opinion on the Medical Preparedness Plan Implemented during 2012 Hajj ...	38
Table 4. Pilgrims' Satisfaction about the Health Education and Safety Awareness during 2012 Hajj.....	39
Table 5. Pilgrims' Satisfaction about the Media Services Provided by the Government during 2012 Hajj.....	41
Table 6. Hajj Agencies' Satisfaction about the Overall Services that Were Provided by the Government in Hajj 2012.....	42
Table 7. Hajj Agencies' Satisfaction about the Policy Issues During Different Emergency Situations in Hajj 2012.....	44
Table 8. Agents' Satisfaction about the General and Medical Operational Issues during 2012 Hajj.....	46
Table 9. Hajj Agencies' Satisfaction about the Education, Awareness, Training, Promotional Campaigns Provided by the Government during 2012 Hajj.....	48
Table 10. Hajj Agencies' Satisfaction about the Services Provided by the Government in Communicating Between Different Agencies and Organizers during 2012 Hajj.....	50
Table 11. Hajj Agencies' Satisfaction about the Media Services Provided by the Government during 2012 Hajj	51

CHAPTER 1

INTRODUCTION

The annual holy Hajj event is one of the main obligations in Islam. It is the obligation that every Muslim has to make at least once in a lifetime, if a person can afford it (Media committee of the Islamic pilgrimage, 2012). Every year the government of Saudi Arabia hosts the biggest event of a mass gathering among the Muslim communities from all over the world. The WHO defined mass gatherings (MGs) as events where more than 1,000 people are congregated at a specific location for a defined period of time (WHO, 2008). With this huge number of people incoming to the same place, the city of Makkah faces many problems that are associated with arranging this event. Some of these problems are health problems, traffic congestion and issues, change of weather and heat exhaustion cases, etc. The investigator wanted to find whether there is proper planning and preparation taken by the Saudi government to arrange such a mass gathering like Hajj. An article by The Lancet medical journal (The Lancet, 2012) stated “what is currently missing is an evidence base for planning MGs.” The government should be prepared to mitigate such problems while arranging such a mass gathering and this study will help the government to take appropriate actions during future Hajj events.

Statement of the Problem

To provide better services to the pilgrims, the Saudi Arabian government started a new protocol in 2012. This study was built after the new protocol and it aimed to assess the

protocol. For this, the researcher intended to evaluate the newly implemented protocols that the government started in 2012. Therefore, an assessment of the quality of the services and health facilities plans that were provided to the respected pilgrims during the event was necessary. The results of the assessment would also help the Saudi government prepare the necessary action plans for future Hajj.

Research Question

Were pilgrims and Hajj agencies satisfied with the Hajj services provided and delivered by the Saudi government and its authorities?

Research Hypotheses

Both pilgrims and Hajj agencies were satisfied with the overall services provided by the Saudi government and its authorities in 2012 Hajj.

Significance of the Study

Hajj is a holy event that happens every year in the Kingdom of Saudi Arabia. This study was important because it evaluated the new preparedness plan and provided valuable input to the government of Saudi Arabia. It will also help the Saudi government to improve the quality of Hajj services, expand it to accommodate the needs of the public, and develop more effective strategies to control emergency circumstances such as an epidemic.

Many studies discussed the effectiveness of Hajj agencies services and/or the current services that were provided by the government (Al Otaibi & Kabash, 2010; Al Sekaiti & Choudhry, 2010). However, none of these studies used the WHO checklist. The results from using this assessment tool, tailored from the World Health Organization mass gathering checklist (World Health Organization [WHO], 2011), would provide the Saudi government with necessary recommendations and suggestions for future Hajj planning.

This research study investigated the level of health services during the Hajj event. Also, this study assessed the government practices and provided feedback for decision makers. The feedback will help the government improve the quality of the Hajj services by overcoming the weaknesses of their practices, if any, and develop more effective strategies wherever necessary.

Limitations

1. There is a shortage of academic research that is conducted for mass gatherings in Saudi Arabia. This can affect the literature review and hinder obtaining a clear picture of the situation.
2. The researcher was in a different location when conducting this research study. Using internet, phone, and sometimes personal communication was necessary to conduct this study.
3. The survey targeted responses from the proposed numbers of 1,200 pilgrims residing in the city of Jeddah, Saudi Arabia who participated in the 2012 Hajj. It was a small number compared to the total number of pilgrims (3,145,221) from all over the world who participated in the 2012 Hajj.
4. People without internet access or who are computer illiterate were not included in the study.
5. Pilgrims without email addresses, also, were not included in the study.
6. This assessment study did not include all participants because citizens could perform the Hajj without registering in the Ministry of Hajj system, so actually there was no precise number.

Delimitations

1. The study sample was delimited to adult citizen pilgrims, 18 years old and older, who performed the 2012 Hajj.
2. To be included in the assessment study, participants had to be enrolled in one of the Hajj agencies during Hajj of 2012 and existed in the Ministry of Hajj system.
3. The verification of their residency was in the city of Jeddah, Saudi Arabia. The total number of survey forms was distributed to an estimate of 1,200 residents via emails.
4. The data collection took place during the summer from June through August of 2013 with the supposition that participants were available at that time.
5. Survey questions discussed general information about the pilgrim's knowledge and feedback from when they performed Hajj in 2012.
6. This study's questionnaire was implemented for the first time using the WHO checklist as an assessment tool.

Assumptions

These following assumptions were used to guide this study:

1. Participants had the ability to read and understand the survey instrument and complete it.
2. The participant would respond in an open and honest manner.
3. Participants had the basic computer skills and adequate internet access.
4. The participants' recall would be relatively correct since the survey was designed to measure the provided services to them by the Saudi government during 2012 Hajj.
5. The targeted population of this study was representative of pilgrims residing in Jeddah, Saudi Arabia.

6. Because of the religious and spiritual role of the Hajj and the difficulties that face the pilgrims to be able to perform it, pilgrims might be biased in this study.
7. The total number of pilgrims was an estimation based on what the Ministry of Hajj has provided based on personal communication.

Definition of Terms

Mass gatherings (MGs): Events where more than 1,000 people are congregated at a specific location for a defined period of time (WHO, 2008).

Ministry of Hajj: "The official authority directly responsible for all pilgrim affairs. It cooperates in this regard with the ministries and official agencies represented in the Supreme Hajj Committee" (Ministry of Hajj, 2011a).

Ministry of Health: The Saudi government health department; responsible for providing healthcare for citizens and visitors of the kingdom. The Ministry is also looking after the quality medical treatment in healthcare sectors and general hospitals as well as public events such as, Hajj.

Mina Valley: A valley near Makkah where pilgrims perform the ritual of stoning the Satan or the Devil on the last day of Hajj. Mina is known for the role it plays during the annual pilgrimage. In Mina, pilgrims stay in the tent cities which have been provided by the Saudi government in order to give temporary accommodation to millions of visiting pilgrims.

Muzdalifah: A valley between Mina and Mount Arafat in which pilgrims of Hajj spend the night in the open. It is the place where pilgrims gather pebbles to hurl at the Satan pillars of Mina (Ministry of Hajj, 2011b).

Arafat: The hill of Arafat which is also known as the Mountain of Mercy. It is where the Prophet Muhammad (peace be upon him) gave his last sermon to the Muslims who had accompanied him for the Hajj. Pilgrims need to spend the afternoon on Mount Arafat.

Hamlas: An Arabic term that represents the Hajj agencies that earn the Ministry of Hajj approval to serve the pilgrims and help them throughout the journey of Hajj.

CHAPTER 2

REVIEW OF THE LITERATURE

Literature Search Method

The literature review search targeted some specific databases that are aggregated by Indiana State University. The databases that were used in the search focused on health information for mass gathering events and public health related databases, such as the academic search complete, CINAHL, Health Source: Customer and Nursing/Academic edition, and Medline to search for previous studies that have been conducted for similar or/and relative topics.

Another information resource that was studied for this literature review was the World Health Organization (WHO) website for mass gathering medicine studies. This helped the investigator to comprehend and summarize the WHO checklist. The investigator also used various references to explain the journey of Hajj and the risk factors that might occur in similar situations of other mass gathering events. Besides, the investigator used the annual health statistic year book for 2009 throughout 2011 which was released by the Ministry of Health. To collect data from the Hajj research institute, the investigator used the Ministry of Hajj database (Ministry of Health, 2010).

Some local ministries used as sources for this literature review were Ministry of Interior Kingdom of Saudi Arabia, Ministry of Islamic Affairs, Endowments, Da`wah, and

Guidance. Key words used for search: mass gatherings, Saudi Arabia, Hajj, WHO checklist, public health services, public services, Hajj health risk, and lancet conference.

World Health Organization and Mass Gatherings

The WHO defined mass gatherings (MGs) as events where more than 1,000 people are congregated at a specific location for a defined period of time (WHO, 2008). As part of the WHO global health initiatives, it set up the standards for international compliance. Mass gatherings impact public health services and require a special attention during the event. The WHO also advises countries on special event medical cases to organize information on preventative measures, primary care, or hospital referrals to persons attending or participating in major sports, recreational, or political events (Green & Burnham, 1998). Their goals for public health at mass gathering events include preventing or minimizing the risks of injury or illness and maximizing the safety of participants. In order to achieve this, the WHO uses extensive planning and emergency management to address the challenges and complexities of mass events.

The Hajj Collaboration

The Hajj event has been perceptibly growing by 200,000 people every year (Memish, Stephens, Steffen, & Ahmed, 2012). The current number of pilgrims who performed Hajj in 2012 was 3,145,221 which included both citizens of Saudi Arabia (internal pilgrims) and international pilgrims (A. Abdullah, personal communication, January 30, 2013). The Saudi's Ministry of Health found that it was a fundamental step to share their knowledge and experiences in organizing a mass gathering with the WHO. However, the investigator wanted to find clear evidence whether a mass gathering like Hajj is well planned and organized by the Saudi authority or not. An article by *The Lancet* medical journal (The Lancet, 2012) stated that "what is currently missing is an evidence base for planning MGs." Due to lack of

evidence of a planned system to organize MGs, goals were set to create a series of six articles on mass gatherings. This project was accomplished in early 2012 (The Lancet, 2012). The project was a collaboration between the Saudi's Ministry of Health representatives and WHO representatives in order to turn health services during a mass gathering into a scientific discipline. It was also created to initiate a Global MG network led by Saudi Arabia, and to encourage individuals and institutions to exchange learning about MGs. The Saudi Arabian government and the WHO agreed to publish six articles in 2012 to disseminate the information they found.

Hajj Rituals

To understand the complexity and sensitivity of the situation during Hajj event, a brief description of the Hajj is necessary. The holy Hajj is seen as the most significant manifestation of the Islamic faith and unity. Hajj is a requirement for all Muslims. It is one of the main Pillars of Islam. Undertaking the Hajj is a compulsory duty for Muslims who are physically and financially able to make the journey to Makkah, Saudi Arabia. Muslim pilgrims gather in Makkah to perform rituals based on the guidance given by the Prophet Muhammad (Peace be upon him) during his last visit to the holy city. The holy Hajj takes place from the 8th through the 12th of Dhu al-Hijja, the last month of the lunar year. Annually, the Kingdom of Saudi Arabia (KSA) holds the largest public gathering on Earth: Hajj. There has been an increase in the percentage of annual participation of local and international pilgrims during the Hajj. According to the Central Department of Statistics and Information (2011), the total number of local and international participants during 2011 and 2012 Hajj were 2,927,717 and 3,145,221, respectively (A. Abdullah, in person interview, 2012).

Guidelines of Islam

There are several religious requirements that Islam promotes to pilgrims who are able to carry out the Hajj duties. One requirement is that a Muslim should be physically healthy and capable of undertaking the pilgrimage. Another requirement is that the participant should be an adult; however, there is no maximum age limit for the participants. These requirements are intended to exempt those who cannot endure the rigorousness of an extended travel. If someone is sick, crippled, or physically disabled and unable to handle the journey, a family member who is physically fit can perform the rituals on behalf of that person. Another rule is that a woman cannot travel alone. She must be accompanied by a male family member who is deemed suitable to take her. These rules are set in place to encourage the safest situation for the participants (Manasek, 2012).

Hajj Journey

Hajj occurs only once a year according to the lunar calendar. It follows a three day journey and begins upon the visibility of the *hilal*, a waxing crescent moon following a new moon. In 2012, Hajj took place between October 24 and 29. Every year the journey begins as pilgrims arrive in Jeddah, Saudi Arabia and are transported in groups, mostly via bus, to Makkah. The pilgrims are required to spend the day performing the Standing at Arafat and do tawaf, where they walk around the Kabah seven times in a counter-clockwise path. As a part of this ritual, the pilgrims also drink the holy water from the well of Zamzam, which is available throughout the mosque (Manasek, 2012).

The next step requires pilgrims to travel to Mount Arafat to pray and recite the Qur'an. After that they leave Arafat and go to Muzdalifah, an area between Arafat and Mina, they spend the night sleeping on the ground and in devotion of prayer. Then, they return to Mina and throw seven stones at the stone pillar of Aqabah that symbolizes Satan's temptation

of Abraham. At Mina, most of the pilgrims sleep in tents that stretch across the Mina Valley. The pilgrims then celebrate Eid Al-Adha, the biggest celebration for the Muslims. In this day they sacrifice a sheep or camel in honor of Abraham's sacrifice that God provided in place of his son. Eid Al-Adha is the festival which signals the culmination of the Hajj (Manasek, 2012). The sacrificial meat is cleaned, packaged, and given to the poor and those in need. Afterwards, the pilgrims return to Makkah and perform a final *tawaf* known as 'The Farewell' and then the journey back and forth between the hills of Al-Safa and Al-Marwah. This symbolizes the completion of the Hajj.

Planning and Organizing Hajj

Hajj is a mass gathering which requires planning and organization long before the event. Over the course of performing the rituals, many factors such as living conditions, sanitary conditions, public health, and food services must be successfully provided by different parties such as the government and private sectors in a timely and controlled fashion to handle the millions of visitors. Government Ministries, such as the Ministry of Health and the Ministry of Hajj, work together to establish guidelines and recommendations to manage the event; then they work with the private agencies to facilitate these guidelines. Many use private agencies or groups to ensure that living arrangements and basic needs are met during the journey. These groups are also in charge of their clients' travel plans. According to the Ministry of Hajj website, the agencies must meet the requirements in order to be approved as travel groups. Also, many charities and mosques sponsor individuals to attend the event. Therefore, organizing and managing such a mass gathering requires a lot of planning and preparation. The WHO had a similar experience with this kind of arrangements in 2010, when it supported the 2010 FIFA World cup South Africa (WHO, 2011). As a result, the

WHO can have an integral role in minimizing the health risks during Hajj, in conjunction with the KSA government (Ahmed, Barbeschi, & Memish, 2009).

Hajj: Intro to Potential Health Risks

During Hajj, there are many risks and related issues that should be taken care of by the organizing authority. The environmental conditions combined with the large crowds are challenges that need to be addressed. The numbers of pilgrims attending Hajj are overwhelming. Moreover, Makkah is located in a desert; the weather conditions range from very warm to hot temperatures throughout the year. The temperature typically varies from 66 °F to 110 °F (Weatherspark Beta, n.d.). During the event and while performing the rituals, pilgrims need to travel from one site to another which can explain the increasing cases of risks of dehydration and heat stroke.

Moreover, according to Hayashi (2010) additional health concerns are communicable diseases, such as influenza, non-communicable diseases, such as respiratory problems, poor sanitary conditions causing minor illnesses, and pedestrian crowd traffic, in addition to the obvious concerns posed by high-density crowded events. Trampling often occurs, as millions of people are walking back and forth performing the rituals on sites. With the heavy traffic flow, pedestrians are in close contact, immobilized, and compressed situations often occur. Crowds of this size are quite dangerous and difficult for security personnel to control. The implications of this include the easy spread of diseases and the dangers of bodily injury (Lund, Gutman, & Turris, 2011).

