

Review

An Evaluation of Health Policy Implementation for Hajj Pilgrims in Indonesia

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ABSTRACT

Background: For last decades, the mortality rate of hajj pilgrims from Indonesia was between 2.1 and 3.2 per 1000 hajj pilgrims. At the same time, morbidity affected 87% of the elderly (>65 years old), of which 83% faced high risk of health problems. This is a complex problem affecting hajj health care in Indonesia. The study was aimed to understand what extent of the hajj implementation on health care in Indonesia.

Methods: This review was conducted by abstracting of three studies in Indonesian hajj health care. Two of the studies were based on cross-sectional reviews, while one was a case-control study. The majority of the studies performed laboratory tests to evaluate the disease conditions among hajj pilgrims through secondary data.

Results: First study presented that hajj *Posbindu* (integrated post-coaching) was not functional in managing the health problems of the pilgrims. It shows that the stroke prevalence is 10.9 per 1000 people, Diabetes Mellitus (DM) 10.9% of the people, and coronary heart disease 1.5%. The second study expressed that, according to health *isthitaah* (policy implementation), there were 20% hajj pilgrims who delayed their trip because of health issues. Most of them had chronic kidney disease, dementia, or lung tuberculosis. The policy implementation of health *isthitaah* was not smooth; there was little collaboration between the Ministry of Health and Ministry of Religious Affairs, and the population was not sufficiently educated in the area, resulting in hajj pilgrims with poor knowledge, attitude, and practice in health *isthitaah*. This notion was enforced in the third study.

Conclusion: The coaching according to health *isthitaah* should be encouraged alongside collaboration between the Ministry of Health and Ministry of Religious Affairs. Socialization in public health has to increase according to health *isthitaah*, which can be done by district health centers.

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1. INTRODUCTION

For last decades, the mortality rate of hajj pilgrims from Indonesia was 2.1–3.2 per 1000 hajj pilgrims [1], which is three times more compared with general population. In 2017, the total of hajj pilgrims from the country was 221,000 persons. Most of them were elderly, with high risk of health issues and mortality. Some of the most common issues were cardiovascular disease, respiratory infections, chronic obstructive lung disease, Diabetes Mellitus (DM), hypertension, stroke, urogenital infection, psychiatric disorders, and cancer [2].

In 2013, 87% of hajj pilgrims were elderly (>65 years old), of which 83% faced high risk of health problems [2,3]. According to Saudi Arabia's morbidity data, 42.4% had hypertension, 14.9% DM, 13.9% metabolic syndrome and hyperlipidemia, and 6.8% cardiomegaly [4]. In Indonesia, mortality data shows that 50% of deaths were caused by cardiovascular factors and stroke, 27.5% by lung disease, and 13% by infectious illnesses [5,6].

Hajj health in Indonesia is a complex problem. According to the 2012–2014 audit results on current hajj management, many hajj pilgrims who did not follow the health *isthitaah* still went on to perform hajj, and hajj pilgrim who required hemodialysis were allowed to go to Saudi Arabia even with the lack of professional health care resources. On the other hand, data in 2015 shows that two cases of death among hajj pilgrims were suspected to have no health *isthitaah* [7]. Although *isthitaah* is the term that should be described by three aspects of hajj process requirements for the hajj pilgrims including faith, wealth, and physical; however, it is most frequently referring the sufficient physical and health capability condition that was required by the hajj pilgrims to follow all hajj process with safe and comfort.

To date, there were no solutions to the widespread problems of hajj health care. Surveillance of the hajj pilgrims' health experienced multifaceted obstacles on three phases of stages which is comprised of departure, implementation, and arrival of all hajj process. To address the issue, *Pusat Kesehatan Haji* (Hajj Health Center, Indonesian Ministry of Health) developed JIHAT card, meaning “healthy hajj”. The aim of this study was to create a system that could monitor and evaluate hajj pilgrims in comprehensive and integrated ways [8], thus providing more qualified and professional hajj health care [9].

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Rule No. 15 of the Ministry of Health in Indonesia (2016) explains the three steps of health examination in hajj health care. First is primary health care in one's district, second is medical checkup at a hospital in one's district region, and the third is checking (most of them in the province, or other areas) that the hajj pilgrim is fit to fly before embarking on the journey to Saudi Arabia [10]. The rules also explain health *isthitaah* (meaning the health status of hajj pilgrims meets the minimum standards) [11].

