BUKTI KORESPONDENSI

Judul Artikel : The Impact of Classical Cardiovascular Risk Factors on Hospitalization and Mortality among Hajj Pilgrims

Jurnal : Scientific World Journal

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No.	Perihal	Tanggal	Komentar Editor Jurnal	Komentar Penulis
1	Pengiriman Artikel melalui website jurnal	28 Maret 2022	Tim editor telah meninjau naskah Anda " The impact of classical cardiovascular risk factors on hospitalization and mortality among Hajj pilgrims " dengan ID No. 9037159 dan menemukan masalah berikut yang perlu diselesaikan sebelum melanjutkan: Penulis & Afiliasi (1) Daftar penulis pada sistem dan file PDF berbeda. Harap konfirmasikan daftar penulis yang benar beserta alamat email dan afiliasi penulis dan perbarui catatan pada sistem. Makalah ini telah dikembalikan ke draft karena alasan yang disebutkan di atas. Diminta memperbaiki via website jurnal:https://review.hindawi.com/ **Email** : 28 Maret 2022 pukul 13.11	Penulis telah memperbaiki dan mengirimkan perbaikan daftar penulis melalui website jurnal. Screnshoot website jurnal terlampir
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The impact of classical cardiovascular risk factors on hospitalization and mortality among Hajj pilgrims

Meity Ardiana SA CA [1], Eka Rahayu Utami [1], Makhyan Jibril Al-Farabi [1], Yusuf Azmi [1]
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Editorial Assistant
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28 March 2022

Academic Editor, The Scientific World Journal

Dear Professor/Doctor,

We wish to submit the manuscript entitled **"The impact of classical cardiovascular risk factors on hospitalization and mortality among Hajj pilgrims"** for consideration of publication in **The Scientific World Journal**.

Hajj, an annual pilgrimage in the Kingdom of Saudi Arabia (KSA), is the largest mass gathering event in the world, performed by more than 2 million Muslims from more than 183 countries. Indonesia is the largest single source of pilgrims, with more than 200,000 people contributing about 10% of total Hajj pilgrims. The increasing number of pilgrims combined with extreme physical stressors increases the health risks and exacerbation of underlying conditions. Cardiovascular disease (CVD) is the leading cause of morbidity and mortality during Hajj. Herein, we aim to identify the impact of classical factors of the cardiovascular event and impact on hospitalization requirement among Hajj.

This study showed that pilgrims with classical cardiovascular risk factors were associated with increased hospitalization and mortality during the Hajj period. Cardiovascular disease was accounted for about 13% of hospitalization and the majority (38.2%) of the causes of death. These findings indicate the need to identify classical cardiovascular risk factors before departure. Cardiac prevention approaches and monitoring are needed for pilgrims with CVD or those at risk of CVD during the Hajj period to reduce hospitalization and death associated with cardiovascular events.

We believe this study may fulfill scientific holes in the field and hopefully fit the scope of your journal. This study has not been published in part or whole or is not under consideration for publication elsewhere. All authors in this study have agreed to be listed and approved the manuscript.

Thank you for considering our work for publication in The Scientific World Journal.

Yours sincerely,

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The impact of classical cardiovascular risk factors on hospitalization and mortality among Hajj pilgrims

Running title:

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Abstract

Background. Cardiovascular disease (CVD) is the leading cause of morbidity and mortality during Hajj. ~~This study aims to~~The objective of the present study was to ~~-~~examine the effect of classical cardiovascular disease risk factors on ~~identify the impact of classical factors of the cardiovascular event and impact on~~ mortality and hospitalization ~~requirement~~ among Hajj pilgrims from East Java, Indonesia during 2017, 2018, and 2019 ~~Hajj~~.

Methods. This study was a retrospective cohort of Hajj pilgrims from East Java, Indonesia, from 2017 to 2019. The data of risk factors were obtained from the pre-embarkation Hajj screening records. The diagnosis of hospitalization and cause of death during the Hajj period were obtained from the medical report and hospital/flight doctor death certificate.

Results. A total of 72078 eligible subjects were included in this study. 33807 (46.9%) were men, and 38271 (53.1%) were women, and the majority (35%) were aged between 50 and 59 years old. A total of 42446 pilgrims (58.9%) were classified as high risk due to underlying health conditions such as hypertension, diabetes, or if they were aged 60 years or older. The overall hospitalization rate is 971 per 100,000 pilgrims and the overall death rate is 240 deaths per 100,000 pilgrims. Multivariate analysis using logistic regression showed that male gender, age > 50 years old, hypertension grade II-III, diabetes, overweight and obesity were associated with higher risk of hospitalization. Moreover, male gender, diabetes, and overweight were associated with higher risk of mortality. Of all hospitalized patients, 92 patients (13.1%) had an initial diagnosis of CVD, and CVD is the main cause of mortality (38.2%) of pilgrims.

Conclusion. Pilgrims with classical cardiovascular risk factors were associated with increased hospitalization and mortality.