Historical Standards: Hajj of 2011

The KSA focused previous efforts on an array of issues, which are vital to ensure a successful Hajj. Most of these issues were related to infrastructure development as well as foundational problems, however, health issues were considered of lesser importance.

Standards for passes issued by KSA government include (but are not limited to): controlling the number of pilgrims, scheduling, flow channelization, managing crowd density at potential areas, controlling crowd transitions between events, enforcing pedestrian traffic regulations, controlling individual and group behavior, and controlling the use of roads (Barhameen, 2010) which partially has been covered in the mass gathering health series as well (McConnell, 2012).

The WHO recognized that health has not been a primary concern in the planning of Hajj, therefore, it encouraged the Saudi government to implement health standards more efficiently. Further results of the collaboration between the government of Saudi Arabia, Ministry of Health, and the WHO is a necessary step forward in order to establish a new scientific discipline of mass gatherings health (Al Rabeeah et al., 2012).

Ministry of Hajj

The Ministry of Hajj is the authority that is concerned with the implementation of the state policy connected with Hajj. It is the government body that coordinates with all other appropriate government authorities and sectors that are concerned with Hajj, and works with officials of various Islamic countries in the organization and arrangement of the Hajj event. The three branches of the Ministry (at Makkah Al-Mukarramah, Al-Madinah Al-Munawarah, and Jeddah) work together to arrange the plans for the Hajj season. The Ministry begins its preparations for the next Hajj immediately after the end of the previous years' event (Ministry of Hajj, 2011c).

The Ministry of Hajj makes preparations for the arrival of the Hajj participants and coordinates with the Ministry of Health and other Saudi government entities involved with provisions for the Hajj season. The Ministry of Hajj is primarily involved in the planning, implementation, administration, and control of the services required for Hajj. Muslim

participants come from all over the world with varying degrees of cultural awareness; therefore, it is the Ministry's duty to educate visitors and set standards and guidelines for all services provided during the rituals.

Connecting with the People

First and foremost, the KSA government must connect with the participants of Hajj to explain the services offered, to make the people aware of potential risks during Hajj, and also to prepare them for the journey that lies ahead. One of the primary means for the government to do so is the usage of internet. The increased percentage of Internet users among pilgrims to search for Hajj information over the past decade, has affected the public awareness towards the provided services during the event. This became an important factor, as noted further in the study, where public education becomes vital to the success of the pilgrimage. Looking at Saudi Arabia's numbers of internet users, more locals are spending time on the internet, and therefore have access to the information that prepares them for the Hajj journey. The number of internet users specifically searching for Hajj information was not available; however, one could judge from the nationwide figures. The statistical database on the number of internet users in Saudi Arabia increased over the past decade to reach 4,800,000 users by the end of 2006 (Internet.gov.sa, 2012). Since 2006, exact figures of internet users were not available, but based on the general worldwide trend it could be assumed that this figure raised significantly. Moreover, according to the World Bank (2012), the average number of internet users in Saudi Arabia has dramatically increased from 2.21% in 2000 to 41% in 2010 (World Bank, 2012). Currently, besides connecting with the pilgrims, internet is a mean of communicating information, statistics, and preparatory measures for Hajj.

Incoming Travelers

The KSA government establishes rules for visa attainment before visitors can participate in Hajj. The government is currently attempting to establish the legal rule that participation in Hajj cannot occur twice within a ten year time span. This is meant to limit the number of people who can attend during a particular Hajj, and therefore, to add another layer of prevention for the spread of diseases and the dangers posed by unmanageable mass gatherings. The Hajj visa program has certain limitations and standards established by the KSA government. According to these standards, travelers must carry vaccination certificates with them for inspection by the Saudi authorities at the port of entry in Jeddah (Ministry of Hajj, 2011d).

Health Provisions

The KSA government actively works with the WHO to establish and update the provisions for Hajj participants. By working with the WHO checklist, in combination with the Ministry of Health for KSA and Ministry of Hajj, the government can most effectively examine the problems experienced during Hajj and propose solutions for future Hajj. Over the past decade, the Saudi government has implemented various reforms to address the increased numbers in Hajj attendance, and the effects of this increase on availability and access to public health services such as transportation, new building infrastructure, health procedures, involvement of private sectors and agencies, and coordination with other countries.

Ministry of Health

The Ministry of Health establishes health guidelines and standards for all Hajj participants. The Ministry ensures that pilgrims follow basic health standards to prevent mass disease outbreaks from occurring. To do so, the Ministry concentrates on pre-Hajj requirements and recommendations for general health. The following are provided by the Ministry's website:

1. Visit your doctor before traveling
2. Take enough amounts of your medications
3. Wear a bracelet or carry an ID card if you suffer from chronic disease
4. Carry a detailed report about your disease, your treatment, and doses to help follow up on your case if needed
5. Ensure that your personal bag contains the necessary cleaning supplies like a towel, shaving razors, soap, toothpaste and toothbrush, umbrella, loose cotton clothes, and moisturizing creams
6. Ensure that your medical bag contains wound sterilization instruments, antipyretics and analgesic medicines. (Ministry of Health, 2011a)

Hajj 2010: Health Statistics

In the 2010 Hajj, certain diseases were more common and have made the health services providers take preventative measures to counter their spread. The most recent health statistics were made available by Memish (2010); the carrier rates for meningococcal disease (MCD) were as high as 80% due to intense overcrowding, high humidity, and dense air pollution. When rates of carriage are at such a level, the risk for MCD outbreaks becomes a real concern. The most frequently occurring non-communicable diseases were related to the respiratory system (60.8%) followed by musculoskeletal diseases (17.6%), skin diseases

(15.0%), and gastrointestinal diseases (13.1%). Pharyngitis and the common cold were the most common communicable diseases with 23.7% and 20.6%, respectively. Among the chronic diseases, diabetes and asthma were most common, with 2.6% and 2.5%, respectively (Memish, 2010).

Vaccinations for Hajj

Vaccinations are essential to protect against and limit the spread of infectious diseases. The Ministry of Health website has identified the main communicable diseases, which are most prevalent during Hajj season. The website also identifies who should take these vaccinations and when to take them.

According to the Royal Embassy of Saudi Arabia, Washington DC (2014) "The applicant must submit proof of vaccination for meningitis and ACYW135. For infants and children up to fifteen (15) years of age, a vaccination report is required for polio as well as meningitis and polio. Children over fifteen (15) years of age should present the same vaccinations requested for adults.

1. Meningitis and ACYW135.
2. The seasonal (or common) flu, which should be taken two weeks before applying for the visa.
3. The H1N1 flu, if a vaccine is made available before Hajj season, and should be taken two weeks before applying for the visa.
4. Infants and children up to fifteen (15) years of age should provide a vaccination report for meningococcal and polio.
5. Children above fifteen (15) years of age should present the same vaccinations requested for adults." (Royal Embassy of Saudi Arabia Washington DC, 2014).

In addition, the Ministry of Health has an active role in providing education and information to the public. The Media Information and Health Awareness Center, under the Media Relations and Health Awareness General Department, promotes “Pilgrims’ Health is Our Concern,” which is a campaign that allows callers to make inquiries about Hajj regarding health and public services (Ministry of Health, 2012a). Senior specialists are made available to answer questions related to their specific specialties. The service provides information on health requirements to be met by participants, common health trends, and communicable diseases most often recorded at Hajj, as well as instructional information to be followed during Hajj (Ministry of Health, 2012a).

Health Recommendations during Hajj

The Ministry of Health recognizes respiratory diseases, gastroenterology diseases, food poisoning, skin diseases, eye dryness, sunstroke and heat stress as the primary diseases which spread during the Hajj season. The Ministry recommends preventative measures as well as identifies symptoms associated with each disease. The Ministry also educates readers on general guidelines for health safety during Hajj. "Key recommendations that are mentioned in the ministry's website include:

1. Do not sleep on the sidewalks and roads, for the safety of pilgrims.
2. Do not stampede at times of overcrowding it puts everyone, especially the elderly, and women at risk.
3. Use the toilets when needed so as not to spread infectious diseases.
4. Avoid sacrifice only in unequipped places such as roads and near tents, this exposes everyone to diseases and bad odor.
5. Slaughter should be in the allocated places" (Ministry of Health, 2011b).

Safety: Preventative Measures

As previously discussed, the Ministry of Health, the Ministry of Hajj, in conjunction with other Saudi government organizations allocates many resources to prevent, as much as possible, health risks and dangers. There are various stoppages for rest and rejuvenation during the journey as well as first aid stations with ambulances to take those in need to the local hospitals. To run these stations, there are people trained specifically to work at Hajj which are knowledgeable about the dangers and are aware of the solutions. According to the Ministry of Hajj (2011a), the Saudi Arabian Scout Association plays an important role in managing these situations, such as controlling the crowds as a guide and answering the pilgrims if they have any inquiry.

In planning the Hajj, measures have recently been set in place for the reorganization of the local infrastructure to provide the pilgrims with their immediate needs. Preventive programs have been integrated with Hajj protocols combined with coordination with other health sectors (The Work of WHO, 2008).

Each year, the Ministry of Health launches multiple disease prevention campaigns, including the vaccination of personnel working at Hajj sites. More than thirteen epidemic investigation teams operate in the hospitals, primary health care centers, various Hajj sites and the two Holy Cities (Ministry of Health, 2012b).

Basic measures to combat the spread of disease and other potential health risks are continually being upgraded and improved. Sprinklers are placed atop 30-foot poles, which spread a light mist of water to provide coolness as heat stroke and dehydration are prevalent. Millions of containers of chilled water are distributed from refrigerated trucks located along the pilgrim route (Hyashi, 2010). Also, strict requirements for vaccination before Hajj

participation have evolved such as requiring proof of meningococcal vaccination within the past 3 years (Ministry of Health, 2011c).

"With mass gatherings potentially involving millions of people arriving at event sites from anywhere in the world, systems that can provide rapid health surveillance information are essential" (McConnell & Memish, 2010). Preventive measures were also tried in 2009 Hajj. McNabb (2010) advocated the use of mobile phones for collecting and transmitting incident reports. Chunara (2010) described how the Health Map internet-based surveillance technology has contributed to planning for the Hajj to ensure that preventative measures are indeed in place and being honored, the Supreme Hajj Committee coordinates the activities of various government ministries and agencies to ensure preventive measures. Meanwhile, the Ministry of Health oversees all medical services to make sure that preventative health measures are being implemented properly and that all personnel working during Hajj are informed of the needs.

The Most Common Health Risks during Hajj

Influenza

One of the most common health risks that the pilgrims can face during the Hajj season is influenza. Influenza during Hajj circulates between the crowds easily because of the large number of people who are coming from all over the world. Type A and B are the most common types (Ministry of Health, 2010). The government of Saudi Arabia is keen to detect any health issues that raise public concerns during Hajj. The Ministry of Health published in their annual health book (2010) about the high numbers of pilgrims who entered Makkah by airports, seaports, and land-ports. They also recorded individuals who were treated by a prophylactic medicine which shows the level of preparedness that the government planned to reduce the anonymity.

Climate Related Health Risks

Saudi Arabia's weather is an arid desert climate. The high temperatures and the minimal rainfall year round are typical for its location in the Middle East. During Hajj the pilgrims face a hot temperature during day time and the long walking distance can put the pilgrims at risk of sunburn, heat exhaustion, heat stroke and dehydration. At night time often the weather becomes cold and in winter, the average high temperature in Mecca drops to 33°C (Holiday Weather, 2012). This is why the Saudi government puts a lot of time and effort to prepare equipped accommodations and rest areas for the pilgrims. The Ministry of Health also educate pilgrims every year about the climate related health risks through TV, Hajj radio, and printed hand-outs which are translated to more than 14 different languages. For example, pilgrims are advised to rest, maintain good hydration by drinking plenty of liquids. During daytimes pilgrims are advised to seek shade where possible, use umbrellas and a sunscreen having a sun protection factor of 15 or higher.

Heat Exhaustion and Sunstroke Injuries

Heat illnesses contribute to significant morbidity and sometimes mortality among pilgrims. Sunstroke injuries are high during the Hajj season in places which are located outside the city where the pilgrims visit as a part of their journey and where there is limited shade.

Heat exhaustion is a condition where a person is exposed to high temperatures, specifically when combined with high humidity and strenuous physical activity. In severe conditions, some cases can be life-threatening. Yeo (2004) has stated the symptoms as fatigue or weakness, nausea and vomiting, headache, myalgia or muscle cramps, dizziness, irritability, orthostatic pulse and blood pressure changes, and tachycardia. Thus, temperatures

can easily be elevated more than 106 °F (41 °C), and sweating may or may not be present (Yeo, 2004).

The 2010 Ministry of Health annual report has stated the number of heat exhaustion and sunstroke injury cases. The report also showed that these numbers vary on a yearly basis depending on the pilgrim's awareness level and the injury occurs more in the places outside the city where the pilgrims visit as a part of the journey. The Ministry of Health in collaboration with the Ministry of Hajj is putting their efforts to educate the pilgrims about these common health injuries through educational advertisements on TV and through Hajj radio stations that broadcast in 14 languages including Arabic, English, French, Persian, Turkish, Hausa, Indonesian, Urdu, Bengali, Pashtu, Turkistani, Somalian, Swahili and Bambari etc. for more coverage.

Sources of Public Health Education

The public health education for Hajj usually takes place either before starting the Hajj journey, while pilgrims are in their home countries, or when they start the Hajj rituals. The host country, Saudi Arabia, also promotes public health education through television and radio broadcasting. Field Epidemiology Training Programs (2007), a paper that discussed the public health education for the International Arab pilgrims, highlighted the effects of the health education messages on pilgrims' practices towards health hazards during Hajj. The health education programs by the Saudi government target the International pilgrims to increase their awareness about the most common health hazards during Hajj. In that study, the pilgrims' knowledge was evaluated on different Hajj related topics, such as basic information about the validity of food, what to expect and how to act in crowded areas, personal hygiene, vaccination, and heat preventive measures etc. According to the report, approximately 64.6% received information in their native countries, 40.8% on their way to

Makkah, and 45.4% were educated by the Saudi authorities. Moreover, brochures were the most common channel that were used to deliver health messages for some Gulf countries while TV was the most common channel for other countries. Both TV and brochures were considered as means of mass communication, however, interpersonal communications such as lectures had the best effect on pilgrims' practices even though it was the one least used (Field Epidemiology Training Programs, 2007).

Other types of channels that can be considered as a source of public health information are the resident physicians in each *Hamlas* (local Hajj organizer). These physicians help to cover as many patients as possible and reduce the load on the ministry of health facilities on campus. Physicians from *Hamlas* cover the common emergency situations such as heat exhaustion, sunstroke, dehydration injuries, in addition to certain chronic diseases. Furthermore, according to the variability and the changes in the health hazards, and since the *Hamlas* physicians serve under the regulations and instructions of the Saudi Ministry of Health; each year those physicians support the ministry to spread public health messages to the pilgrims (Ministry of Health, 2012b).

In addition, security personnel and traffic police guide and help pilgrims to avoid mass rioting. These trained guards control the flow of pedestrian traffic and ensure the general safety of participants during their journey and at night in the tent areas. For communication purposes, telephone booths are located in all the pilgrimage sites, allowing for direct local and international calls. According to Barhameen (2010), the Saudi government created the Authority Development of Makkah City and the Holy Sites to focus on building the local infrastructure necessary to handle the amount of people visiting. This means that hotels, restaurants, local businesses, and stores have been built over the past few years.

Media Involvement

The Ministry of Culture and Information broadcasts the activities during Hajj season by television and radio. During Hajj, the Saudi TV channels telecast the Hajj proceedings. The programs focus on awareness, guidance and descriptions of the Hajj event. The Ministry of Telecommunications and Information Technology cooperates with the Ministry of Culture and Information to ensure the transmission of these television programs via satellite to the whole world (Chunara, 2010).