Because of the long duration between departure for hajj and payment of hajj expenses, there is time for coaching of health *isthitaah* through medical checkup, rites hajj training, promotion, and preventive measures, especially in the utility of post-integrated coaching in non-communicable diseases (*Posbindu PTM*), training in physical activity, etc. [12]. At first, *Posbindu PTM* is the concept to implement and maintain good life by routine physical exercise, stress management, and healthy lifestyle at the largest community regarding to Indonesian Ministry of Health guideline for non-communicable disease namely *Gerakan Masyarakat Hidup Sehat – GERMAS* (Community Healthy Life Movement) [13]. Latest, *Posbindu PTM* concept seems positively to being concern for the hajj pilgrims' pre-departure health care [12]. However, it is not well implemented as the medical therapy and treatment is more likely as the main health care paradigm rather than promotive and preventive care in Indonesia [14–16], including in hajj health care.

Hajj problem in health care is complicated and need extra effort to solve it. This study is the abstraction of three studies in hajj health care that we have done, as shown in Figure 1. This study is aimed to understand what extent of the hajj implementation on health care in Indonesia.

2. MATERIALS AND METHODS

2.1. Research Setting

Six major embarkations of Indonesian provinces comprised of Jawa Barat, Jawa Tengah, Jawa Timur, Sulawesi Selatan, Kalimantan Selatan, and Sumatera Barat. Indonesia is a country located in South-East Asia with the biggest Moslem citizen country in the world.

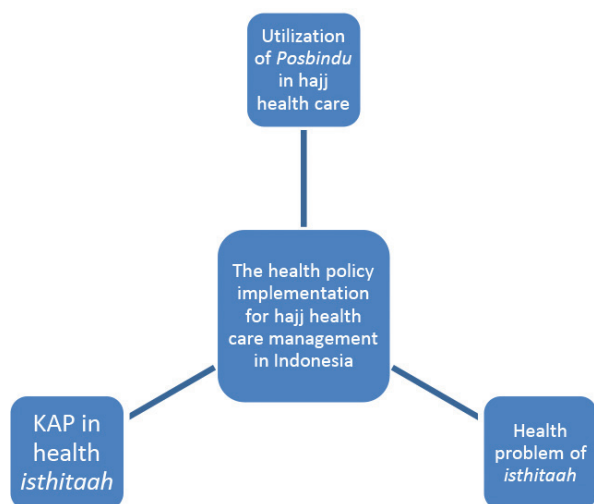


Figure 1 | The abstraction of this study from three studies in the health care management of hajj pilgrims.

2.2. Data Procedure

The study was initiated in September 2019 and approved in early October 2019. The duration was 3 months, from mid-October to December 2019. The data procedure for this study consists of the following: (a) identifying the data from the first study that presented the utility of *Posbindu PTM* in coaching hajj pilgrims, (b) specifying the health policy research at the second study, and (c) exploring on knowledge, attitude and practice at the third study. All these procedures were held subsequently from each participants' studies.

2.3. Data Source

This work was conducted by abstracting of three studies in Indonesian hajj health care that we have done. The first study of 2017 analyzed the utility of *Posbindu PTM* in coaching hajj pilgrims in six provinces, the second study of 2018 was a health policy research in health *isthitaah* during embarkation (national data of Indonesia), and the third study of 2019 was on knowledge, attitude and practice in health *isthitaah*.

All these studies were published as the report working paper that can be only having by formal data request procedure to Data Management Office of The National Institute for Health Research and Development, The Indonesian Ministry of Health (*Laboratorium Manajemen Data Balitbangkes RI*): Jl. Percetakan Negara No. 29, Jakarta, Indonesia 10560, Phone: (+62-21) 4261088. These studies were funded by The Center for Health Hajj and The National Institute for Health Research and Development, The Indonesian Ministry of Health.

2.4. Instrument and Data Analysis

In majority of the studies, laboratory tests were performed to evaluate the disease conditions among hajj pilgrims. Various kinds of instruments were used in the quantitative studies and some in the qualitative studies. The quantitative data having by valid and reliable questionnaires were used to measure the demographic data in selected participants of these studies, while calibrated micro-toise and stature meter measured the body and height scales as Body Mass Index (BMI) index. Besides participants were having blood sample test, they also were having systolic and diastolic blood pressure measurement by calibrated sphygmomanometer.