Keywords: Hajj, pilgrims, classical cardiovascular risk factor, hospitalization, mortality

Introduction

Hajj, an annual pilgrimage in the Kingdom of Saudi Arabia (KSA), is the largest annual global temporary migration and largest mass gathering event in the world, performed by more than 2 million Muslims from more than 183 countries.(1) Indonesia, as the country with the largest Muslim population, holds the largest Hajj visa quota and is the largest single source of pilgrims, with more than 200,000 people contributing about 10% of total Hajj pilgrims.(2) The increasing number of pilgrims combined with extreme physical stressors such as sun exposure, heat, thirst, traffic jams, and steep inclines for a long period increases the health risks and exacerbation of underlying conditions.(3)

Cardiovascular disease (CVD), including coronary heart disease, hypertension, congestive heart failure, and arrhythmias, is the leading cause of morbidity and mortality during Hajj.(4) It accounts for about 25% of hospitalizations and 64% of ICU admissions among pilgrims in Hajj.(5,6) Cardiovascular disease was reported as the most common cause of death during Hajj, accounting for 66% of all deaths (446 deaths) of 206,831 Indonesian pilgrims in Hajj 2008.(2) Due to the high morbidity and mortality of CVD among Hajj pilgrims, it is important to know the risk factors and their significance in increasing the need for hospitalization and mortality. This study aims to identify the impact of classical cardiovascular risk factors on hospitalization requirements among pilgrims from East Java during the 2017, 2018, and 2019 Hajj.

Methods

Data Collection

The design of this study was a retrospective cohort, non-intervention study. The sample population was all Hajj pilgrims from East Java, Indonesia, from 2017 to 2019. The follow-up period is 30-50 days (median 43 days) covering the entire Hajj period from departure to KSA to return to Indonesia (Figure 1). Data of risk factors were obtained from the Hajj medical service records carried out by trained health workers during the pre-embarkation medical assessment. During pre-departure, pilgrims undertake a medical test to receive a meningitis vaccine and confirm travel fitness. Pilgrims aged 60 years old or older and had at least one preexisting medical condition (e.g., hypertension and diabetes mellitus) were classified as high risk. Variables extracted from pre-departure screening records include demographic data of name, age, gender, home address, and physical examination data, including blood pressure measurement and body mass index (BMI) calculation. Hypertension was defined following the guidelines from the European Society of Cardiology (ESC) 2018 with office systolic blood pressure (SBP) values of 140 and/or diastolic blood pressure (DBP) of 90 mmHg. The classification of hypertension is divided into grade 1 with SBP 140-159 mmHg and/or DBP 90-99 mmHg, grade 2 with SBP 160-179 mmHg and/or DBP 100-109 mmHg, and grade 3 with SBP 180 mmHg and/or DBP 110 mmHg.(7) Obesity was defined based on BMI following the World Health Organization (WHO) classification for overweight and obesity recommendation for Asian population. Participants with BMIs ranging from 18.5–22.9 kg/m2 were categorized as normal, BMIs less than 18.5 kg/m2 were categorized as underweight, BMIs ranging from 23.0–24.9 kg/m2 were categorized as overweight, BMIs ranging from 25–29.9 kg/m2 were categorized as obesity class I, BMIs ≥30 kg/m2 were categorized as obesity class II.(8)

Postprandial blood sugar and the history of cigarette smoking were extracted from the medical report. Diabetes was defined according to the American Diabetes Association (ADA) criteria as a self-reported diagnosis determined previously by a healthcare professional or among participants without self-reported diabetes using an oral glucose tolerance test with a two-hour plasma glucose 200 mg/dL (11.1 mmol)/L).(9)

The diagnosis of hospitalization during the Hajj period from 2017 to 2019 was obtained from the medical report. Cause of death was obtained from hospital or flight doctor death certificate. Hospitalizations and deaths during the Hajj period from 2017 to 2019 were documented by the Indonesian public health team based in Saudi Arabia. Diagnosis of hospitalization and mortality data were coded according to the International Classification of Diseases-10 (ICD-10) coding.

Classical cardiovascular risk factors

Classical cardiovascular risk factors were identified in the Framingham Heart Study as conferring increased risk of CVD in the general population.(10) Classical cardiovascular risk factors analyzed in this study were age, ~~men~~gender, hypertension, diabetes, smoking, and obesity. Blood pressure (BP) determination was made using a periodically calibrated mercury sphygmomanometer. Diabetes was diagnosed at a two-hour blood sugar greater than or equal to 200 mg/dl of oral glucose tolerance test (OGTT).(11)

Statistical Analysis

All statistical analyses were performed using SPSS 20.0. The normal distribution of data was evaluated using the Kolmogorov-Smirnov test. Continuous variables were presented as median and 25th/75th percentiles, while categorical variables were presented as absolute frequencies and percentages.(12) Pearson's Chi-square or Fisher's exact tests were used to

compare univariate continuous variables, and independent T-tests were used to compare univariate numeric categorical variables. A P-value of < 0.05 was considered statistically significant. Furthermore, multivariate analysis was performed using logistic regression to to identify which classical cardiovascular risk factors predict hospitalization and mortality among Hajj pilgrims. The variables included in the logistic regression analysis were variables with P value < 0.25 in bivariate analysis. Receiver operating characteristic (ROC) curves were constructed for classical cardiovascular risk factors and two outcomes of hospitalization and mortality.

Ethics Approval

The clinical and epidemiological data collection was submitted for ethical review to the Ministry of Health of the Republic of Indonesia with approval number of HJ.01.03/I/2900/2020.