The Saudi Press publishes Muslim scholarly work regarding Hajj and religious duty. Moreover, it has extensive coverage of Hajj, including features, interviews, articles and commentaries.

To fulfill Hajj requirements of reaching Muslims all across the globe, the Minister of Culture and Information holds an annual ceremony in honor of the information officials from the Muslim countries who are members of press, radio and TV. The involvement of journalists is vital to recording the Hajj season for future improvements in health services. Moreover, media plays a crucial role in keeping the pilgrims informed and educated. Media sources act as an interlocutor between the government and the people.

Controlling Potential Problems

A mass gathering event like Hajj requires alternative security measures besides the preventive measures taken by the Ministry of Health and Ministry of Hajj in KSA. An alternative measure would address disease outbreaks or dire environmental conditions with adverse effects and would control the rioting crowds which are quite unpredictable. To handle these potential problems, the KSA arranges for emergency medicine stashes in addition to the typical provisions. Also, they have installed closed circuit television cameras to collect footage from the crowds at various points along the Hajj journey. A crowd disaster

during the Hajj in January 2006, cost hundreds of pilgrims their lives (Chunara, 2010). Also, excess security personnel are on hand to guide the stop-and-go pedestrian traffic flow and to maintain crowd turbulence control.

WHO Standards

The WHO established standards to ensure that governments are putting in time, effort, and measures regarding mass gatherings during special events where risk of disease and injury exist. To ensure this, the WHO created a checklist for mass gatherings of all types, such as ritual gatherings and the Olympic Games (WHO, 2009). Through this checklist, the WHO works with the participating countries to define the local needs to prevent negative and detrimental disease outbreaks during the time the events are taking place (WHO, 2011).

WHO and Saudi Government Cooperation

To achieve a long-standing agenda for best practices for public health and services during the Hajj, the WHO has a checklist explaining the required infrastructure and institution provisions, as well as the services required during mass gatherings. For Hajj in particular, KSA and the WHO work together to assess and improve services offered during the pilgrimage. The WHO's "Mass Gathering Priority Disease Outbreak Checklist" (WHO, 2011) specifically addresses issues such as surge capacity, legal and policy issues, authority establishment for carrying out services, education for the public, surveillance of disease outbreaks, vaccination/antimicrobial access, and planning before the event .

Through this checklist, the venue/area of the Hajj is evaluated, as well as country institutions and services put in place to handle the massive crowds. The geographical location is an important factor as well (taking into account the season and weather), local health infrastructure, emergency response capacity, hygiene, food and water facilities, and accommodations are all addressed and, therefore, are a responsibility of the KSA

government. The WHO works directly with the Ministry of Health and Ministry of Hajj which are the KSA government offices responsible for Hajj preparation and public services (Memish & Al Rabeeah, 2011).

Preview of the Lancet Conference of 2010

The Lancet Conferences provided a way to convene key international experts to discuss and debate on public health issues. The KSA government sponsored the Lancet Conference: Mass Gathering Medicine from October 23 to 25, 2010 in Jeddah. The conference focused on mass gatherings of people as a challenge to global-health security.

CHAPTER 3

METHODOLOGY

The purpose of this chapter is to describe the methods and tools that were used in this study. The main elements in this chapter are: (1) Subjects (2) Survey instruments (3) Description of data analysis and (4) Institutional Review Board (IRB) approval.

Subjects

In this study, the investigator collected feedback from two groups; the pilgrims and the Hajj agencies' representatives via two separate sets of online questionnaires. The questionnaires were based on the mass gathering tool Checklist for Public Health Guidance for Provincial Level Preparedness (WHO, 2011), which was modified and summarized by the investigator.

First: Pilgrims Questionnaire Distribution

The goal of surveying the pilgrims was to gather information about the degree of satisfaction with the presented services and all medical, educational, and media services that were provided to them during the event. The first survey targeted the Saudi adult pilgrims who reside in Jeddah and performed Hajj in 2012. The total number of pilgrims who performed Hajj in 2012 was 3,145,221, which included both Saudi Arabian (internal pilgrims) and international pilgrims. The total number of pilgrims who reside in Jeddah, Saudi Arabia and performed Hajj in 2012 was 186,443. These numbers have been estimated by a representative from the Ministry of Hajj (A. Abdullah, in person interview, 2012).

However, the numbers of the internal pilgrims can differ from the actual size. It is hard to count the internal pilgrims because citizens can perform Hajj without passes and they can enter Makkah through various channels, such as airports, seaports, mass transit and through the city gateways; which resulted in them not being included in the total count. To reach the 95 percent confidence level, the number of respondents had to be a minimum of 383 respondents (Creative Research System, 2012). However, for a better result, 1200 pilgrims who resided in Jeddah and were registered for 2012 Hajj were randomly selected from the Ministry of Hajj database to receive the questionnaire. The email contained a brief explanation of the purpose and the procedures of this survey (Appendix A) and the URL of the online survey which was stored in the Qualtrics system of Indiana State University's server. An Arabic version of the survey was provided for this study as well (Appendix C). The Dean of the Custodian of the Two Holy Mosques Institute for Hajj and Umrah Research was the entity that assisted with data collection.

One week after the first email, two consecutive follow up emails were sent separately with one week between them to the 1200 pilgrims randomly selected at the beginning of the research.

Second: Hajj Agencies Questionnaire Distribution

The goal of this survey was to collect feedback from the Hajj agencies' representatives who worked hand-in-hand with the pilgrims and followed the instructions that were presented by Saudi authorities such as the Ministry of Hajj and the Ministry of Health during the Hajj event. The public relations (PR) department in each agency controls and coordinates the messages, health information, and directions from the higher authorities to the public. PR employees work with the Saudi authorities to facilitate a smooth Hajj and also have immediate contact with the pilgrims during the Hajj season. Because of the departments'

natural tasks, the investigator chose to collect the information from the PR department for this study.

The services provided by the Hajj agencies included assisting the pilgrims in performing their rituals of Hajj, providing accommodations such as place to stay, food, and drinks throughout the journey of Hajj, and any other services that included map directions or health and hygiene instructions, educational materials which were given by the Saudi health ministry and/or other government authorities. There are about 24 Hajj agencies, which are located in the Makkah region (Ministry of Hajj, 2012). The researcher could not have direct access to recruit these participants from the Hajj agencies. The Dean of the Custodian of the Two Holy Mosques Institute for Hajj and Umrah Research was the entity that assisted with data collection.

The online survey was sent to the public relations department of each of those agencies. A simple random sampling was used to recruit the participants from the Hajj agencies' database. The questionnaire was completed by two employees, which included the manager and assistant manager of that department, who coordinates the services in their stations between the agency and the Saudi authorities. Forty eight emails were sent to the representatives of Hajj agencies. The expected total number of respondents for this questionnaire was 48 representing the Hajj agencies.

The email contained a brief explanation of the purpose and the procedures of the survey and the participants' right if they decided to participate (Appendix B) and the URL of the online survey in the Qualtrics system of Indiana State University's server. Participants were asked to complete the survey and to submit through Qualtrics system. An Arabic version of the survey was provided as well (Appendix D). The expected participant rate was about 48 agents.

One week after the first email, two consecutive follow up emails were sent separately with one week between them to 48 agents randomly selected at the beginning of the research.

Survey Instruments

Two separate surveys were adapted from the WHO Checklist for Public Health Guidance - Provincial Level Preparedness (WHO, 2011) for both groups; the pilgrims and the agencies' representatives for analysis. The respondents were asked for their personal feedback and reflections regarding the services provided by the Saudi government during Hajj of 2012 in Makkah.

The World Health Organization suggested a couple of improvements on the public health systems, including the coordination and interdisciplinary approaches required to address the range of public health risks during an international mass gathering. The agreed amendments between the two sides focused on the policies and guidance manuals, education and awareness programs, the public services in general, emergency plans, and others that consist of encouraging national and international universities and authorities to conduct research in this field. The investigator used two separate questionnaires that reflect the feedback from both groups with different backgrounds and views. Some operational questions, which asked about the governments' new guidelines, were asked on the Hajj agencies' questionnaire to agents who were working hand-in-hand with the authorities.

Questionnaires

The study instrument was a web-based questionnaire. Both questionnaires were an adaptation from the adopted mass gathering tool Checklist for Public Health Guidance for Provincial Level Preparedness developed by the WHO (2011) and rephrased by the investigator based on the contents and the feedback from the Ministry of Hajj, Ministry of

Health, Deputy Ministry for Pilgrims, and General Directorate for Internal Pilgrimages. The pilgrim's questionnaire consists of the following sub-categories:

1. The services satisfaction, which asked about how satisfied the pilgrims were with the service that were delivered to them;
2. Health and general services, this section asked about how satisfied the pilgrims were with the general services and medics;
3. Medical preparedness plan, which illustrated the vaccination preparedness plan that was modified by the Saudi Health authorities;
4. Education and awareness, which measured the pilgrimage's level of understanding of the public health information that is needed in such mass gathering situations. It also measured the Ministry of Health efforts in this regard;
5. Media, which would be helpful to detect the most effective media information that was delivered during the event; and
6. Demographical information, which indicated (the age, gender, educational level, and income status of the participant). The demographic information was necessary to understand the population.

The agency's questionnaire consists of the following sub-categories:

1. The services satisfaction, which asked about how were the government's readiness plans during and after the event, also, how the services were prepared, operated, and delivered to the pilgrims;
2. Policy issues section asked about agency's organizational system, for example do they have a clear idea about their tasks and responsibilities;

3. Operational issues (for the agencies and for the medical departments), these two sub-sections asked about if the agency received the information necessary in case of epidemic and/or if it was prepared to contact the public health authorities to help in controlling the situation;
4. Education and awareness section investigated if the agency had the necessary public health information about Hajj and if they educated their employees and their pilgrims about personal hygiene, infection diseases, and environmental injuries topics. This section was very important to measure the efforts that agencies can put in awareness and prevention programs;
5. Management and communications, this section was very important because it provided information about the management by government during the event. It also asked about the communication between different Hajj agencies and the government sectors and authorities.
6. Media, asked about how media could be helpful during Hajj, it also asked about the most effective and popular type of media; and
7. Demographical information, which indicated (the age, gender, and educational level). The demographic information was necessary to understand the population.

Data Analysis

The data was collected and stored through a secure data base maintained by Indiana State University and used solely for research purposes only. To secure the confidentiality of participants, the IP address was not collected while taking the survey.

The SPSS 20.0 program (IBM, 2012) was used for data analysis as follow:

Descriptive Statistics

Most of the data were collected as Likert scale variables. The basic descriptive statistics was calculated and presented.

Inferential Statistics

Statistic hypothesis test, for variables with more than two groups, such as age groups, education, and income levels, one-way ANOVA was used. The significance level for the hypothesis tests was set at 0.05.

Institutional Review Board (IRB) Approval

Upon the approval of this proposal by the thesis committee, this research protocol and the questionnaires (in both English and Arabic) were submitted to the Institutional Review Board (IRB) at Indiana State University for approval. The researcher was granted an approval from the IRB in September 2013 with approval number [490308-1] (see Appendix E) and upon this approval, the researcher conducted the study.

CHAPTER 4

RESULTS

In this chapter, the researcher explains the findings of the web-based questionnaires that were completed for this study. The researcher analyzed age group, educational level, and income status with all dependent variables; however, in the results section the researcher showed the analysis between one independent variable with one dependent variable. This chapter included findings of two separate questionnaires, pilgrims and agencies as follows:

Pilgrims' Satisfaction about Overall Service

Table 1

Pilgrims' Satisfaction about the Overall Services that were Provided by the Saudi Government in 2012 Hajj

Services Satisfaction		Likert Scale Items (% Respondents, N=225)				
		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean \pm SD
1	I am satisfied with the information center services especially when having any question or inquiry during the event. The organizers such as (agencies, police, medics...etc.) were very helpful and answered my questions.	27.0	61.6	8.1	3.3	1.88 \pm 0.69
2	I am satisfied with the services and the performance of the police officers, the security of the event, and other related authorities during the Hajj of 2012 (for example: the performance of the tent city security).	30.0	57.1	11.4	1.4	1.85 \pm 0.67
3	I am satisfied with the controlling authority such as police and security authorities over in-province, out-of-province modes of transportation (e.g., airplanes, trains or metros, ships, buses, and highways).	21.0	52.4	21.4	5.2	2.11 \pm 0.79
4	The sites I have been-in were very organized and prepared in advance by the local authorities who are also involved in maintaining public order in which sites were ready for us to perform smooth Hajj.	26.7	62.9	10.0	0.5	1.84 \pm 0.60
5	I believe that the government has well prepared the local authorities to be ready in-case of an emergency during the event such as trampling cases and environmental heat injuries.	28.8	57.5	13.2	0.5	1.85 \pm 0.65
Composite Score						8.88 \pm 3.22*

Note: Services satisfaction composite score range 5 - 20 (The smaller the number, the stronger applicants agree)

*p=0.340 (ANOVA test among age groups). The significance level is 0.05.

From Table 1, the results showed that the majority (88.6%) of the pilgrims who took part in the 2012 Hajj were satisfied with the information center's services especially when having any question or inquiry during the event. They were also satisfied (88.6%) with the services provided by the organizers such as (agencies, police, medics...etc.). The results also reflected from Likert scores that pilgrims agreed or strongly agreed with satisfaction on services provided by the information center (1.88 ± 0.69), and the services provided by the organizers (1.88 ± 0.69). However, this showed that authorities still have room to improve the services to ensure the best satisfaction for the future pilgrimage.

During Hajj, security is an important factor to perform a safe pilgrimage. From Table 1, results showed that most (87.1%) of the pilgrims were satisfied with the services and the performance by the police officers, with the security of the event, and other related authorities during the Hajj of 2012.

The results showed that the majority (73.4%) of the pilgrims were happy with different modes of transportation. They were also satisfied with the security and guidance provided by the authorities. However, a good number of pilgrims disagreed (26.6%) with the satisfaction about transportation service during 2012 Hajj. Therefore, even though most of the people were satisfied, it was suggested that there are still works to do to ensure better security during future Hajj events.

Also, most of the pilgrims (86.3%) agreed that the government prepared the local authorities well enough to be ready in case of an emergency such as trampling cases and environmental heat injuries etc. during the Hajj 2012.

The range of composite score for the services satisfaction was from 5 to 20. The smaller the composite score represented the stronger satisfaction of the service. The ANOVA results showed that there was no significant difference in service satisfaction composite score

among various age groups ($p=0.34$). However, it seems that the pilgrims in the 18-25 age group had the highest satisfactory service score (7.94 ± 3.88 , $n=36$) compared to the 36-45 age group with the lowest satisfactory score for service (9.54 ± 2.40 , $n=56$).

Pilgrims' Satisfaction about the Health and Accommodation Services

Table 2

Pilgrims' Satisfaction about the Health and Accommodation Services in Hajj 2012

Health and Accommodation Services		Likert Scale Items (% Respondents, N=225)				
Item		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean \pm SD
1	The sites that I have been-in (Mina, Arafat, and Muzdalifah) were provided with service facilities to arrange safe beverages and foods.	27.6	51.4	18.6	2.4	1.96 \pm 0.75
2	The sites that I have been-in (Mina, Arafat, and Muzdalifah) were provided with accommodation and hotel services to assure public comfort.	14.8	54.5	24.9	5.7	2.22 \pm 0.76
3	I got clear directions to the nearest temporary facilities that were used as medical emergency facilities.	17.5	60.2	19.0	3.3	2.08 \pm 0.70
4	I recognized prepared facilities for in-patient care services wherever pilgrims existed.	19.4	61.6	17.5	1.4	2.01 \pm 0.66
Composite Score						7.72 \pm 2.88*

Note: Health and Accommodation services composite score range 4 - 16 (The smaller the number, the stronger applicants agree)

*** $p=0.034$ (ANOVA test among educational levels). The significance level is 0.05.**

Health and accommodation services are vital during a Hajj event. In terms of health and accommodation services valuable feedback was received from the study. They are mentioned in the following:

Even though the majority (79%) of the pilgrims agreed that Hajj sites they visited were provided with necessary beverages and food, the results showed that 21% of the respondents did not agree with this statement. It suggested that more attention should be given to the availability of enough food and beverages for the pilgrims during future Hajj.