The qualitative data were measured by focus group discussion (FGD) and depth-interview to stakeholders include hajj task force team that was formed by each regional which consisted of regional health office, regional office of ministry of religion, primary and secondary health care facilities. Meanwhile, checklist observation in qualitative guideline was also used to capture the related legal data and information of each studies objectives.

Regarding the study design of the selected pieces of research, two of the studies were based on cross-sectional studies, while the last one was a case-control study. SPSS statistical software that was licensed by the Faculty of Public Health - Universitas Indonesia was used to run the frequency distribution analysis which presented the data proportion of data, and carried on with Chi-square (χ^2) analysis in exploring the categorical data relationship between the variables.

Meanwhile, the content analysis produced and managed the main findings from the qualitative data of FGD and depth-interview.

3. RESULTS

Table 1 shows that the variable for education, occupation, economic status, and insurance was significant ($p < 0.05$) compared with the intervention and control groups. The percentages of men and women were almost equal. Most of the hajj pilgrims fell in the 46–65 age group.

Table 2 shows the variables tested in Indonesia (pre-testing) before hajj pilgrims departed to Saudi Arabia. Testing was also done in Saudi Arabia (post-testing). The diastolic blood pressure, total cholesterol, and blood glucose level generally did not change between pre- and post-testing ($p < 0.05$). The other variables, systolic blood pressure and BMI, were not consistent in pre- and post-testing.

The evaluation of health *isthitaah* shows that the number of hajj pilgrims who delayed their trip to Saudi Arabia, according to *isthitaah's* criteria in 2016, was about 118 persons—64 men and 54 women, most of them in the >65 years age group. The profile of the diseases is shown in Table 3.

3.1. Disease Pattern of Hajj Pilgrims Encountering Delay (According to *isthitaah*)

Chronic kidney disease was the most frequently reported disease (35.1%), followed by dementia (11.7%), and pulmonary tuberculosis (7.4%).

Table 1 | Characteristics of hajj pilgrims [17]

Variables	Intervention		Control		p-value
	n	Percentage	n	Percentage	
Sex					0.203
Men	76	50.7	65	43.3	
Women	74	49.3	85	56.7	
Age group (years)					0.202
<25	0	0	2	1.7	
25–45	46	30.7	32	27.6	
46–65	60	60.0	76	65.5	
>65	93	9.3	6	5.2	
Education					0
Low	24	16.0	35	23.3	
Middle	67	44.7	87	58.0	
High	59	39.3	28	18.7	
Occupation					0.026
Unemployed	2	1.3	2	1.3	
Housewife	48	32.0	54	36.0	
Govt. employee	13	8.7	10	6.7	
Private employee	32	21.3	12	8.0	
Entrepreneur	33	22.0	51	34.0	
Pensioner	17	11.3	14	9.3	
Others	5	3.3	7	4.7	
Economic status					0.009
Quintile 1	19	12.7	11	7.3	
Quintile 2	82	54.7	94	62.7	
Quintile 3	23	15.3	35	23.3	
Quintile 4	8	5.3	5	3.3	
Quintile 5	18	12	5	3.3	
Have insurance					0
Yes	79	52.7	30	20.0	
No	71	47.3	120	80.0	

Table 2 | Health problems of hajj pilgrims [17]

Variables	Pre-test				p-value	Post-test				p-value
	Intervention		Control			Intervention		Control		
	n	Percentage	n	Percentage		n	Percentage	n	Percentage	
Systole					0.734					0.026
<140 mm/Hg	139	92.7	108	72.0		134	89.3	107	71.3	
≥140 mm Hg	11	7.3	42	28.0		16	10.7	43	28.7	
Diastole					0.027					0.03
<90 mm Hg	105	70.0	97	64.7		108	72.0	95	63.3	
≥90 mm Hg	45	30.0	53	35.3		42	28.0	55	36.7	
BMI					0.014					0.106
Slim	8	5.3	7	4.7		6	4	7	4.7	
Normal	69	46	102	68		60	40	71	47.3	
Overweight	36	24	27	18		34	22.7	41	27.3	
Obese	37	24.7	16	10.7		50	33.3	31	20.7	
Total cholesterol					0.002					0.001
Normal	135	90	141	94.0		150	100	150	100	
High	15	10	9	6.0		0	0	0	0	
Blood glucose					0.000					0.001
Normal	134	89.3	143	95.3		150	100	150	100	
High	16	10.7	7	4.7		0	0	0	0	

Table 3 | Hajj pilgrims who delayed their trip to Saudi Arabia [18]