Results

Characteristics of patients

Of the 106680 subjects obtained from pilgrims attending for the Hajj period from 2017 to 2019, 34602 (32.43 %) were excluded from analysis due to incompleteness in demographic data, physical examination, laboratory results, or patient outcomes. The final sample was therefore composed of 72078 eligible subjects in the study (Table 1) with 21488, 23865 and 26725 pilgrims respectively from the 2017, 2018 and 2019 Hajj years. Of these, 33807 (46.9%) were men and 38271 were (53.1%) women**.** All pilgrims were aged ≥ 18 years old with a median age of 54 years old (47 - 61), and the majority (35%) were aged between 50 and 59 years old. From the three Hajj year periods from 2017 to 2019, there were significant differences in age groups, prevalence of hypertension, BMI distribution, average fasting blood sugar level, and smoking history. In addition, there were also differences in the hospitalization rate and mortality of the Hajj participants from 2017 to 2019. The highest reported hospitalization rate was in the 2019 Hajj year but with the highest mortality rate was in 2017.

A total of 42446 pilgrims (58.9%) were classified as high risk due to underlying health conditions such as hypertension, diabetes, or if they were aged 60 years or older. An increase in BMI was also common in pilgrims, with 13922 (19.3%) subjects being overweight and 36080 (50.1%) subjects being diagnosed as obese. In addition, smoking history was recorded in 10389 (14.4%) subjects, with the majority were men (10202 subjects; 98.2%)

Factors contributing to the hospitalization in pilgrims

During 2017-2019, 700 out of 72078 pilgrims were required hospitalization during Hajj in Saudi Arabia (Table 2). The overall hospitalization rate is 971 per 100,000 pilgrims. Men were associated with increased hospitalization than women (1.18% vs 0.80%, $p<0.001$). Pilgrims

aged 60 years or older (2.17%) was also required more hospitalization compared to younger ones, and the rates significantly increased with increasing age ($p<0.001$). Hospitalization was required in 4.44% of patients with hypertension (versus 0.79% of patients without hypertension; $P < 0.001$) and 2.28% in patients with diabetes (versus 0.82% of patients without diabetes, $P < 0.001$). Obese (BMI ≥ 30) and underweight (BMI < 18.5) pilgrims had the highest percentage of hospitalization (3.18% and 3.17%, respectively) compared to pilgrims with normal BMI (BMI 18.5-24.9; 1.09%; $p < 0.001$). There was no association between smoking history and hospitalization among pilgrims ($p = 0.905$).

Factors contribute to mortality in pilgrims

During 2017-2019, 173 out of 72078 pilgrims died during Hajj in Saudi Arabia. The overall death rate is 240 deaths per 100,000 pilgrims (Table 2). The mortality rate was higher in men (144 deaths per 100,000 pilgrims) than in women (96 deaths per 100,000 pilgrims, $p<0.001$). The mortality rate was highest in those aged 60 years or older (593 per 100,000 pilgrims), and rates significantly increased with increasing age ($p<0.001$). Mortality was found in 0.29% of patients with hypertension (versus 0.21% of patients without hypertension; $P < 0.001$) and 0.55% in patients with diabetes (versus 0.20% of patients without diabetes, $P < 0.001$). Underweight pilgrims (BMI < 18.5) had the highest percentage of mortality (0.79%) followed pilgrims with normal BMI (BMI 18.5-24.9; 0.25%) and overweight and obese pilgrims (BMI ≥ 25; 0.16%; $p < 0.001$). There was no association between smoking history and mortality among pilgrims ($p = 0.839$). In addition, when combined, the cumulative total of classical cardiovascular risk factors increases with the incidence of hospitalization and death (Figure 2).

Multivariate analysis using logistic regression showed that male gender, age > 50 years old, hypertension grade II-III, diabetes, overweight and obesity were associated with higher risk of hospitalization. Moreover, several variables such as male gender, diabetes, and overweight, but not obesity, were associated with higher risk of mortality (Table 3). Areas under the ROC curve (AUC) for male gender, age, hypertension, diabetes, BMI and risk of hospitalization was 0.762. While AUC for male gender, diabetes, BMI and mortality was 0.806 (Figure 3).

Diagnosis during hospitalization and cause of mortality

Of all hospitalized patients (n = 700 pilgrims), 92 patients (13.1%) had an initial diagnosis of CVD (Figure 4). The top three CVDs leading to hospitalization were congestive heart failure (24 pilgrims), acute myocardial infarction (12 pilgrims), and hypertensive heart disease (9 pilgrims). Meanwhile, CVD is the main cause of mortality for pilgrims (38.2%), followed by respiratory diseases (29.5%), circulatory diseases (9.8%), and infectious and parasitic diseases (7.5%) (Figure 5).