Residence service is very important during Hajj. It was found that the majority (69.3%) of pilgrims were satisfied with the accommodation and hotel services provided during 2012 Hajj. However, 30.6% pilgrims did have problems with accommodation and hotel services in major places like Mina, Arafat and Muzdalifah. Therefore, the Saudi

government should ensure a better accommodation service for the pilgrims for future Hajj events.

Every year a lot of pilgrims participate in the Hajj event. Due to change of weather, heat exhaustion, flu, cold and other diseases, pilgrims get sick during the event. A good emergency medical support is necessary for the pilgrims. From Table 2, the results showed that most (77.7%) of the pilgrims responded that they got clear directions to have the services from the nearest emergency medical services.

The range of composite score for the health and accommodation services was from 4 to 16. The smaller the composite score represented the stronger satisfaction of the service. The ANOVA results showed that there was significant difference in health and accommodation services satisfaction composite score among educational levels ($p=0.034$). It showed that pilgrims with high school degrees had the highest satisfactory score with the health and accommodation services (6.59 ± 3.0 , $n= 37$) as compared to pilgrims with degrees that were less than high school with the lowest satisfactory score for health and accommodation services (8.89 ± 1.84 , $n= 18$). Therefore, there is a scope of work for the Saudi government to improve health and accommodation services during future Hajj.

Pilgrims' Satisfaction on the Medical Preparedness Plan

Table 3

Pilgrims' Opinion on the Medical Preparedness Plan Implemented during 2012 Hajj

Medical Preparedness Plan		Likert Scale Items (% Respondents, N=225)				Mean \pm SD
Item		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	
1	I was informed about the necessary and required vaccinations that I needed to take.	38.9	51.9	7.7	1.4	1.72 \pm 0.66
2	The availability of all required vaccinations was prepared in advance in clinics before the event.	32.5	52.2	11.0	4.3	1.89 \pm 0.77
Composite Score						3.33 \pm 1.52*

Note: Medical preparedness plan composite score range 2 - 8 (The smaller the number, the stronger applicants agree) * $p= 0.566$ (ANOVA test among incomes). The significance level is 0.05.

According to the data (Table 3), a majority of the pilgrims (90.8%) were informed about the necessary and required vaccinations that were required during 2012 Hajj. Most of the pilgrims (84.7%) also agreed that the required vaccinations were prepared in advance in the clinics before the Hajj started.

The range of composite score for the medical preparedness plan was from 2 to 8. The smaller the composite score represented the stronger satisfaction of the preparedness plan. The ANOVA results showed that there was no significant difference in the awareness of medical preparedness plan satisfaction composite score among various income levels ($p=0.57$). Even though the statistical test results were not significant, it was noted that pilgrims with the 4,000 to 10,000 Saudi Riyal income group (equal to 1066.7 to 2666.7 U.S. dollar) had the highest satisfactory score (3.17 ± 1.45 , $n= 71$) as compared to the 2,000 to 4,000 Saudi Riyal income group (equal to 533.3 to 1066.7 U.S. dollar) with the lowest satisfactory score for medical preparedness plan (3.52 ± 1.64 , $n= 52$).

Pilgrim's Satisfaction about the Health Education and Safety Awareness

Table 4

Pilgrims' Satisfaction about the Health Education and Safety Awareness during 2012 Hajj

Health Education and Safety Awareness		Likert Scale Items (% Respondents, N=225)				
Item		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean \pm SD
1	The agency provided me the information needed in case I have or someone I am near to has an infectious disease such as (H1N1 and Dengue fever).	18.5	51.7	23.9	5.9	2.17 \pm 0.8
2	I have been provided with brochures or pamphlets regarding the public safety. For example: site maps that showed how to act and where to exit in emergency situations such as, fire, building collapse...etc.	17.7	52.7	23.6	5.9	2.18 \pm 0.79
3	The brochures provided me with easy guidelines of how to maintain my safety and the public safety as well.	19.9	53.4	21.4	5.3	2.12 \pm 0.78
4	I received the most current information, by my agency, regarding the prevention of transmitted diseases.	20.9	49.5	23.3	6.3	2.15 \pm 0.82
Composite Score						7.85 \pm 3.44*

Note: Education and awareness composite score range 4 - 16 (The smaller the number, the stronger applicants agree)
*p= 0.170 (ANOVA test among educational levels). The significance level is 0.05.

Awareness and information is very important for the pilgrims during Hajj. The pilgrims must know the rules, regulations, and necessary information to perform a safe and sound Hajj. Seventy percent of the pilgrims agreed that the agencies provided them with the information needed in case they or someone near to them had an infectious disease such as (H1N1 and Dengue fever).

Most pilgrims (70.4%) agreed that they were provided with brochures or pamphlets regarding the public safety. For example: site maps that showed how to act and where to exit in emergency situations such as, fire, building collapse, pregnancy and trampling during stampede etc. The majority (73.3%) of the pilgrims also agreed that they were provided with brochures with easy guidelines about how to maintain their safety and public safety during Hajj. However, 26.7% pilgrims did not agree with the availability of such brochures carrying important information and guidelines. Therefore, the Saudi government should ensure enough

availability and dissemination of brochures and other means of information for the pilgrims during future Hajj.

The majority (70.4%) of the pilgrims also agreed that they received the most current information regarding the prevention of transmitted diseases from their agencies and again a good number of pilgrims (29.6%) disagreed with this statement. Therefore, this study would like to draw the attention of the Saudi government to put more effort in disseminating the current information that would help the pilgrims in future Hajj events.

The range of composite score for the health education and safety awareness services was from 4 to 16. The smaller the composite score represented the stronger satisfaction of the health education and safety awareness services. The ANOVA results showed that there was no significant difference in health education and safety awareness services satisfaction composite score among various educational levels ($p=0.17$). However, it seems that the pilgrims with a graduate level degrees (masters and/or doctoral) had the highest satisfactory service score (6.93 ± 3.71 , $n= 30$) as compared to pilgrims who have degrees that are less than high school, which recorded the lowest satisfactory score for education and awareness services of (8.61 ± 1.29 , $n= 18$).

Pilgrims' Satisfaction about Media Services

Table 5

Pilgrims' Satisfaction about the Media Services Provided by the Government during 2012 Hajj

Media		Likert Scale Items (% Respondents, N=225)				Mean ± SD
		1: Very Useless	2: Useless	3: Useful	4: Very Useful	
1	During 2012 Hajj, how useful was the Hajj radio channel to provide Hajj related information?	2.1	14.9	58.5	24.6	3.06 ± 0.69
2	During 2012 Hajj, the Saudi TV channel broadcasted Hajj related information and interviews, how helpful was this information to you and your family (if any)?	3.1	11.8	46.7	38.5	3.21 ± 0.77
3	How helpful were the websites in answering your questions about Hajj?	1.5	14.9	60.0	23.6	3.06 ± 0.67
4	During 2012 Hajj, how useful were the brochures that were provided by the agency to you and your family (if any)?	0.5	11.3	66.2	22.1	3.10 ± 0.59
Composite Score						10.76 ± 4.49*

Note: Media composite score range 4 - 16 (The larger the number, the greater the media channels usefulness)

*p= 0.075 (ANOVA test among age groups). The significance level is 0.05.

Media like radio, television, print media, brochures and internet plays a vital role in a mass gathering like Hajj. From Table 5, the results showed that most (83.1%) of the pilgrims said that the radio channel was useful to provide Hajj related information. The majority (85.2%) of the pilgrims also agreed that the Hajj related information broadcasted by the Saudi channel was also helpful for them and their family.

Most pilgrims (88.3%) said that the brochures were helpful for them. The majority (83.6%) of them also said that the websites, which contained Hajj related information and guidelines were also helpful. However, 17% of the pilgrims viewed radio channel as a useless tool 16.4% of the pilgrims considered websites as useless tools. This suggests that the Saudi government needs to maintain the good media work and also strengthen the usage of these media to ensure full satisfaction among the pilgrims.

The range of composite score for the influence of media services like television broadcasting, radio, Internet, information brochure etc. on the pilgrims was from 4 to 16. The

larger the composite score the more useful media channels were. The ANOVA results showed that there was no significant difference in media services satisfaction composite score among various age groups ($p=0.08$). However, it seems that the pilgrims in the 56-65 year old groups had the highest satisfactory service score (12.79 ± 2.16 , $n= 14$) as compared to the 66 and above age group, which recorded the lowest composite score for media services satisfaction (8.80 ± 5.93 , $n= 5$).

Agencies' Satisfaction on the Overall Services

Table 6

Hajj Agencies' Satisfaction about the Overall Services that Were Provided by the Government in Hajj 2012

Services Satisfaction		Likert Scale Items (% Respondents, N=48)				
Item		1: Yes	2: No	3: Don't Know		Mean \pm SD
1	The agency received clear information about any new regulations or protocols for the 2012 Hajj from the Ministry of Hajj.	79.2	12.5	8.3		1.29 ± 0.62
Item		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean \pm SD
2	The public health emergency plan for 2012 Hajj was applicable, realistic, and ready to use.	24.5	67.3	8.2	0	1.84 ± 0.55
3	The agency has a working disease surveillance system for reporting health data to the Ministry of Health to track their pilgrims.	20.8	58.3	20.8	0	2.0 ± 0.65
4	During 2012 the Saudi government provided all Hajj sites (Mina, Arafat, and Muzdalifah) with feasible service facilities for drinks and snacks that arrange safe beverages and foods for pilgrims.	32.7	55.1	12.2	0	1.8 ± 0.65
5	During Hajj 2012, the Saudi government provided all Hajj sites (Mina, Arafat, and Muzdalifah) with accommodation and hotel services to assure pilgrims comfort.	18.8	54.2	25.0	2.1	2.1 ± 0.72
6	The government had provided, prepared, and well-equipped facilities for outpatient and inpatient care for pilgrims.	24.5	59.2	16.3	0	1.92 ± 0.64
Composite Score						$1.67 \pm 0.77^*$

Note: Services satisfaction composite score range 5 - 20 (The smaller the number, the stronger applicants agree)
* $p= 0.551$. (ANOVA test among educational levels). The significance level is 0.05.

From Table 6, the results showed that most (79.2%) agents said that they received clear information about any new regulations or protocols for the 2012 Hajj from the Ministry

of Hajj. The majority (91.8%) of the agents also agreed that the public health emergency plan for 2012 Hajj was applicable, realistic, and ready to use.

Even though the majority (79.1%) of the agents agreed that the agency had a working disease surveillance system for reporting health data to the Ministry of Health in order to track their pilgrims, however, 20.8% of them disagreed with this assumption. Therefore, there is still a scope of improvement that can be done for the disease surveillance system to track health related data of the pilgrims.

The results of this survey also showed that 73% of the agents agreed on the availability of the necessary food and accommodation services during the Hajj 2012. They (83.7%) also agreed on the availability of facilities for outpatient and inpatient care for pilgrims in the Hajj sites of Mina, Arafat, and Muzdalifah that were provided by the Saudi government, Ministry of Hajj and its sectors.

Excluding the first question, the range of composite score for the services satisfaction was from 5 to 20. The smaller the composite score the stronger satisfaction of the services. The ANOVA results showed that there was no significant difference in service satisfaction composite scores among various educational levels ($p=0.55$). However, it seems that agents with diploma degrees (is an advanced degree after high school but less than undergrad in the Saudi Arabia's education system), had the highest satisfactory service score (1.49 ± 0.90 , $n=17$) as compared to agents who had graduate level degrees (masters and/or doctoral), which recorded the lowest satisfactory service score (2.00 ± 0.13 , $n=6$).

Agencies' Satisfaction about Emergency Policy Issues

Table 7

Hajj Agencies' Satisfaction about the Policy Issues During Different Emergency Situations in Hajj 2012

Emergency Policy Issues		Likert Scale Items (% Respondents, N=48)				
	Item	1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean \pm SD
1	All employees (including external experts) who agreed to serve pilgrims during the event had been assigned specific tasks according to their positions in your institute.	29.8	55.3	14.9	0	1.85 \pm 0.66
2	The Ministry of Health identified and assigned authorities in charge of coordinating different medical groups during an epidemic.	17.0	63.8	17.0	2.1	2.04 \pm 0.66
3	My agency had computerized records to keep track of the pilgrims suspected of having infectious disease, to help in data transmission, and also tracking and analysis during an epidemic.	25.5	36.2	34.0	4.3	2.17 \pm 0.87
4	My agency knew exactly what to do in case of an epidemic and was prepared to before the event.	23.4	53.2	19.1	4.3	2.04 \pm 0.78
Composite Score						1.80 \pm 0.81

Note: Emergency Policy Issues composite score range 4 - 16 (The smaller the number, the stronger applicants agree) *p= 0.86 (ANOVA test among educational levels). The significance level is 0.05.

From Table 7, it was found that most of the agents (85.1%) agreed on the fact that all employees (including external experts) who served pilgrims during Hajj 2012 had been assigned specific tasks according to their positions in the agency. There are 14.9% agents disagreed. Therefore, the researcher would like to comment that the agencies should ensure proper assignment of the duties within the agents.

Most of the respondents (80.8%) agreed on the statement that the Ministry of Health identified and assigned authorities in charge of coordinating different medical groups during an epidemic during Hajj 2012. However, there is a scope for the Ministry of Health to improve this service as 23.4% of the agents did not agree with the statement.

Most of the agents (61.7%) agreed that in terms of keeping computerized records to track the pilgrims suspected of having infectious disease, to help in data transmission, and to analyze the situation during an epidemic, the agencies had

necessary arrangements during Hajj 2012. However 38.3% of the agents disagreed with this statement. Therefore, the Ministry of Hajj should ensure the implementation of computer technology by the agencies during future Hajj events maintaining the WHO mass gathering event checklist.

The results showed that majority of the agents (76.6%) were confident about their preparation and agency's ability to handle an epidemic situation. However, there is a scope of improvement as 23.4% of the agents disagreed with the fact that their agencies knew how to act in case of an epidemic or they had the necessary preparation during the Hajj event.

The range of composite score for the emergency policy issues was from 4 to 16. The smaller the composite score represented the stronger satisfaction of the services. The ANOVA results showed that there was no significant difference in emergency policy service composite scores among various educational levels ($p=0.86$). However, it seemed that agents with graduate degrees (masters and/or doctoral) had the highest satisfactory service score (1.67 ± 1.1 , $n= 6$) as compared to agents who had diploma degree (is an advanced degree after high school but less than undergrad in the Saudi Arabia's education system), which recorded the lowest composite score for services satisfaction of (1.93 ± 0.64 , $n= 17$).

Agents' Satisfaction about the General and Medical Operational Issues

Table 8

Agents' Satisfaction about the General and Medical Operational Issues during 2012 Hajj

Operational Issues		Likert Scale Items (% Respondents, N=48)				
Item		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean \pm SD
Agency's operational issues						
1	I was aware of the final updated communicable diseases' list that includes all different types of diseases such as H1N1.	10.9	52.2	32.6	4.3	2.3 \pm 0.73
2	My agency had direct communication channels with the health authorities in charge such as the list of health care workers and institutions that would assist pilgrims during an emergency.	21.3	51.1	23.4	4.3	2.11 \pm 0.79
Medical operational issues						
3	I knew whether the Ministry of health had provided and implemented a vaccination system as part of the prevention plans for infectious diseases to help control an epidemic.	27.7	51.1	17.0	4.3	1.98 \pm 0.79
4	I had identified alternate facilities where overflow cases from hospitals and well persons needing quarantine can be cared for	32.6	43.5	19.6	4.3	1.96 \pm 0.84
5	Small clinics can receive new cases and treat people at-risk who were hard-to-reach during an outbreak	32.6	54.3	8.7	4.3	1.85 \pm 0.76
Composite Score						1.78 \pm 0.85*

Note: Operational Issues composite score range 5 - 20 (The smaller the number, the stronger applicants agree)

***p= 0.595 (ANOVA test among educational levels). The significance level is 0.05.**

Table 8 showed that even though the majority of the agents (63.1%) agreed on the statement that they were aware of the final updated communicable diseases' list that included all different types of diseases such as H1N1, a larger proportion of the agents (36.9%) disagreed with the same statement. This finding shows that not all agencies had the knowledge of the existence of information regarding communicable diseases. Thus, a direct communication from the Ministry of Health with Hajj agencies during future Hajj may improve the number of awareness of the resources.