No.	Diseases	n (%)
1	Chronic kidney disease	33 (35.1)
2	Dementia	11 (11.7)
3	Pulmonary tuberculosis (TB)	7 (7.4)
4	Type 2 DM	6 (6.4)
5	Essential hypertension	6 (6.4)
6	Senility	5 (5.3)
7	Heart failure	4 (4.3)
8	Cancer	4 (4.3)
9	Fracture	2 (2.1)
10	Parkinson's disease	2 (2.1)
11	Acute psychosis	2 (2.1)
12	Schizophrenia	2 (2.1)
13	Stroke	1 (1.1)
14	Acute kidney injury	1 (1.1)
15	Ascites	1 (1.1)
16	Hypertensive heart disease	1 (1.1)
17	Chronic ischemic heart disease	1 (1.1)
18	Cardiomegaly	1 (1.1)
19	Melena	1 (1.1)
20	Rheumatoid arthritis	1 (1.1)
21	Hepatitis	1 (1.1)
22	Varicella	1 (1.1)

3.2. Policy for Hajj Pilgrims

At the time of writing, the implementation of Rule No. 15 of the Ministry of Health in Indonesia (2016) about health *isthitaah* is ongoing. This rule aims to manage the medical examination system of hajj pilgrims in Indonesia. There are three steps involved in this system [9]:

- (a) The first step involves primary health care for hajj pilgrims in their domicile, to determine whether a person is a health risk or not.
- (b) The second step is carried out in the hospital to determine whether the hajj pilgrim needs assistance (be it a person or drugs, according to one's disease) or is fit to go independently.
- (c) The third step is embarkation, to determine whether the hajj pilgrim is fit to fly to Saudi Arabia or not.

A pilgrim will be provided with assistance if he/she is 60 years old or above and has a disease, not including the list in Rule No. 15 (2016). A hajj pilgrim who does not meet the temporary requirements is an individual who [19]:

- (a) Does not have international vaccination.
- (b) Has one or more of the following diseases: lung TB with positive BTA, MDR lung TB, uncontrolled DM, hyperthyroid, HIV/AIDS with chronic diarrhea, acute stroke, and anemia.
- (c) Is suspected or confirmed to have an epidemic disease.
- (d) Has acute psychosis.
- (e) Has fracture or back pain without neurological complication.
- (f) Is pregnant <14 weeks or >26 weeks.

Meanwhile, a hajj pilgrim who does not meet the requirement of *isthitaah* is someone who has [20]:

- (a) A chronic disease (stage 4 chronic obstructive pulmonary disease, heart failure, stage 4 chronic kidney disease requiring hemodialysis, stage 4 AIDS with infections, hemorrhagic stroke).
- (b) Schizophrenia, dementia, and mental retardation.
- (c) Stage 4 cancer, totally drug-resistant (TDR) lung TB, cirrhosis, and decompensated hepatitis.

3.3. Policy Implementation Gap of Health *Isthitaah*

In the system of medical checks for hajj pilgrims in Indonesia, there needs to be coordination between the primary health care, hospital, and embarkation stages. In primary health care, the hajj pilgrims undergo a medical examination to get a diagnosis of their health status, before going to the hospital to undergo referral examination for a more complete profile of their health status. At the embarkation stage, hajj pilgrims only need to undergo screening to confirm that they are fit to fly.

It is important to standardize diagnosis in health *isthitaah* and socialization of health workers in primary health care. One of the things that could be done was to hold a workshop for health workers in each province (there are 34 provinces in Indonesia). The *isthitaah's* criteria were not only in medical diagnosis but functional diagnosis too. Of all hajj pilgrims whose trip to Saudi Arabia was delayed, there were 20% who could go, if the technical criteria were enforced.

Hajj pilgrims with high health risk should be coached 6 months before departure. It is hoped that coaching could repair the health status of hajj pilgrims. The coaching is a collaboration between the Ministry of Health and Ministry of Religious Affairs in manasic training. For example, sports that suit the health conditions of hajj pilgrims can be introduced, such as low-impact aerobic gymnastics (at 60% of maximum heart rate) for healthy hajj pilgrims. It appears that medical examination of health *isthitaah* should be held a year before departure, not in the year of departure to Saudi Arabia.

3.4. The Result of Knowledge, Attitude, and Practice in Health *Isthitaah*

Table 4 consists of composite criteria in health *isthitaah* according to the knowledge, attitude, and practice of hajj pilgrims. Only the attitude variable scores mostly "good".