Discussion

Over the last few decades, CVD has emerged as an important cause of hospital admission and death among Hajj pilgrims. Especially pilgrims with preexisting heart disease are at high risk of experiencing physical stress leading to ischemia.(4) A cross-sectional study analyzing admissions to 1487 beds and 104 intensive care units (ICUs) from three hospitals in Arafat and four hospitals in Mena was conducted during the Hajj 2004. This study showed that CVD accounted for nearly 25% of admissions, including congestive heart failure, hypertension, ischemic heart disease, and arrhythmias. Furthermore, it also showed that about 64% of ICU admissions were due to CVD, which was dominated by left ventricular failure and myocardial infarction. In addition, more than 70% of these ICU patients had underlying diseases that required medical attention, with more than half of the comorbid were CVDs such as congestive heart failure, hypertension, and ischemic heart disease.(5,6) Another prospective cohort study from four hospitals in Mina during the 2009 Hajj period showed that CVD (23.6%) was the second most critically ill patient after severe infections (46.5%) with a diagnosis of myocardial infarction, atrial fibrillation (4.7%), and cardiogenic shock (2.7%).(13) CVD was the most common cause of morbidity (34.1%) in patients necessitating admission to a tertiary care hospital in Makkah during the 2005 Hajj.(14) Previous study in Indonesia showed the association between CVD and increased morbidity and hospital admissions among Hajj pilgrims. Moreover, CVD the most common cause of death during Hajj, accounting for 66% of all deaths (446 deaths) of 206,831 Indonesian pilgrims in Hajj 2008.(2) Cardiovascular disease during Hajj was also reported by Saudi Arabian Ministry of Health as the most common cause of death compared to other medical diseases, both communicable and non-communicable diseases~~In addition to increased morbidity and hospital admissions, CVD is the most common cause of death during Hajj, accounting for 66% of all deaths (446 deaths) of 206,831~~

~~Indonesian pilgrims in Hajj 2008.(2) Cardiovascular diseases during the Pilgrimage cause more death than other medical ailments, both communicable and non-communicable.~~ (15) ~~(4)~~

Due to the high morbidity and mortality of CVD among Hajj pilgrims, it is important to know the risk factors and their significance in increasing the need for hospitalization and mortality. In the second half of the twentieth century, many epidemiological studies identified risk factors for CVD that have contributed to primary prevention. One of the most widely used risk prediction equations is the Framingham model to estimate the 10-year risk of coronary heart disease (CHD). The Framingham model is based on classical risk factors, including age, gender, blood pressure, low-density lipoprotein (LDL) and high-density lipoprotein (HDL) cholesterol, smoking, and diabetes.(10) Although long-standing, recent evidence-based on population risk calculations in the United States using the Framingham 10-year risk estimate for CHD suggests that 75% to 85% of CHD can be prevented by avoiding classic risk factors.(16)

Identifying cardiovascular risk factors in Hajj participants is important because it is estimated that the obligation to carry out the rites during Hajj increases the burden on cardiac function, especially in pilgrims with underlying CVD. Sudden strenuous physical activity results in stressful exercises and triggers several mechanisms, including the decreased venous return and decreased cardiac output that may lead to an acute cardiovascular attack. This process is counterproductive and can compromise disease management and, in extreme cases, can be fatal.(4) This condition is exacerbated by the heat in which sweating causes fluid loss, leading to dehydration and hypovolemia, decreased cardiac output, and loss of body fluids into the interstitial fluid spaces with subsequent cardiovascular collapse. If heat stress continues beyond this compensatory stage, the central venous pressure falls sharply, causing a further

243 rise in core body temperature with subsequent failure of thermoregulatory mechanisms and
244 leading to heatstroke.(17)

245 In multivariate analysis, diabetes consistently and significantly increased the risk of
246 hospitalization and death of Hajj participants in this study. A systematic review showed that
247 the prevalence of diabetes is one of the most common comorbidities found in Hajj pilgrims
248 with a prevalence of 5%.(18) Diabetes and related complications have also been reported as
249 a very influential risk factor and is one of the main causes of hospitalization and mortality
250 among pilgrims.(19) In addition, the male gender is also more often found in hospitalized and
251 deceased pilgrims. This was also found in a report from Indian Hajj Pilgrims where of the 163
252 deaths, 68.7% were male and the most common terminal event was cardiorespiratory
253 arrest.(20) Interestingly, this research also showed that underweight pilgrims (BMI < 18.5)
254 had a higher rate of hospitalization (3.18%) and mortality (1.10%) compared to normal BMI,
255 although this risk factor failed to show significant impact on multivariate analysis. This
256 unexpected result of the increased mortality risk in underweight group can be associated with
257 various clinical factors, such as poor nutritional status, sarcopenia, and aging in underweight
258 population. Previous research also suggested that underweight may be a risk for CVD disease
259 with 19.7% greater risk than the normal-weight. (21)

260 A study in Iran provided intervention to prospective pilgrims with a history of CVD. These
261 interventions include cancellation of prospective Hajj pilgrims with severe CVD (history of
262 recent myocardial infarction, unstable angina, advanced heart failure, and uncontrolled
263 hypertension) and provision of adequate therapy and monitoring for other patients with
264 stable angina, mild heart failure, controlled hypertension, and other cardiovascular disorders.
265 It showed that mortality and hospitalization rates were significantly reduced in the

intervention population. Iranian study and the results of this study support the need for health screening before departure, especially for classical cardiovascular risk factors. Pilgrims with severe CVD should be excluded from Hajj. Other pilgrims with CVD or those at risk of CVD need appropriate intervention and monitoring during Hajj to reduce hospitalization and mortality rates in Hajj pilgrims.