It was found that the majority of agents (72.4%) agreed on having direct communication channels with the health authorities in charge such as the list of healthcare workers and institutions that would assist pilgrims during an emergency. However, 27.7% of the agents disagreed with this statement.

Medical operational issues section focused on the role of the Ministry of Health and clinics during the event. Table 8 showed that the majority of agents agreed that there was a ready vaccination system as part of the prevention plans (78.8%), alternate facilities for overflow cases (76.1%), and the availability of small clinics (86.9%). However, 13% of the agents did not agree with the availability of small clinics. It is suggested that medical operational issues can be improved for future Hajj events.

The range of composite score for the operational issues was from 5 to 20. The smaller the composite score represented the stronger satisfaction of the services. The ANOVA results showed that there was no significant difference in service composite scores among various educational levels ($p=0.60$). However, it seemed that agents with high school degrees had the highest satisfactory service score (1.60 ± 0.85 , $n= 12$) as compared to agents who had diploma degree (is an advanced degree after high school but less than undergrad in the Saudi Arabia's education system), which recorded the lowest composite score for services satisfaction of (2.01 ± 0.79 , $n= 17$).

Agencies' Satisfaction about the Education, Awareness, Training, Promotional Campaigns

Table 9

Hajj Agencies' Satisfaction about the Education, Awareness, Training, Promotional Campaigns Provided by the Government during 2012 Hajj

Education and Awareness		Likert Scale Items (% Respondents, N=48)				
Item		1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean ± SD
1	My agency had arranged educational materials for the media, providers, and the public in different languages and in forms suitable for limited literacy populations with the approval of authorities such as the Ministry of Health and the Ministry of Hajj.	26.1	56.5	10.9	6.5	1.98 ± 0.80
2	Training was given to all of our employees before the event. For example: how to act during the event also, in case of an emergency.	15.2	58.7	21.7	4.3	2.15 ± 0.73
3	I got the necessary information through training sessions, workshop or lectures regarding pilgrims' health related issues (e.g. personal hygiene, cases of infectious diseases, and environmental injuries...etc.)	28.3	50.0	10.9	10.9	2.04 ± 0.92
4	There were signs of health promotion campaigns.	26.1	43.5	28.3	2.2	2.07 ± 0.80
5	All sites within the event were very organized and prepared in advance, ready for us to help pilgrims to perform smooth Hajj by the local authorities.	34.8	52.2	8.7	4.3	1.83 ± 0.77
6	I have knowledge of prevention procedures (such as wearing protective masks in case of the spread of transmission diseases).	28.9	55.6	8.9	6.7	1.93 ± 0.81
7	Authorities had a strategy in educating pilgrims on an outbreak of disease that insured all pilgrims had their share of important information.	32.6	47.8	10.9	8.7	1.96 ± 0.89
Composite Score						1.73 ± 0.84*

Note: Education and Awareness composite score range 7 - 28 (The smaller the number, the stronger applicants agree) *p= 0.899 (ANOVA among educational levels). The significance level is 0.05.

Table 9 showed results in terms of education and awareness within the agents. It indicated 87% of the agents agreed that all sites within the event were organized by the local authorities and prepared in advance, ready for all subsidiary authorities such as Hajj agencies to help pilgrims to perform smooth Hajj. It was a good illustration of the fact that the Saudi government gave proper attention in preparing that event.

Table 9 also showed that the majority of the agents (73.9%) agreed on the statement that training was given to all of agencies employees before the event. However, 21.8% disagreed with this statement that they got the necessary information

through training sessions, workshop or lectures regarding pilgrims' health related issues (e.g. personal hygiene, cases of infectious diseases, and environmental injuries etc. Therefore, training for all the agencies should be ensured during future Hajj events to ensure smooth operation.

Majority of the agents (69.6%) agreed that there were signs of health promotion campaigns that were very important to ensure better health for the pilgrims. However, 30.5% disagreed that there were signs of health promotion campaigns. The Saudi government and its agencies should work together for future Hajj events and ensure a better health promotion campaigns.

The range of composite score for the education and awareness was from 7 to 28. The smaller the composite score represents the stronger satisfaction of the education and awareness services. The ANOVA result showed that there was no significant different in service composite scores among various educational levels ($p=0.899$). However, it seems that agents with high school education had the highest satisfactory service score (1.63 ± 1.03 , $n=12$) as compared to agents who are diploma holders, which recorded the lowest composite score for education and awareness (1.86 ± 0.56 , $n=17$).

Agencies' Satisfaction about Communication Services

Table 10

Hajj Agencies' Satisfaction about the Services Provided by the Government in Communicating Between Different Agencies and Organizers during 2012 Hajj

Management & Communications		Likert Scale Items (% Respondents, N=48)				
	Item	1: Strongly Agree	2: Agree	3: Disagree	4: Strongly Disagree	Mean ± SD
1	I was satisfied with the controlling authority such as police and security authorities over in-province, out-of-province modes of transportation (e.g., airplanes, trains or metros, ships, buses, highways).	30.4	41.3	23.9	4.3	2.0 ± 0.85
2	The agency had communicated and coordinated with other agencies that would assist each other in maintaining public order and enforcing control measures during an epidemic.	32.6	52.2	13.0	2.2	1.82 ± 0.72
3	There was a specific emergency-response plan which involved health care services to determine how to best prevent, control disease spread, and manage the health care of the population during an epidemic.	31.1	55.6	11.1	2.2	1.82 ± 0.69
4	There was an easy communication between us (as an agency) and the key individuals from Ministry of Health whom I would need to communicate with during an epidemic.	32.6	37.0	28.3	2.2	1.98 ± 0.84
Composite Score						1.68 ± 0.77*

Note: Management & Communications composite score range 4 - 16 (The smaller the number, the stronger applicants agree)

***p= 0.192 (ANOVA test among age groups). The significance level is 0.05.**

From Table 10, on average, the majority (78.2%) of the agents agreed with the statements made under the issues of management and communication. However, two of the statements showed the highest disagreement among the respondents. Respondents were not satisfied (28.2%) with the transportation and the controlling authority in and out of the province (e.g., airplanes, trains or metros, ships, buses, highways). They also showed disagreement (30.5%) on proper communication between the agency and the key individuals from the Ministry of Health with whom an agent would need to communicate during an epidemic.

Majority (84.8%) of the agencies agreed that the agencies had communicated and coordinated with other agencies that would assist each other in maintaining public order and enforcing control measures during an epidemic.

Majority (86.7%) of the agents agreed that there was a specific emergency-response plan which involved health care services to determine how to best prevent, control disease spread, and manage the health care of the population during an epidemic.

The range of composite score for the management & communications was from 4 to 16. The smaller the composite score represented the stronger satisfaction of the management and communications provided by the government. The ANOVA results showed that there was no significant different in service composite scores among various age groups ($p=0.19$). However, it seems that agents between 18 to 25 years old had the highest satisfactory service score (1.22 ± 0.85 , $n=8$) as compared to agents who were 26 to 35 years old, which recorded the lowest composite score for management and communications (2.02 ± 0.77 , $n=13$).

Agencies' Satisfaction about Media Services

Table 11

Hajj Agencies' Satisfaction about the Media Services Provided by the Government during 2012 Hajj

Media		Likert Scale Items (% Respondents, N=48)				Mean \pm SD
		1: Very Useless	2: Useless	3: Useful	4: Very Useful	
1	During 2012 Hajj, how useful was the Hajj radio channel to provide Hajj related information?	6.7	26.7	51.1	15.6	2.77 \pm 0.80
2	During 2012 Hajj, the Saudi TV channel broadcasted Hajj related information and interviews, how helpful was this information to you and your agency?	6.7	31.1	37.8	24.4	2.82 \pm 0.90
3	How helpful were the websites to answer your questions about Hajj?	2.2	13.3	48.9	35.6	3.20 \pm 0.73
4	During 2012 Hajj, how useful were the brochures that were provided by the Ministry of Health to the agency?	2.2	17.4	37.0	43.5	3.24 \pm 0.80
Composite Score						2.66 \pm 1.11*

Note: Media composite score range 4 - 16 (The larger the number, the more useful of the media)

* $p=0.547$ (ANOVA test among age groups). The significance level is 0.05.

Performance of media is very important during a Hajj event and the agencies had to play a major role here to inform and educate the pilgrims so that they could perform a comfortable Hajj. Table 11 compares different communication channels that were provided during the 2012 Hajj event to serve the pilgrims. These channels are radio channels, Saudi TV channel, websites, and brochures. The majority (84.5%) of the agents considered the websites as a useful media for information during 2012 Hajj. However, 37.8% of the agents considered the Saudi TV channel as a useless media for information. Therefore, the Saudi government should utilize the media efficiently to help the pilgrims during future Hajj events.

The range of composite score for the media satisfaction was from 4 to 16. The larger the composite score the more usefulness media channels were. The ANOVA results showed that there was no significant difference in service composite scores among various age groups ($p=0.55$). However, it seems that agents within the 46 to 55 age group had the highest satisfactory service score (3.14 ± 0.52 , $n= 7$) as compared to agents within the 18 to 25 age group, which recorded the lowest composite score for media (2.28 ± 1.497 , $n= 8$).

CHAPTER 5

DISCUSSION AND RECOMMENDATION

This was an exploratory study to assess the 2012 Hajj services provided from the eyes of pilgrims and Hajj agencies. The researcher looked for the opinion of both Hajj agencies and pilgrims of the 2012 Hajj to assess their satisfaction after the implementation of steps decided on the Lancet conference in Jeddah, Saudi Arabia. Based on the findings the researcher also wanted to give feedback to the Saudi government and organizing authorities regarding the successful implementation and management of future Hajj events.

There was limited literature regarding the preparation and management of Hajj. There was also limited literature regarding the satisfaction of the local Hajj participants. In the past, the Saudi government did collaborate with the WHO to implement certain steps in the WHO checklist for mass gathering events. Public health and security were part of the major concerns in the checklist. For instance, there are some required and recommended vaccinations that must be fulfilled by the pilgrims during Hajj. Moreover, while obtaining permission from the Saudi government to perform Hajj, a pilgrim must submit the proof of vaccination for diseases like meningitis and ACYW135. In addition, vaccination for the seasonal (or common) flu should be taken two weeks before applying for the visa. (Royal Embassy of Saudi Arabia, Washington DC, 2014). Based on the findings of this study, it was found that 90.8% of the pilgrims were informed about the necessary and required vaccinations that they needed to take. It was also found that 84.7% of the pilgrims agreed

with the availability of all required vaccinations in advance in clinics before the event in 2012.

During the Hajj and while performing the rituals, pilgrims need to travel from one site to another which can increase the risk for cases of dehydration and heat stroke. Therefore, the pilgrims need to have plenty of water, beverages and food in these sites. Yeo (2004) has stated that symptoms as fatigue or weakness, nausea and vomiting, headache, myalgia or muscle cramps, dizziness, irritability, orthostatic pulse and blood pressure changes, and tachycardia. Temperatures can easily be elevated up to 106 °F (41 °C) and sweating may or may not be present (Yeo, 2004). Therefore, it is recommended that the Saudi government ensure sufficient water, beverages and food for the pilgrims in these sites during future Hajj. Based on this study, 21% of the pilgrims who took part in 2012 Hajj disagreed that the sites that they have been-in (Mina, Arafat, and Muzdalifah) were provided with service facilities to arrange safe beverages and foods.

During Hajj, trampling often occurs, as millions of people are walking back and forth performing the rituals on sites. With the heavy traffic flow, pedestrians are in close contact, immobilized, and compressed situations often occur. Crowds of this size are quite dangerous and difficult for security personnel to control. The implications of this include the easy spread of diseases and the dangers of bodily injury (Lund, Gutman, & Turris, 2011). With the increasing number of pilgrims every year, it is a great challenge for the Saudi government to control these huge crowds and avoid any kind of accident. Based on this study during Hajj 2012 it was found that 13.7% of the pilgrims disagreed with the fact that the government had well prepared the local authorities to be ready in-case of an emergency during the event such as trampling cases and environmental heat injuries. Therefore, it is imperative for the Saudi

government to maintain discipline, focus and a strong effort to ensure a smooth and safe pilgrimage for the pilgrims.

Two separate questionnaires were disseminated among the pilgrims and agents from Hajj agencies who participated in 2012 Hajj. There were a total of 48 returned responses for the Hajj agency survey, which represented 100% respondents. However, only 225 out of 1200 pilgrims were successfully answered and completed the study survey.

Based on the research findings, the researcher made the following comments/suggestions for the Saudi government to implement during future Hajj events.

From the Pilgrims survey, the researcher found that on overall the pilgrims were satisfied with the Hajj 2012. However, the researcher would like to summarize the findings and suggestions for the Saudi government for future Hajj preparation:

1. On average, 85% of the pilgrims agreed that they were satisfied with the service they received during the 2012 Hajj regardless of the age.
2. On average, 23.2% of the pilgrims disagreed on being satisfied with health and accommodation services that were provided in 2012 Hajj. Therefore, there is a scope of work for the Saudi government to improve health and accommodation services during future Hajj such as providing the pilgrims with enough accommodation and hotel services to assure public comfort and giving clear directions to the nearest temporary facilities that were used as medical emergency facilities.
3. The study showed that on average 87.8% of the pilgrims were satisfied with the medical preparedness plan that was implemented during 2012 Hajj. Thus, it can be commented that, Saudi government took good measures to ensure a

sound medical preparedness plan for the pilgrims regardless of their income during Hajj 2012.

4. Based on the study, it was found that 29.6% of the pilgrims disagreed with the fact that they received the most current information, by their agencies, regarding the prevention of transmitted diseases. Therefore, Saudi government should maintain a strong focus on the education and awareness for the pilgrims during future Hajj.
5. A continuous supply of safe beverages and food are vital for pilgrims in Hajj sites. Based on the study, it was found that 21% of the pilgrims disagreed with the fact that they were provided with the necessary safe beverages and food. It was suggested that more attention should be given to the availability of enough food and beverages for the pilgrims.
6. Residence service is very important during Hajj and it is especially important for the pilgrims who come from different countries. The researcher found that the majority (54.5%) of pilgrims were provided with the accommodation and hotel services during 2012 Hajj. However, 30.6% pilgrims did have problems with accommodation and hotel services to the major places like Mina, Arafat and Muzdalifah. Therefore, the Saudi government should ensure a better accommodation service for the pilgrims for future Hajj events.
7. Different age groups did not have significant difference in their opinion regarding the usage and usefulness of media during the Hajj 2012. On average 15.03% of pilgrims considered different media services that were provided by the government during 2012 Hajj were useless. Therefore, it is suggested that

the Saudi government should take necessary steps to ensure effective and smooth usage of media suitable for various age groups for future Hajj.