The dominant variables in the last model of multivariate analysis that were connected to the practice of health *isthitaah* were

Table 4 | Scales of knowledge, attitude, and practice in health *isthitaah* [21]

Scale	Knowledge (%)	Attitude (%)	Practice (%)
Good	32.5	86.8	55
Middle	37.2	12.8	43.8
Bad	30	0.5	1.5

Table 5 Multivariate of correlation between knowledge, attitude, and waiting time in the practice of health *isthitaah* in Indonesia [21]

Variables	β	p-value	Exponent (β)	95% CI	
				Lower	Upper
Knowledge	0.524	0.021	2.689	1.081	2.839
Attitude	0.103	0.035	1.108	1.007	1.219
Waiting time	-0.634	0.000	0.530	0.379	0.688
Constant	2.121	0.087	6.571	–	–

knowledge, attitude, and waiting time (Table 5). The odds ratio (OR) was knowledge with 2.7 times (95% CI 1.081–2.839, and $p = 0.021$).

4. DISCUSSION

This brief work intends to provide an analysis of three studies on the pattern of health problems over 5 years with regards to hajj pilgrims in Indonesia. This part discusses the outcomes of the study on policy implementation of health *isthitaah* for pilgrims during pilgrimage and suggestions for future investigation. In the first study, we could see that hajj *Posbindu* (integrated post-coaching) was not functional in managing the health problems of the pilgrims. Table 1 showed the profile of hajj pilgrims in Indonesia, who were mostly women aged 46 and above, held the occupation housewife or entrepreneur, and were in the second quintile of the socioeconomic status. In Table 2, we saw that hypertension was a big problem. It shows that the rate of hypertension as diagnosed by medical doctors was 8.4%, but 34.1% by measuring systole and diastole. Additionally, stroke affected 10.9 per 1000 people, DM 10.9% of the people, and coronary heart disease 1.5% [22].

The second study expressed that, according to health *isthitaah* (policy implementation), there were 20% hajj pilgrims who delayed their trip because of health issues. Most of them had chronic kidney disease, dementia, or lung TB. It shows that chronic kidney disease affected 19.3% of the pilgrims, making it a national health problem in Indonesia [11,17] while in the general population it occurred on two per 1000 which its most frequently affected to age of 75 years old (0.6%) which the prevalence at male (0.3%) higher than female (0.2%) [23,24]. The policy implementation of health *isthitaah* was not smooth; there was little collaboration between the Ministry of Health and Ministry of Religious Affairs, and the population was not sufficiently educated in the area, resulting in hajj pilgrims with poor knowledge, attitude, and practice in health *isthitaah*. This notion was enforced in the third study. In the multivariate analysis, only knowledge correlated with practice in getting OR.

5. CONCLUSION

Posbindu (post-integrated coaching) was not functional in managing the health problems of hajj pilgrims in 2015. The implementation of health *isthitaah* in Indonesia in 2016 caused 20% of hajj pilgrims to delay their departure to Kingdom of Saudi Arabia. Related to the health *isthitaah* policy, only the attitude variable scored mostly “good”. Dominant variables connected to the practice of health *isthitaah* were knowledge, attitude, and waiting time in the last model of multivariate analysis. The OR was knowledge at 2.7 times.

Policy implementation in health *isthitaah* should improve, especially in the health area and among hajj pilgrims (the population). The results of the three studies found that coaching according to health *isthitaah* should be encouraged by empowering collaboration between the Ministry of Health and Ministry of Religious Affairs. Public health awareness and education should increase according to health *isthitaah*, which can be done by district health centers.

This study provides an evaluation on Health Policy Implementation for Hajj pilgrims in Indonesia. Further study is needed that will present more specifically on Hajj pilgrimage that presents major public health and infection control challenges, especially for elderly who are exposed to fatigue and extreme weather conditions. In this context, it is important for national health agencies and those providing health care services to Hajj pilgrims to implement efficient strategies, before and during the pilgrimage, to increase awareness of the health hazards during the Hajj, and to improve health management of returning pilgrims from Kingdom of Saudi Arabia (KSA) to limit the spreading of infectious diseases that are very common during the Hajj.

CONFLICTS OF INTEREST

The authors declare they have no conflicts of interest.

AUTHORS' CONTRIBUTION

RR planned and conducted the study. AA wrote the first draft of the manuscript and analyzed the findings report. RO and TR were both involved in the critical revision of the report and manuscript.

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