When compared to studies with similar area and period to this study, the results were similar. A study that screened cardiovascular risk factors in adults aged 40 years and in Malang, East Java, in 2016–2017 showed that out of 22,093 participants, 6,455 (29.2%) had high cardiovascular risk with an estimated 10-year CVD risk of ≥ 30%. In this study, high cardiovascular risk was defined as the presence of coronary heart disease, stroke or other atherosclerotic disease.(22) Another study analyzing the report of Riskesdas 2013, a nationally representative survey conducted by the Indonesian Ministry of Health in 2013, estimated the coronary heart disease (CHD) burden caused by five major and modifiable vascular risk factors: smoking, hypertension, diabetes, increased total cholesterol, and overweight. The results of this study showed hypertension as a major vascular risk factor (20%–25% of all CHD) and smoking in men explains most of the vascular events (25% of CHD).(23)

Study limitation

Although this study uses large data of pilgrims from three time periods of Hajj (2017-2019), the sample size only represents a portion of the overall Hajj pilgrims in Indonesia. In addition, the retrospective cohort design using only univariate analysis limits the generalizability of the findings. Data on risk factors were collected from pre-departure screening reports so that the responses obtained were susceptible to information bias. The multivariate analysis showed

289 that overweight, but not obesity, significantly contributed to mortality. This may be due to
290 the low mortality rate of 173 from the total 71904 (0.24%) hajj participants, thus the
291 distribution may not be representative.

Conclusion

Pilgrims with classical cardiovascular risk factors were associated with increased hospitalization and mortality. Cardiovascular disease was accounted for about 13% of hospitalization and the majority (38.2%) of the causes of death. These findings indicate the need to identify classical cardiovascular risk factors before departure. Cardiac prevention approaches and monitoring are needed for pilgrims with CVD or those at risk of CVD during the Hajj period to reduce hospitalization and death associated with cardiovascular events.

Disclosure statement

Declaration of Conflicting Interests

The authors declare no Conflict of Interest for this article.

Ethics Approval

Not applicable.

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References

1. Yezli S, Yassin Y, Awam A, Attar A, Al-Jahdali E, Alotaibi B. Umrah. An opportunity for mass gatherings health research. Saudi Med J. 2017 Aug;38(8):868–71.

2. Pane M, Imari S, Alwi Q, Nyoman Kandun I, Cook AR, Samaan G. Causes of Mortality for Indonesian Hajj Pilgrims: Comparison between Routine Death Certificate and Verbal Autopsy Findings. PLoS One [Internet]. 2013 Aug 21;8(8):e73243. Available from: https://doi.org/10.1371/journal.pone.0073243

3. Gautret P, Soula G, Delmont J, Parola P, Brouqui P. Common health hazards in French pilgrims during the Hajj of 2007: a prospective cohort study. J Travel Med. 2009;16(6):377–81.

4. Al Shimemeri A. Cardiovascular disease in Hajj pilgrims. J Saudi Hear Assoc. 2012;24(2):123–7.

5. Madani TA, Ghabrah TM, Al-Hedaithy MA, Alhazmi MA, Alazraqi TA, Albarrak AM, et al. Causes of hospitalization of pilgrims in the Hajj season of the Islamic year 1423 (2003). Ann Saudi Med [Internet]. 2006;26(5):346–51. Available from: https://pubmed.ncbi.nlm.nih.gov/17019102

6. Madani TA, Ghabrah TM, Albarrak AM, Alhazmi MA, Alazraqi TA, Althaqafi AO, et al. Causes of admission to intensive care units in the Hajj period of the Islamic year 1424 (2004). Ann Saudi Med. 2007;27(2):101–5.

7. Williams B, Mancia G, Spiering W, Agabiti Rosei E, Azizi M, Burnier M, et al. 2018 ESC/ESH Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC)

and the European Society of Hypertension (ESH). Eur Heart J. 2018;39(33):3021–104.

8. Suzuki M, Murashima M, Hoerr SL, Panel with the WHOEC. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. Nutr Diet. 2007;64:157–63.

9. American Diabetes Association. 2. Classification and diagnosis of diabetes: standards of medical care in diabetes—2018. Diabetes Care. 2018;41(Supplement_1):S13–27.

10. Wilson PWF, D'Agostino RB, Levy D, Belanger AM, Silbershatz H, Kannel WB. Prediction of Coronary Heart Disease Using Risk Factor Categories. Circulation [Internet]. 1998 May 12;97(18):1837–47. Available from: https://doi.org/10.1161/01.CIR.97.18.1837

11. Association AD. 2. Classification and Diagnosis of Diabetes: Standards of Medical Care in Diabetes—2021. Diabetes Care [Internet]. 2020 Dec 4;44(Supplement_1):S15–33. Available from: https://doi.org/10.2337/dc21-S002

12. Berger VW, Zhou Y. Kolmogorov–smirnov test: Overview. Wiley statsref Stat Ref online. 2014;

13. Mandourah Y, Ocheltree A, Al Radi A, Fowler R. The epidemiology of Hajj-related critical illness: lessons for deployment of temporary critical care services. Crit Care Med. 2012;40(3):829–34.

14. Khan NA, Ishag AM, Ahmad MS, El-Sayed FM, Bachal ZA, Abbas TG. Pattern of medical diseases and determinants of prognosis of hospitalization during 2005 Muslim pilgrimage Hajj in a tertiary care hospital. A prospective cohort study. Saudi Med J. 2006;27(9):1373–80.