From the Agency questionnaire, the researcher found the following findings and suggestions:

1. There was no significant difference in satisfaction of services provided by the government among agents having different educational levels.
2. The researcher also found no significant difference in opinion by agents having different educational levels regarding the operational and medical issues during Hajj 2012.
3. 28.2% of the agents were not satisfied with the controlling authority such as police and security authorities over in-province, out-of-province modes of transportation (e.g., airplanes, trains or metros, ships, buses, highways). Therefore, it is suggested that there is a scope of improvement in management and communications among the agencies and responsible authorities during future Hajj.
4. In this era of technological advancement, computer technology makes important tasks simple and easy. It also helps in recording and maintaining important data. However, based on the study it was found that 38.3% of the agents disagreed that their agencies had computerized records to keep track of the pilgrims suspected of having infectious diseases, to help in data transmission, and also tracking and analysis during an epidemic. Therefore, it is suggested that the Saudi government ensure the usage of computer technology by the agencies to improve their services during Hajj.

Overall, the agents were satisfied with the way the agencies organized and supported the Hajj 2012. Thus the researcher suggests the Saudi government ensure a smooth operation by the agencies and improve the communication within the agencies and other authorities.

Recommendations for Future Studies...

Based on the data found from this research, the researcher suggested more studies need to be done on Hajj. The researcher also suggested that future studies should encompass foreigner pilgrims to get a deeper insight about Hajj and health related issues during the event.

REFERENCES

- Abdullah, A., in person interview, 2012.
- Ahmed, Q. A., Barbeschi, M., & Memish, Z. A. (2009). The quest for public health security at Hajj: The WHO guidelines on communicable disease alert and response during mass gatherings. *Travel Medicine and Infectious Disease*, 7(4), 226-30. Retrieved from <http://search.proquest.com/docview/1027140950/fulltext?accountid=11592>
- Al Rabeeah, A., Memish, Z. A., Zumla, A., Shafi, S., McCloskey, B., Moolla, A.,...Horton, R. (2012). Mass gatherings medicine and global health security. *The Lancet*, 380(9836), 3-4. Retrieved from <http://ezproxy.indstate.edu:2048/login?url=http://search.proquest.com/docview/1026849309?accountid=11592>
- Al Otaibi, H. & Kabash, I. (2010). Factors affecting primary health care services utilization by Hajjis, 1430 H. *Saudi Epidemiology Bulletin*, 17(1), 4-5. Retrieved from <http://www.fetp.edu.sa/seb/454?language=en>
- Al Sekaiti, M. & Choudhry, A. J. (2010). Satisfaction of Arab patients with services provided by primary health care centers in Makkah and Mina during Hajj season 1430 H (2009 G). *Saudi Epidemiology Bulletin*, 17(4), 25-26. Retrieved from <http://www.fetp.edu.sa/seb/483?language=en>
- Barhameen, S. (2010). *Future infrastructure upgrades of hajj premises*. [PowerPoint slides]. Retrieved from <http://conferences.thelancet.com/massgatherings/content/presentations>

Central Department of Statistics and Information. (2011). Hajj statistical report of 2011.

Retrieved from <http://www.cdsi.gov.sa/component/content/article/142>

Chunara, R. (2010). *Information technology and global surveillance* [PDF document].

Retrieved from The Lancet Web site:

<http://conferences.thelancet.com/sites/massgatherings/files/presentations/chunara.pdf>

Creative Research System. (2012). Sample size calculator. Retrieved from

<http://www.surveysystem.com/sscalc.htm>

Field Epidemiology Training Program. (2007). Sources of health education for international

Arab pilgrims and the effect of this education on their practices towards health

hazards in Hajj, 1427 H (2006). *Saudi Epidemiology Bulletin*, 14(4). Retrieved from

<http://www.fetp.edu.sa/seb/343>

Green, G. B., & Burnham, B. (1998). Health care at mass gatherings. *The Journal of the*

American Medical Association, 279(18), 1485-1486. doi: 10.1001/jama.279.18.1485.

Hayashi, K. (2010). *Global health security: Current challenges*. [PowerPoint slides].

Retrieved from <http://conferences.thelancet.com/massgatherings/content/presentations>

Holiday Weather. (2012). Retrieved from

http://www.holidayweather.com/country/saudi_arabia/

IBM. (2012). SPSS software. Retrieved from

<http://www-01.ibm.com/software/analytics/spss/>

Internet.gov.sa. (2012). Number of internet users in Saudi Arabia. Retrieved from

<http://www.internet.gov.sa/resources/statistics/tbdinternetuserstat>

- Lund, A., Gutman, S. J., & Turriss, S. A. (2011). Mass gathering medicine: a practical means of enhancing disaster preparedness in Canada. *Canadian Journal of Emergency Medicine*, 13(4), 231-236. Retrieved from <http://www.cjem-online.ca/v13/n4/p231>
- Manasek. (2012). Manasek. Retrieved from <http://www.mnask.com/>
- McConnell, J. (2012). Mass gathering health series. *The Lancet Infectious Diseases*, 12(1), 8 – 9. doi:10.1016/S1473-3099(11)70358-9.
- McConnell, J., & Memish, Z. (2010). The Lancet Conference on Mass Gatherings Medicine. *The Lancet Infectious Diseases*, 10(12), 818-819. doi:10.1016/S1473-3099(10)70260-7.
- McNabb, S. (2010). *Innovative public health surveillance strategies during mass gatherings* [PDF document]. Retrieved from The Lancet Web site: <http://conferences.thelancet.com/sites/massgatherings/files/presentations/mcnabb.pdf>
- Media committee of the Islamic pilgrimage. (2012). Pilgrimage virtues and provisions. Retrieved from <http://www.mnask.com/articles/6>
- Memish, Z. (2010). The Hajj: Communicable and non-communicable health hazards and current guidance for pilgrims. Retrieved from <http://www.eurosurveillance.org/images/dynamic/EE/V15N39/art19671.pdf>
- Memish, Z. A. & Al Rabeeah, A. (2011). Jeddah declaration on mass gatherings health. *The Lancet Infectious Diseases*, 11(5), 342 – 343. doi:10.1016/S1473-3099(11)70075-5.
- Memish, Z., Stephens, G. M., Steffen, R., & Ahmed, Q. A. (2012). Emergence of medicine for mass gatherings: Lessons from the Hajj. *The Lancet Infectious Diseases*, 12, 56-65. doi: 10.1016/S1473-3099(11)70337-1.

Ministry of Hajj. (2011a). Ministry of Hajj. Retrieved from

<http://www.hajinformation.com/main/m.htm>

Ministry of Hajj. (2011b). Muzdalifah. Retrieved from

<http://www.hajinformation.com/main/j40.htm>

Ministry of Hajj. (2011c). Responsibilities of the Ministry of Hajj. Retrieved from

<http://www.hajinformation.com/main/m10.htm>

Ministry of Hajj. (2011d). Visas. Retrieved from

<http://www.hajinformation.com/main/p10.htm>

Ministry of Hajj. (2012). Hajj Agencies. Retrieved from

<http://www.haj.gov.sa/Pages/UnderConstruction.aspx>

Ministry of Health. (2010). Health Statistical Year Book 2010. Retrieved from

<http://www.moh.gov.sa/en/Portal/WhatsNew/Pages/whatsNew-2012-01-09-001.aspx>

Ministry of Health. (2011a). Hajj: Health Guidelines before Hajj. Retrieved from

<http://www.moh.gov.sa/en/Hajj1432/Pages/AdviceBeforeHajj.aspx>

Ministry of Health. (2011b). Health instructions during Hajj. Retrieved from

<http://www.moh.gov.sa/en/Hajj1432/Pages/AdviceDuringHajj.aspx>

Ministry of Health. (2011c). Health requirements for Hajj and Umrah pilgrims in 2011.

Retrieved from <http://www.moh.gov.sa/en/HealthAwareness/Hajj/Pages/003.aspx>

Ministry of Health. (2012a). Raising the slogan: "Pilgrims' Health Is our Concern", the Media

Information Center Provides its Services for Pilgrims. Retrieved from

<http://www.moh.gov.sa/en/Ministry/MediaCenter/News/Pages/News-2012-10-03-003.aspx>

Ministry of Health. (2012b). Media report on MOH's services in 1433-Hajj season. Retrieved from

<http://www.moh.gov.sa/en/Ministry/MediaCenter/Publications/Pages/publications-2012-10-02-001.aspx>

Royal Embassy of Saudi Arabia Washington DC. (2014). Hajj Requirements: (updated annually). Retrieved from

http://www.saudiembassy.net/services/hajj_requirements.aspx

The Lancet. (2012). Mass gatherings health - creating a public health legacy. *The Lancet*, 380 (9836) 1-7. doi:10.1016/S0140-6736(12)61108-8.

The Work of WHO in the Eastern Mediterranean Region: Annual Report of the Regional Director, 1 January-31 December 2007. (2008). Regional Office for the Eastern Mediterranean- EMRO. Retrieved from

http://applications.emro.who.int/docs/RD_Annual_Report_2012_en_14587.pdf

Weatherspark Beta. (n.d.). *Average Weather for Mecca, Saudi Arabia*. Retrieved from

<https://weatherspark.com/averages/32773/Mecca-Makkah-Saudi-Arabia>

World Bank. (2012). Internet users as percentage of population. Retrieved from

http://www.google.com/publicdata/explore?ds=d5bncppjof8f9_&met_y=it_net_user_p2&idim=country:SAU&dl=en&hl=en&q=number+of+internet+users+in+saudi+arabia

World Health Organization. (2008). Communicable disease alert and response for mass gatherings. Retrieved from

http://www.who.int/csr/resources/publications/WHO_HSE_EPR_2008_8c.pdf

World Health Organization. (2009). Global forum on mass gatherings. Retrieved from

http://whqlibdoc.who.int/hq/2011/WHO_HSE_GAR_SIH_2011.1_eng.pdf

World Health Organization. (2011). Report on WHO support to the 2010 FIFA World Cup

South Africa. Retrieved from

www.afro.who.int/index.php?option=com_docman&task...

Yeo, T. P. (2004). Heat stroke: A comprehensive review. *AACN Clinical Issues*, 15(2), 280-

293. Retrieved from

http://www.nursingcenter.com/lnc/journalarticle?Article_ID=593951

APPENDIX A: PILGRIMS QUESTIONNAIRE

My name is Samar Alshenawi, a graduate student at Indiana State University- Department of Applied Health Sciences. I would like to invite you to be part of a survey study. This survey is a fulfillment for Master thesis requirement in Public Health.

You are cordially invited to participate in this survey research project entitled "An assessment of the 2012 Hajj providing services, from pilgrims and Hajj agencies stance". The purpose is to obtain pilgrims and Hajj agencies opinions regarding the provided services during your Hajj in 2012. The survey is anonymous and confidential and should take about 10 minutes to complete. There is no risk to complete this survey. If you feel upset or anxious you may stop at any time.

The contents of this survey were divided into six sub-categories that were satisfaction with overall services, health and general services, medical preparedness plan, education and awareness, media, and demographical information, which included the age, gender, educational level, and income status of the participant

The results of this survey and research study will be shared with the Ministry of Hajj. The only direct benefit to you, if you participate, is that the results may be able to influence the authorities' preparedness and planning for better provided services for future Hajj. Also, others may benefit by learning about the results of this research.

Your anonymous completion of this survey will serve as your consent to be part of this research.

Contact information for any questions in regards to the study or the survey can be made to:

Samar Alshenawi
Indiana State University
College of Nursing, Health and Human
Services
Department of Applied Health Sciences
Phone number: 703-901-7791
Email
address: salshenawi@sycamores.indstate.edu

Shiaw-Fen Ferng, Ph.D.
Indiana State University
College of Nursing, Health and Human
Services
Department of Applied Health Sciences
Phone number: 812-237-3096
Email address: s-ferng@indstate.edu

Directions for participants after they start the questionnaire

Questionnaire Instructions:

Please read the following notes before filling in the questionnaire.

For most of the questions, they are in multiple choice format. Please check the best answer that you would like to enter for each question. In some questions, you might need to fill-in the blank by writing a few words in the place where lines are given. To do that, just point the cursor on the cell and type. Upon completion, please click "Next" to get to the next question. It will take you about 10 minutes to complete this survey.

By checking "Accept" bellow will take you to the survey; checking "Do not accept" will end your access and opt out of the survey

- Accept
- Do not accept

Demographical information					
Age: 18-25 26-35 36-45 46-55 56-65 66 and above					
Gender: Male Female					
Education level: less than high school, High school, Diploma, Undergraduate, Graduate.					
Income status: 2000- 4000 SR 4000-10.000 SR 10.000-15.000 SR 15.000- 20.000 SR and above per month					
Services satisfaction					
Item		Strongly agree	Agree	Disagree	Strongly disagree
1	I am satisfied with the information center services especially when having any question or inquiry during the event. The organizers such as (agencies, police, medics...etc.) were very helpful and answered my questions.				
2	I am satisfied with the services and the performance of the police officers, the security of the event, and other related authorities during the Hajj of 2012 (for example: the performance of the tent city security).				
3	I am satisfied with the controlling authority such as police and security authorities over in-province, out-of-province modes of transportation (e.g., airplanes, trains or metros, ships, buses, and highways).				
4	The sites I have been-in were very organized and prepared in advance by the local authorities who are also involved in maintaining public order in which sites were ready for us to perform smooth Hajj.				
5	I believe that the government has well prepared the local authorities to be ready in-case of an emergency during the event such as trampling cases and environmental heat injuries.				
Health and general serveries					
Item		Strongly agree	Agree	Disagree	Strongly disagree
1	The sites that I have been-in (Mina, Arafat, and Muzdalifah) were provided with service facilities to arrange safe beverages and foods.				
2	The sites that I have been-in (Mina, Arafat, and Muzdalifah) were provided with accommodation and hotel services to assure public comfort.				
3	I got clear directions to the nearest temporary facilities that were used as medical emergency facilities.				
4	I recognized prepared facilities for in-patient care services wherever pilgrims existed.				
Medical preparedness plan					

Item	Strongly agree	Agree	Disagree	Strongly disagree
1				
2				
Education and awareness				
Item	Strongly agree	Agree	Disagree	Strongly disagree
1				
2				
3				
4				
Media				
Item	Very useless	Useless	Useful	Very useful
1				
2				
3				
4				
5	<p>Ministry of Hajj, Ministry of Interior Kingdom of Saudi Arabia, Ministry of Islamic Affairs, Endowments, Da`wah, and Guidance, Ministry of Health, Saudi Red Crescent Authority, Saudi Arabia Airlines, General Presidency of the Promotion of Virtue and the Prevention of Vices, Other. Please specify</p> <p>I did not visit any Website before or during the Hajj season 2012 as a source of information</p>			

- 1- On a scale from (very dissatisfied to very satisfied), how would you describe the services provided by the Saudi government during Hajj of 2012?
 - Very Dissatisfied
 - Dissatisfied
 - Somewhat Dissatisfied
 - Somewhat Satisfied
 - Satisfied
 - Very Satisfied
- 2- Did you have Hajj before 2012? Yes (go to Question3), No (go to the end of the survey).
 - Yes
 - No
- 3- If yes, then when did you perform Hajj for the first time?
()
- 4- On a scale from (very dissatisfied to very satisfied), how would you describe the services provided by the Saudi government during your previous Hajj?
 - Very Dissatisfied
 - Dissatisfied
 - Somewhat Dissatisfied
 - Somewhat Satisfied
 - Satisfied
 - Very Satisfied

The end of survey statement

Thank you for completing this survey. Your feedback is important to us in how we can improve the Hajj services. By responding to the survey, you may help the researcher, the Saudi government, and private sectors in finding the ways of improvement in future Hajj services.

If you have any questions about the survey, please contact me at, salshenawi@sycamores.indstate.edu or call + 001 (703) 901-7791 or call the Saudi cell phone +966 569224344

APPENDIX B: AGENCIES QUESTIONNAIRE

My name is Samar Alshenawi, a graduate student at Indiana State University- Department of Applied Health Sciences. I would like to invite you to be part of a survey study. This survey is a fulfillment for Master thesis requirement in Public Health.

You are cordially invited to participate in this survey research project entitled "An assessment of the 2012 Hajj providing services, from pilgrims and Hajj agencies stance". The purpose is to obtain pilgrims and Hajj agencies opinions regarding the provided services during your Hajj in 2012. The survey is anonymous and confidential and should take about 10 minutes to complete. There is no risk to complete this survey. If you feel upset or anxious you may stop at any time.

The contents of this survey were divided into six sub-categories that were satisfaction with overall services, policy issues, operational issues which consist of agencies operational issues and medical operational issues, education and awareness, management and communications, media, and demographical information, which included the age, gender, educational level, and the agency title.

The results of this survey and research study will be shared with the Ministry of Hajj. The only direct benefit to you, if you participate, is that the results may be able to influence the authorities' preparedness and planning for better provided services for future Hajj. Also, others may benefit by learning about the results of this research.

Your anonymous completion of this survey will serve as your consent to be part of this research.

Contact information for any questions in regards to the study or the survey can be made to:

Samar Alshenawi
Indiana State University
College of Nursing, Health and Human
Services
Department of Applied Health Sciences
Phone number: 703-901-7791
Email
address: salshenawi@sycamores.indstate.edu

Shiaw-Fen Ferng, Ph.D.
Indiana State University
College of Nursing, Health and Human
Services
Department of Applied Health Sciences
Phone number: 812-237-3096
Email address: s-ferng@indstate.edu

Directions for participants after they start the questionnaire

Questionnaire Instructions:

Please read the following notes before filling in the questionnaire.

For most of the questions, they are in multiple choice format. Please check the best answer that you would like to enter for each question. In some questions, you might need to fill-in the blank by writing a few words in the place where lines are given. To do that, just point the cursor on the cell and type. Upon completion, please click “Next” to get to the next question. It will take you about 10 minutes to complete this survey.

By checking "Accept" bellow will take you to the survey; checking "Do not accept" will end your access and opt out of the survey

- Accept
- Do not accept

Demographical information					
1	Age: 18-25 26-35 36-45 46-55 56-65 66 and above				
2	Gender: Male Female				
3	Education level: Less than high school, High school, Diploma, Undergraduate, Graduate.				
4	Name of the agency:				
Services satisfaction					
Item		Strongly agree	Agree	Disagree	Strongly disagree
1	The agency received clear information about any new regulations or protocols for the 2012 Hajj from the Ministry of Hajj.				
2	The public health emergency plan for 2012 Hajj was applicable, realistic, and ready to use.				
3	The agency has a working disease surveillance system for reporting health data to the Ministry of Health to track their pilgrims.				
4	During 2012 the Saudi government provided all Hajj sites (Mina, Arafat, and Muzdalifah) with feasible service facilities for drinks and snacks that arrange safe beverages and foods for pilgrims.				
5	During Hajj 2012, the Saudi government provided all Hajj sites (Mina, Arafat, and Muzdalifah) with accommodation and hotel services to assure pilgrims comfort.				
6	The government had provided, prepared, and well-equipped facilities for outpatient and inpatient care for pilgrims.				
Policy issues					
Item		Strongly agree	Agree	Disagree	Strongly disagree
1	All employees (including external experts) who agreed to serve pilgrims during the event had been assigned specific tasks according to their positions in your institute.				
2	The Ministry of Health identified and assigned authorities in charge of coordinating different medical groups during an epidemic.				
3	My agency had computerized records to keep track of the pilgrims suspected of having infectious disease, to help in data transmission, and also tracking and analysis during an epidemic.				
4	My agency knew exactly what to do in case of an epidemic and was prepared to before the event.				
Operational issues					

Item	Strongly agree	Agree	Disagree	Strongly disagree
Agency's operational issues				
1	I was aware of the final updated communicable diseases' list that includes all different types of diseases such as H1N1.			
2	My agency had direct communication channels with the health authorities in charge such as the list of health care workers and institutions that would assist pilgrims during an emergency.			
Medical operational issues				
3	I knew whether the Ministry of health had provided and implemented a vaccination system as part of the prevention plans for infectious diseases to help control an epidemic.			
4	I had identified alternate facilities where overflow cases from hospitals and well persons needing quarantine can be cared for			
5	Small clinics can receive new cases and treat people at-risk who were hard-to-reach during an outbreak			
Education and awareness				
Item	Strongly agree	Agree	Disagree	Strongly disagree
1	My agency had arranged educational materials for the media, providers, and the public in different languages and in forms suitable for limited literacy populations with the approval of authorities such as the Ministry of Health and the Ministry of Hajj.			
2	Training was given to all of our employees before the event. For example: how to act during the event also, in case of an emergency.			
3	I got the necessary information through training sessions, workshop or lectures regarding pilgrims' health related issues (e.g. personal hygiene, cases of infectious diseases, and environmental injuries...etc.)			
4	There were signs of health promotion campaigns.			
5	All sites within the event were very organized and prepared in advance, ready for us to help pilgrims to perform smooth Hajj by the local authorities.			
6	I have knowledge of prevention procedures (such as wearing protective masks in case of			

	the spread of transmission diseases).				
7	Authorities had a strategy in educating pilgrims on an outbreak of disease that insured all pilgrims had their share of important information.				
Management & communications					
Item		Strongly agree	Agree	Disagree	Strongly disagree
1	I was satisfied with the controlling authority such as police and security authorities over in-province, out-of-province modes of transportation (e.g., airplanes, trains or metros, ships, buses, highways).				
2	The agency had communicated and coordinated with other agencies that would assist each other in maintaining public order and enforcing control measures during an epidemic.				
3	There was a specific emergency-response plan which involved health care services to determine how to best prevent, control disease spread, and manage the health care of the population during an epidemic.				
4	There was an easy communication between us (as an agency) and the key individuals from Ministry of Health whom I would need to communicate with during an epidemic.				
Media					
Item		Very useless	Useless	Useful	Very Useful
1	During 2012 Hajj, how useful was the Hajj radio channel to provide Hajj related information?				
2	During 2012 Hajj, the Saudi TV channel broadcasted Hajj related information and interviews, how helpful was this information to you and your agency?				
3	How helpful were the websites to answer your questions about Hajj?				
4	During 2012 Hajj, how useful were the brochures that were provided by the Ministry of Health to the agency?				
5	What were the most helpful websites to the agency during Hajj 2012 as a source of information? Please choose all answers applied to you.	Ministry of Hajj, Ministry of Interior Kingdom of Saudi Arabia, Ministry of Islamic Affairs, Endowments, Da`wah, and Guidance, Ministry of Health, Saudi Red Crescent Authority, Saudi Arabia Airlines, General Presidency of the Promotion of Virtue and the Prevention of Vices. Other. Please specify			

Thank you for completing this survey. Your feedback is important to us in how we can better improve the Hajj services. By responding to the survey, you may help organizing this holy event that you are part of.

If you have any questions about the survey, please contact me at, salshenawi@sycamores.indstate.edu or call + 001 (703) 901-7791 or call the Saudi cell phone +966 569224344.

APPENDIX C: PILGRIMS QUESTIONNAIRE_ARABIC COPY

استبيان حجاج بيت الله الحرام

أنا سمر الشيناوي، طالبة الدراسات العليا في جامعة ولاية إنديانا - قسم العلوم الصحية التطبيقية تخصص صحة عامه. أود أن أذكركم لتكونوا جزءاً من هذه الدراسة إكمالاً لمتطلبات رسالة الماجستير في الصحة العامة.

هذه دعوة للمشاركة في المشروع البحثي بعنوان "تقييم الخدمات المقدمة للحجاج لعام 2012 ، منظور كلا من الحجاج ووكالات حملات الحجاج" والغرض من ذلك هو الحصول على آراء الحجاج بالإضافة إلى آراء وكالات حملات الحج بشأن الخدمات المقدمة خلال موسم الحج لعام 2012. تقنية المسح ستم بشكل مجهول وسري، وتستغرق حوالي 10 دقائق لإكمالها و لا يوجد أي خطر لإتمام هذه الدراسة.

نتائج البحث والاستبيان ستشارك مع وزارة الحج. مشاركتك في هذا البحث ستساعد الباحث على استخلاص نتائج قد تكون قادرة على التأثير في التخطيط لتحسين الخدمات المقدمة للحج في المستقبل. أيضاً، نتائج البحث قد تفيد بحوث أخرى من خلال مقارنة نتائج هذا البحث. بالإضافة إلى أن استكمالك لهذا الاستبيان هو بمثابة موافقتك على أن تكون جزءاً من هذا البحث.

معلومات الاتصال لأي أسئلة تخص الدراسة أو المسح يمكنكم الاتصال على:

سمر الشيناوي

جامعة ولاية إنديانا

كلية التمريض، الصحة والخدمات البشرية

قسم العلوم الصحية التطبيقية

رقم الهاتف: 703-901-7791

عنوان البريد الإلكتروني: salshenawi@sycamores.indstate.edu

أو الاتصال على الدكتورة شياو-فن فيرنغ Shiao-Fen Ferng

جامعة ولاية إنديانا

كلية التمريض، الصحة والخدمات البشرية

قسم العلوم الصحية التطبيقية

رقم الهاتف: 812-237-3096

عنوان البريد الإلكتروني: s-ferng@indstate.edu

هذه بعض الارشادات للمشاركة في هذا الاستبيان:

يرجى قراءة الملاحظات التالية قبل ملء الاستبيان.

بالنسبة لمعظم الأسئلة تتمثل في الاختيار المتعدد. يرجى الاطلاع على أفضل إجابة واختيارها. بعض الأسئلة، قد تحتاج إلى ملء الفراغ من خلال كتابة بضع الكلمات في المكان المخصص. للقيام بذلك، ضع نقطة المؤشر على الخلية ثم انقر على الفراغ ويمكنك بعد ذلك البدء بالكتابة. عند الانتهاء، يرجى النقر على زر "التالي". تستغرق العملية بضع دقائق لإتمام هذا الاستبيان.

بالرجاء اختيار "اقبل البدء بالاستبيان" وسوف يتم البدء بطرح اسئلة الاستبيان؛ أو يمكنك اختيار "لا اقبل البدء بالاستبيان" وسينتهي الاختبار وسيتم انسحابك من الدراسة

- اقبل البدء بالاستبيان
- لا اقبل البدء بالاستبيان

المعلومات الشخصية Demographical information					
1- العمر: 18-25 26-35 36-45 46-55 56-65 66+					
2- الجنس: ذكر أنثى					
3- المستوى التعليمي: حاصل على درجة أقل من الثانوية العامه ، حاصل على درجة الثانوية العامه ، حاصل على درجة دبلوم ، حاصل على درجة البكالوريوس ، حاصل على درجة دراسات عليا.					
4- المستوى المادي: 2000- 4000 SR 4000-10.000 SR 10.000-15.000 SR 15.000- 20.000 SR+					
الرضا عن الخدمات المقدمة Services satisfaction					
العنوان	أوافق بشدة	أوافق	غير موافق	غير موافق وبشدة	
1					أنا راض عن خدمات مراكز المعلومات وخاصة عند وجود أي سؤال أو استفسار خلال أداء فريضة الحج. كان المنظمون (مثل وكالات ومؤسسات الحج والشرطة ومسعفون ... الخ) مهتمون بالإجابة على أسئلتنا
2					أنا راض عن خدمات وأداء ضباط الشرطة والأمن خلال هذا الحدث، بالإضافة إلى خدمات السلطات الأخرى ذات الصلة وذلك خلال حج 2012 (على سبيل المثال: أداء مسؤولي الأمن في منى)
3					كنت راض عن الخدمات المقدمة من قبل الشرطة والأمن بدخل مكة وخارجها فيما يختص بالنقل (على سبيل المثال، الطائرات، القطارات أو المترو والسفن والحافلات والطرق السريعة)
4					كانت جميع المواقع المقدسة والتي قمت بزيارتها خلال رحلة الحج منظمه ومعدة مسبقاً، من قبل السلطات المحلية والذين شاركوا أيضاً في الحفاظ على النظام العام في المواقع التي كانت مجهزة بالنسبة لنا لأداء فريضة الحج على نحو سلس
5					أعتقد أن الحكومة قد أعدت السلطات المحلية اعداداً جيداً لتكون جاهزة في حالة الطوارئ خلال موسم الحج مثل حالات الإصابات وحالات الحرارة وضربات الشمس
الخدمات الصحية والخدمات العامه Health and general services					
العنوان	أوافق بشدة	أوافق	غير موافق	غير موافق وبشدة	
1					المواقع التي قمت بزيارتها (منى، عرفات، ومزدلفة) معدة بحيث تتوفر فيها جميع التسهيلات و الخدمات لتقدم للحجاج المشروبات والأطعمة الآمنة
2					المواقع التي قمت بزيارتها (منى، عرفات، ومزدلفة) مجهزة بأماكن للإقامة تقدم خدمات فنادقية لضمان الراحة العامة للحجاج
3					حصلت على توجيهات واضحة بالنسبة إلى أقرب المرافق المؤقتة والتي تستخدم كمرافق طبية للطوارئ
4					لاحظت وجود مرافق معدة لخدمات الرعاية الصحية للحجاج المرضى أينما تواجدوا للحجاج
خطة التأهب الطبية Medical preparedness plan					
العنوان	أوافق بشدة	أوافق	غير موافق	غير موافق وبشدة	
1					تم إبلاغنا بالتطعيمات اللازمة والمطلوبة التي تحتاج إلى أن تأخذ قبل البدء برحلة الحج
2					قد تم توفير جميع التطعيمات اللازمة للحجاج في العيادات قبل بدء الحج
التثقيف والتوعية Education and awareness					
العنوان	أوافق بشدة	أوافق	غير موافق	غير موافق وبشدة	
1					وفرت وكالة الحج التابعه لنا المعلومات اللازمة في حالة اصابتي أنا أو شخص معي بمرض معد مثل (انفلونزا الخنازير وحمى الضنك)

				2	قدمت لي بعض الكتيبات أو النشرات المتعلقة بالسلامة العامة. على سبيل المثال: خريطة الموقع والتي تظهر كيفية التصرف والخروج في حالات الطوارئ مثل الحرائق، أو انهيار بناء ... الخ
				3	قدمت لي كتيبات سهلة توضيح توجيهات كيفية الحفاظ على سلامتي وسلامة العامه
				4	لقد استلمت المعلومات المستجدة والحالية من قبل وكالة الحج التابعه لي بشأن الوقاية من الأمراض المعدية والناقله
الإعلام Media					
					العنوان
					مفيدة جداً
					مفيدة
					غير مفيدة
					غير مفيدة جداً
				1	خلال موسم حج عام 2012 ، كيف تقيم قناة راديو الحج لتوفيرها معلومات ذات العلاقة بالحج؟
				2	خلال موسم حج عام 2012 ، بثت قناة التلفزيون السعودي معلومات عن الحج ومقابلات ذات صلة، فهل كانت هذه المعلومات مفيدة لك ولعائلتك (إن وجد)؟
				3	هل كانت المواقع الإلكترونية مفيدة للإجابة على أسئلتكم عن أي معلومات حول الحج؟
				4	خلال موسم حج عام 2012 ، مامدى الاستفادة التي قدمتها الكتيبات التي تم توفيرها من قبل وكالة الحج التابعه لك ولعائلتك (إن وجد)؟
				5	ما هي أكثر المواقع الإلكترونية المفيدة والتي قمت بزيارتها قبل أو خلال موسم حج عام 2012 كمصدر للمعلومات؟ الرجاء اختيار جميع الإجابات التي تنطبق عليك
					<ul style="list-style-type: none"> ○ وزارة الحج ○ وزارة الداخلية بالملكة العربية السعودية ○ وزارة الشؤون الإسلامية والأوقاف والدعوة والإرشاد ○ وزارة الصحة ○ هيئة الهلال الأحمر السعودي ○ الخطوط الجوية العربية السعودية ○ الرئاسة العامة لهيئة الأمر بالمعروف والنهي عن المنكر ○ أخرى. يرجى التحديد () ○ لم أقم بزيارة أي موقع الكتروني قبل أو خلال موسم حج 2012 كمصدر للمعلومات

على مقياس من (مُرضيه جداً إلى غير مُرضيه جداً)، كيف تصف الخدمات التي قدمتها الجهات المختصه خلال موسم حج عام 2012؟

- مُرضيه جداً
- مُرضيه
- إلى حد ما مُرضيه
- إلى حد ما غير مُرضيه
- غير مُرضيه
- غير مُرضيه جداً

هل قمت بالحج قبل عام 2012؟

- نعم
- لا

إذا كانت إجابة نعم، ففي أي عام قمت بأداء مناسك الحج لأول مرة؟

()

على مقياس من (مُرضيه جداً إلى غير مُرضيه جداً)، كيف تصف الخدمات التي قدمتها الجهات المختصة خلال موسم الحج السابق والذي قمت به لأول مرة؟

- مُرضيه جداً
- مُرضيه
- إلى حد ما مُرضيه
- إلى حد ما غير مُرضيه
- غير مُرضيه
- غير مُرضيه جداً

نشكر لكم تعاونكم لإنهاء هذا الاستبيان. رأيكم في الخدمات المقدمة مهم بالنسبة لنا لتمكيننا من تحسين خدمات الحج للأعوام المقبلة. من خلال اجابتم على هذا الاستبيان، فقد تساعدون الباحث ، القطاع العام والخاص لبحث وسائل تساعد على تنظيم هذا الحدث المقدس.