15. Arabi YM, Alhamid SM. Emergency room to the intensive care unit in Hajj. Saudi Med J. 2006;27(7):937–41.

16. Lloyd-Jones DM, Hong Y, Labarthe D, Mozaffarian D, Appel LJ, Van Horn L, et al. Defining and setting national goals for cardiovascular health promotion and disease reduction: the American Heart Association's strategic Impact Goal through 2020 and beyond. Circulation. 2010;121(4):586–613.

17. Qari S. The Hajj: Hazards of Heat Exposure and Prevalence of Heat Illnesses among Pilgrims. J Liaquat Univ Med Heal Sci. 2019;18(04):252–7.

18. Yezli S, Mushi A, Almuzaini Y, Balkhi B, Yassin Y, Khan A. Prevalence of Diabetes and Hypertension among Hajj Pilgrims: A Systematic Review. Int J Environ Res Public Health. 2021 Jan;18(3).

19. Algeffari M. Diabetes and Hajj pilgrims: A Narrative review of literature. J Pak Med Assoc. 2019;69(6):879–84.

20. Khan ID, Khan SA, Asima B, Hussaini SB, Zakiuddin M, Faisal FA. Morbidity and mortality amongst Indian Hajj pilgrims: A 3-year experience of Indian Hajj medical mission in mass-gathering medicine. J Infect Public Health [Internet]. 2018;11(2):165–70. Available from: https://www.sciencedirect.com/science/article/pii/S1876034117301478

21. Park D, Lee J-H, Han S. Underweight: another risk factor for cardiovascular disease? A cross-sectional 2013 Behavioral Risk Factor Surveillance System (BRFSS) study of 491,773 individuals in the USA. BRFSS) Centers Dis Control Prev. 2017;48(September).

22. Maharani A, Praveen D, Oceandy D, Tampubolon G, Patel A. Cardiovascular disease

risk factor prevalence and estimated 10-year cardiovascular risk scores in Indonesia: The SMARThealth Extend study. PLoS One. 2019;14(4):e0215219.

23. Hussain MA, Al Mamun A, Peters SAE, Woodward M, Huxley RR. The burden of cardiovascular disease attributable to major modifiable risk factors in Indonesia. J Epidemiol. 2016;26(10):515–21.

382 **Table 1.** Characteristic of the study population of Hajj pilgrims from East Java, Indonesia,
383 from 2017 to 2019.

Variable	2017 (n = 21488)	2018 (n = 23865)	2019 (n= 26725)	P-value (χ2 test / Anova)	Post-hoc test	P value (Man-whitney)
Men	10018 (46.6)	11254 (47.2)	12535 (46.9)	0.521		
Women	11470 (53.4)	12611 (52.8)	14190 (53.1)			
Age (year)	54.0 (11.3)	53.8 (10.8)	54.14 (11.8)	0.145		
18-40 years old	2369 (11.0)	2473 (10.4)	3086 (11.5)	< 0.001		
41-49 years old	5082 (23.7)	5499 (23.0)	5902 (22.1)			
50-59 years old	7490 (34.9)	8860 (37.1)	9442 (35.3)			
≥ 60 years old	6547 (30.5)	7033 (29.5)	8295 (31.0)			
SBP (mmHg)	127.3 (20.4)	127.9 (20.5)	128.4 (21.0)	<0.001	2017 vs 2018 2017 vs 2019 2018 vs 2019	0.001 <0.001 0.045
DBP (mmHg)	80.4 (10.2)	80.5 (10.2)	80.3 (10.4)	0.006	2017 vs 2018 2017 vs 2019 2018 vs 2019	0.232 0.660 0.002
Non-hypertension	10000 (46.5)	15376 (64.4)	1282 (4.8)	< 0.001		
HT grade I	7612 (35.4)	5491 (23.0)	6936 (26.0)			
HT grade II	2785 (13.0)	2200 (9.2)	5129 (19.2)			
HT grade III	1091 (5.1)	798 (3.3)	3614 (13.5)			
BMI	25.3 (4.6)	25.3 (4.5)	25.3 (4.6)	0.349		
Underweight	974 (4.5)	953 (4.0)	1282 (4.8)	0.002		
Normal	5686 (26.5)	6245 (26.2)	6936 (26)			
Overweight	4130 (19.2)	4663 (19.5)	5129 (19.2)			
Obesity class I	7885 (36.7)	8872 (13.1)	9764 (36.5)			
Obesity class II	2813 (13.1)	3132 (13.1)	3614 (13.5)			
PPG levels (mg/dL)	136.9 (63.4)	138.0 (62.4)	138.6 (63.8)	< 0.001	2017 vs 2018 2017 vs 2019 2018 vs 2019	<0.001 <0.001 0.776
Diabetes	2340 (10.9)	2556 (10.7)	2985 (11.2)	0.247		
Smoking history	2987 (13.9)	3420 (14.3)	3982 (14.9)	0.007		
Hospitalization	173 (0.8)	230 (1.0)	297 (1.1)	0.003		

Mortality	77 (0.4)	42 (0.2)	54 (0.2)	< 0.001

Table 2. Univariate analysis for hospitalization and mortality of Hajj pilgrims from East Java, Indonesia, from 2017 to 2019.

Variable	Hospitalization		P-value	Mortality		P-value
	No n=71378	Yes n=700		Alive n=71904	Death n=173	
Men	33412	395	<0.001	33703	104	<0.001
Women	37966	305		38202	69	
Age (year)	53.9 (11.3)	64.2 (11.1)	<0.001	54.0 (11.3)	66.8 (10.2)	<0.001
Age group						
18-40 years old	7914	14	<0.001	7928	0	<0.001
41-49 years old	16436	47		16474	9	
50-59 years old	25618	174		25757	35	
≥ 60 years old	21410	465		21746	129	
SBP (mmHg)	127.8 (20.6)	136.1 (23)	<0.001	127.9 (20.7)	134.3 (22.4)	<0.001
DBP (mmHg)	80.4 (10.3)	82.9 (11.1)	<0.001	80.4 (10.3)	82.5 (11.1)	0.005
Non-HTN	42351	333	<0.001	42597	87	0.001
HTN grade I	18897	198		19050	45	
HTN grade II	7282	119		7375	26	
HTN grade III	2848	50		2883	15	
BMI	25.3 (4.6)	23.7 (5.3)	<0.001	25.3 (4.6)	22.9 (5.5)	<0.001
Underweight	3110	99	<0.001	3174	35	<0.001
Normal	18634	233		18810	57	
Overweight	13803	119		13898	24	
Obesity class I	26355	166		26482	39	
Obesity class II	9476	83		9541	18	
PPG levels (mg/dL)	137.6 (62.8)	169.3 (90.6)	<0.001	137.8 (63.1)	169.4 (97.6)	<0.001
Diabetes						
Yes	7705	176	<0.001	7838	43	<0.001

No	63672	524		64067	130	
Smoking history						
Yes	10287	102	0.905	10365	24	0.839
No	61091	598		61540	149	

387

388 **Table 3.** Multivariate analysis using logistic regression for risk factors of hospitalization and
389 mortality Hajj pilgrims from East Java, Indonesia, from 2017 to 2019.

Variable	Hospitalization		
	Odds ratio	**95% CI**	**P-value**
Men	1.334	1.146-1.554	<0.001
Age group			
18-40 years old	Reference		
41-49 years old	1.546	0.850-2.812	0.153
50-59 years old	3.262	1.856-5.640	<0.001
≥ 60 years old	8.906	5.204-15.244	<0.001
Hypertension			
Non-HTN	References		
HTN grade I	1.055	0.882-1.263	0.559
HTN grade II	1.546	1.247-1.917	<0.001
HTN grade III	1.657	1.222-2.247	<0.001
Diabetes	2.552	2.099-3.102	<0.001
BMI			
Normal	Reference		
Underweight	1.031	0.796-1.336	0.816
Overweight	2.244	1.653-3.047	<0.001
Obesity class I	0.788	0.592-1.048	0.102
Obesity class II	0.615	0.471-0.803	<0.001
Variable	**Hospitalization**		
	Odds ratio	**95% CI**	**P-value**
Men	1.480	1.088-2.014	0.012
Diabetes	2.567	1.808-3.643	<0.001
BMI			
Normal	Reference		

Underweight	1.009	0.588-1.731	0.975
Overweight	2.985	1.660-5.369	<0.001
Obesity class I	0.664	0.358-1.231	0.193
Obesity class II	0.631	0.360-1.106	0.108

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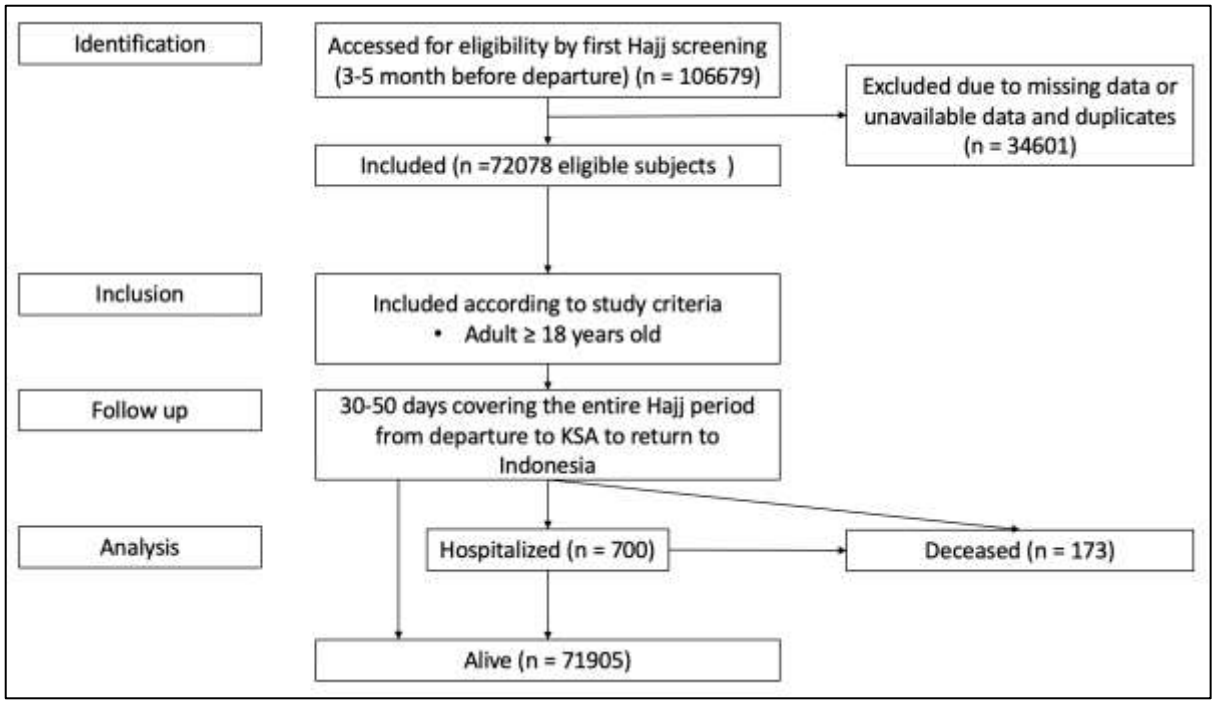