إذا كان لديك أي أسئلة حول هذه الدراسة الاستقصائية، يرجى الاتصال بي على الايميل salshenawi@sycamores.indstate.edu أو الاتصال +001 (703)901-7791 أو الاتصال على الهاتف الخليوي السعودي 0569224344

APPENDIX D: AGENCIES QUESTIONNAIRE_ARABIC COPY

استبيان مراكز الحج

أنا سمر الشيناوي، طالبة الدراسات العليا في جامعة ولاية إنديانا - قسم العلوم الصحية التطبيقية تخصص صحة عامه. أود أن أذكركم لتكونوا جزءاً من هذه الدراسة إكمالاً لمتطلبات رسالة الماجستير في الصحة العامة.

هذه دعوة للمشاركة في المشروع البحثي بعنوان "تقييم الخدمات المقدمة للحجاج لعام 2012 ، منظور كلا من الحجاج ووكالات حملات الحجاج" والغرض من ذلك هو الحصول على آراء الحجاج بالإضافة إلى آراء وكالات حملات الحج بشأن الخدمات المقدمة خلال موسم الحج لعام 2012. تقنية المسح ستنم بشكل مجهول وسري، وتستغرق حوالي 10 دقائق لإكمالها و لا يوجد أي خطر لإتمام هذه الدراسة.

نتائج البحث والاستبيان ستشارك مع وزارة الحج. مشاركتك في هذا البحث ستساعد الباحث على استخلاص نتائج قد تكون قادرة على التأثير في التخطيط لتحسين الخدمات المقدمة للحج في المستقبل. أيضاً، نتائج البحث قد تفيد بحوث أخرى من خلال مقارنة نتائج هذا البحث. بالإضافة إلى أن استكمالك لهذا الاستبيان هو بمثابة موافقتك على أن تكون جزءاً من هذا البحث.

معلومات الاتصال لأي أسئلة تخص الدراسة أو المسح يمكنكم الاتصال على:

سمر الشيناوي

جامعة ولاية إنديانا

كلية التمريض، الصحة والخدمات البشرية

قسم العلوم الصحية التطبيقية

رقم الهاتف: 703-901-7791

عنوان البريد الإلكتروني salshenawi@sycamores.indstate.edu

أو الاتصال على الدكتورة Shiaw-Fen Ferng

جامعة ولاية إنديانا

كلية التمريض، الصحة والخدمات البشرية

قسم العلوم الصحية التطبيقية

رقم الهاتف: 812-237-3096

عنوان البريد الإلكتروني s-ferng@indstate.edu

هذه بعض الارشادات للمشاركة في هذا الاستبيان:

يرجى قراءة الملاحظات التالية قبل ملء الاستبيان.

بالنسبة لمعظم الأسئلة تتمثل في الاختيار المتعدد. يرجى الاطلاع على أفضل إجابة واختيارها. بعض الأسئلة، قد تحتاج إلى ملء الفراغ من خلال كتابة بضع الكلمات في المكان المخصص. للقيام بذلك، ضع نقطة المؤشر على الخلية ثم انقر على الفراغ ويمكنك بعد ذلك البدء بالكتابة. عند الانتهاء، يرجى النقر على زر "التالي". تستغرق العملية بضع دقائق لإتمام هذا الاستبيان.

بالرجاء اختيار "أقبل البدء بالاستبيان" وسوف يتم البدء بطرح اسئلة الاستبيان؛ أو يمكنك اختيار "لا أقبل البدء بالاستبيان" وسينتهي الاختبار وسيتم انسحابك من الدراسة

- أقبل البدء بالاستبيان
- لا أقبل البدء بالاستبيان

المعلومات الشخصية Demographical information					
1- العمر: 18-25 26-35 36-45 46-55 56-65 66+					
2- الجنس: ذكر أنثى					
3- المستوى التعليمي: حاصل على درجة أقل من الثانوية العامة ، حاصل على درجة الثانوية العامة ، حاصل على درجة دبلوم ، حاصل على درجة البكالوريوس ، حاصل على درجة دراسات عليا.					
اسم وكالة الحج التابعه لكم					
الرضا عن الخدمات المقدمة Services satisfaction					
العنوان	أوافق بشدة	أوافق	غير موافق	غير موافق وبشدة	
1					تلقت وكالة الحج التابعه لكم معلومات واضحة حول أي لوائح جديدة أو خطط لحج عام 2012 من وزارة الحج
2					هناك خطة طوارئ موضوعه في حج عام 2012 تهتم بالصحة العامة وهي قابلة للتطبيق، واقعية، وجاهزة للاستخدام
3					وكالة الحج التابعه لكم لديها نظام لرصد الأمراض بغرض الإبلاغ عن أي بيانات صحية لوزارة الصحة وذلك لتعقب المعلومات الصحية للحجاج التابعين للملتمكم
4					خلال حج عام 2012 وفرت الجهات المختصة لكل المواقع المقدسة (منى ، عرفات ، ومزدلفة) بمرافق وخدمات ترتب أطعمة ووجبات خفيفة آمنة للحجاج
5					خلال موسم الحج 2012، وفرت الجهات المختصة كل المواقع المقدسة (منى ، عرفات ، ومزدلفة) بخدمات فندقية لإقامة الحجيج وضمان راحتهم
6					قامت الحكومة بإعداد وتقديم مرافق مجهزة تجهيزاً جيداً للمرضى المراجعين والمرضى المنومين في المراكز الصحية أو المستشفيات لرعاية الحجاج
المسائل القانونية Policy issues					
العنوان	أوافق بشدة	أوافق	غير موافق	غير موافق وبشدة	
1					جميع الموظفين من وكالة الحج التابعه لكم (بما في ذلك خبراء من خارج المؤسسة إن وجد) الذين وافقوا على خدمة الحجاج خلال هذا الحدث ، تم تعيينهم بمهام محددة لهم وفقاً لمؤهلاتهم في وكالة الحج التابعه لكم
2					قامت وزارة الصحة بتحديد وتعيين السلطات المسؤولة عن تنسيق المجموعات الطبية المختلفة في حالة انتشار الأوبئة
3					وكالة الحج التابعه لكم لها سجلات رقمية لتعقب الحالات المشتبه بوجود أمراض معدية لديهم، وذلك للمساعدة في نقل البيانات للجهات المسؤولة، وأيضا لحصر هذه الحالات وتحليلها في حالات انتشار الأوبئة
4					وكالة الحج التابعه لكم لديها فكرة واضحة بالدور المتوقع منها أداءه في حالة انتشار أي وباء وكانوا على استعداد للقيام بذلك
المسائل التشغيلية Operational issues					
العنوان	أوافق بشدة	أوافق	غير موافق	غير موافق وبشدة	
1					كنت على بينة بالقائمة النهائية المحدثة للأمراض المعدية والتي تضم أنواع مختلفة من الأمراض مثل HINI أو انفلونزا الخنازير
2					وكالة الحج التابعه لكم لديها قنوات اتصال مباشرة مع الجهات الصحية المسؤولة مثل لائحة العاملين في مراكز الرعاية الصحية الأولية التي من شأنها أن تساعد الحجاج في حالة الطوارئ
3					لدي فكرة بإذا كانت وزارة الصحة قد وفرت وطبقت نظام التطعيم

				كجزء من الخطط الوقائية للأمراض المعدية للمساعدة في السيطرة على أي نوع من الأوبئة
				4 لدي فكرة بمواقع المراكز الصحية البديلة والتي من شأنها الاهتمام بالحالات المحولة والتي تشمل الأشخاص المحتاجين للتدريب في حالة تجاوز أعداد المرضى في المستشفيات للحد المسموح
				5 العيادات أو المراكز الصحية الصغيرة يمكنها استقبال الحالات الجديدة واسعافها كالأشخاص الذين يصعب الوصول إليهم أثناء تدفق الحجاج
التثقيف والتوعية Education and awareness				
				العنوان
غير موافق وبشدة	غير موافق	أوافق	أوافق بشدة	
				1 قامت وكالة الحج التابعه لكم بترتيب بعض المواد التعليمية لوسائل الإعلام، مقدمي الخدمات، والحجيج بلغات مختلفة وبأشكال مناسبة أيضاً للأشخاص محدودى التعلم بموافقة من الجهات المختصة مثل وزارة الصحة ووزارة الحج
				2 تم تدريب جميع العاملين لدينا في المؤسسة قبل موسم الحج على سبيل المثال: كيفية التصرف أثناء تدفق الحجيج لممارسة الشعائر وفي حالات الطوارئ
				3 حصلت على المعلومات اللازمة من خلال الدورات التدريبية، ورش العمل أو المحاضرات حول المسائل الصحية ذات الصلة بالحجاج (مثل النظافة الشخصية، وحالات الأمراض المعدية، والإصابات البيئية ... الخ
				4 كانت هناك بعض الحملات المنظمه لنشر التوعية بالصحة
				5 كانت جميع المواقع المقدسة منظمه ومعدة مسبقا، وعلى استعداد بالنسبة لنا لمساعدة الحجاج لأداء فريضة الحج على نحو سلس وذلك من قبل الجهات المحلية المسؤولة
				6 لدي معرفة بالإجراءات الوقائية (مثل ارتداء أقنعة واقية في حالة انتشار الأمراض المعدية)
				7 الجهات المسؤولة لديها استراتيجيات مدروسة في توعية الحجاج في حالات نقشي مرض معين وأن جميع الحجاج لديهم نصيب من المعلومات الهامة التي تخصهم
الادارة والاتصالات Management & communications				
				العنوان
غير موافق وبشدة	غير موافق	أوافق	أوافق بشدة	
				1 كنت راض عن الخدمات المقدمه من قبل الشرطة والأمن بداخل مكة وخارجها فيما يختص بالنقل (على سبيل المثال، الطائرات، القطارات أو المترو والسفن والحافلات والطرق السريعة)
				2 يوجد اتصال وتنسيق بين وكالة الحج التابعه لكم ووكالات أو حملات الحج الأخرى من شأنها أن تساعد بعضها البعض في الحفاظ على النظام العام وفرض الإجراءات اللازمه في حال انتشار وباء
				3 تم وضع خطة محددة للاستجابة في حالات الطوارئ والتي تتطلب الاهتمام بخدمات الرعاية الصحية لتحديد كيفية التحكم ومنع انتشار الأمراض، بالإضافة إلى خطة بديله توضح كيفية إدارة الخدمات الصحية للحجاج في حالات انتشار الأوبئة
				4 كانت هناك سهولة في الاتصال بيننا كمؤسسة حج والأفراد المسؤولين والقائمين على هذا الحدث من وزارة الصحة والذين نحتاج التواصل معهم في حالة انتشار وباء أو مرض معين
الإعلام Media				
				العنوان
مفيدة جداً	مفيدة	غير مفيدة	غير مفيدة جداً	
				1 خلال حج عام 2012 ، كيف تقيم قناة راديو الحج لتوفيرها معلومات ذات العلاقة بالحج؟

				2	خلال حج عام 2012 ، بثت قناة التلفزيون السعودي معلومات عن الحج ومقابلات ذات صلة، فهل كانت هذه المعلومات مفيدة لك ولمؤسسة الحج التابعه لكم؟
				3	هل كانت المواقع الإلكترونية مفيدة للإجابة على أسئلتكم عن أي معلومات حول الحج؟
				4	خلال حج عام 2012 ، مامدى الإستفادة التي قدمتها الكتيبات التي تم توفيرها من قبل وزارة الصحة لوكالة الحج التابعه لكم؟
				5	ما هي المواقع الإلكترونية الأكثر إفادة لوكالة الحج التابعه لكم خلال موسم حج 2012 كمصدر للمعلومات؟ الرجاء اختيار جميع الإجابات التي تنطبق عليك.
					<ul style="list-style-type: none"> ○ وزارة الحج ○ وزارة الداخلية بالملكة العربية السعودية ○ وزارة الشؤون الإسلامية والأوقاف والدعوة والإرشاد ○ وزارة الصحة ○ هيئة الهلال الأحمر السعودي ○ الخطوط الجوية العربية السعودية ○ الرئاسة العامة لهيئة الأمر بالمعروف والنهي عن المنكر ○ أخرى. يرجى التحديد () ○ لم أقم بزيارة أي موقع الكتروني قبل أو خلال موسم حج 2012 كمصدر للمعلومات

نشكر لكم تعاونكم لإنهاء هذا الاستبيان. رأيكم في الخدمات المقدمة مهم بالنسبة لنا لتمكيننا من تحسين خدمات الحج للأعوام المقبلة. من خلال اجابتم على هذا الاستبيان، فقد تساعدون على تنظيم هذا الحدث المقدس والذي كنتم جزءاً منه.

إذا كان لديك أي أسئلة حول هذه الدراسة الاستقصائية، يرجى الاتصال بي على الايميل salshenawi@sycamores.indstate.edu أو الاتصال +001 (703)901-7791 أو الاتصال على الهاتف الخليوي السعودي 0569224344

APPENDIX E: INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

*Institutional Review Board*

*Terre Haute, Indiana 47809
812-237-3092
Fax 812-237-3092*

DATE: September 20, 2013

TO: Samar Alshenawi, MS

FROM: Indiana State University Institutional Review Board

STUDY TITLE: [490308-2] AN ASSESSMENT OF THE 2012 HAJJ PROVIDING SERVICES, PILGRIMS AND HAJJ AGENCIES STANCE AN EXPLORATORY STUDY

IRB REFERENCE #:

SUBMISSION TYPE: Revision

ACTION: DETERMINATION OF EXEMPT

STATUS DECISION DATE: September 20, 2013

REVIEW CATEGORY: Exemption category # 2

Thank you for your submission of Revision materials for this research study. The Indiana State University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations (45 CFR 46). You do not need to submit continuation requests or a completion report. Should you need to make modifications to your protocol or informed consent forms that do not fall within the exempt categories, you will have to reapply to the IRB for review of your modified study.

Internet Research: You are using an internet platform to collect data on human subjects. Although your study is exempt from IRB review, ISU has specific policies about internet research that you should follow to the best of your ability and capability. Please review Section L. on Internet Research in the IRB Policy Manual.

Informed Consent: All ISU faculty, staff, and students conducting human subjects research within the "exempt" category are still ethically bound to follow the basic ethical principles of the Belmont Report: a) respect for persons; 2) beneficence; and 3) justice. These three principles are best reflected in the practice of obtaining informed consent.

If you have any questions, please contact Dr. Kim Bodey within IRBNet by clicking on the study title on the "My Projects" screen and the "Send Project Mail" button on the left side of the "New Project Message" screen. I wish you well in completing your study.