Figure 1. Flow chart of the study design.

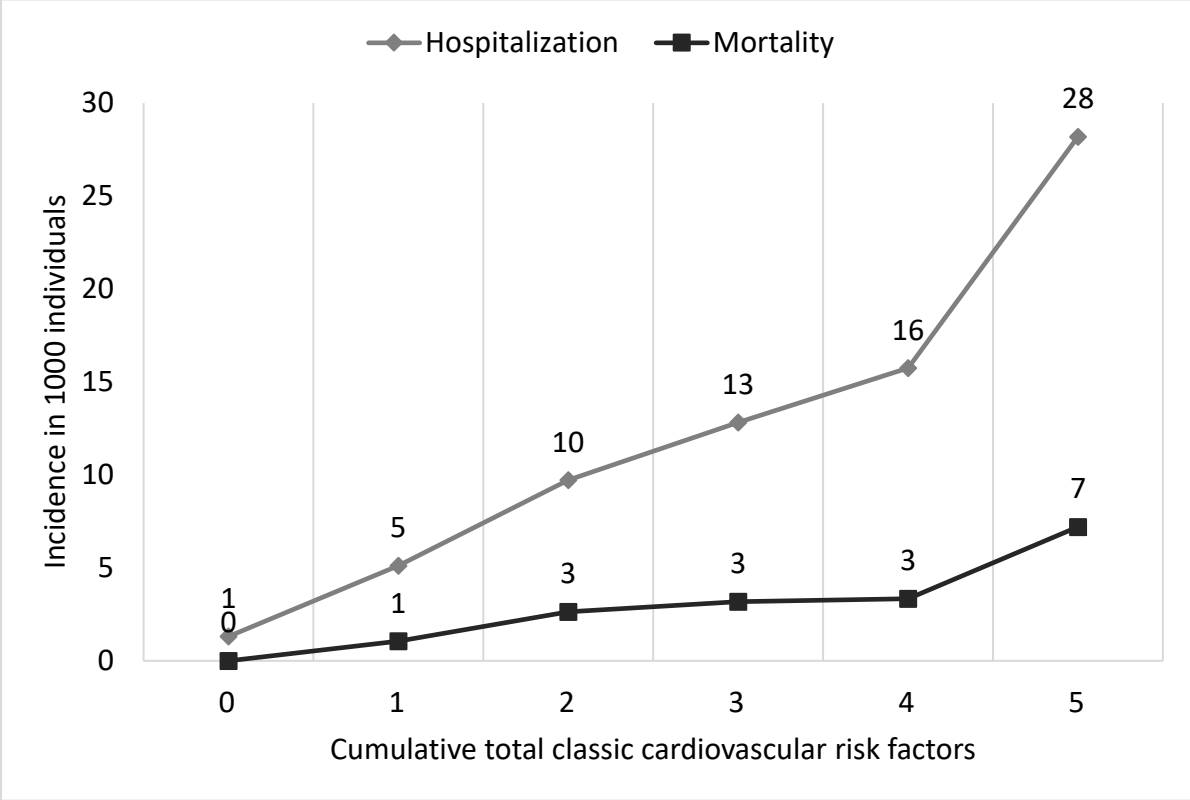
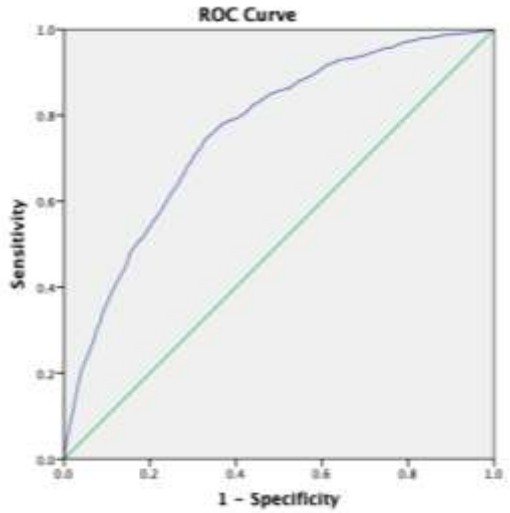


Figure 2. The cumulative total of classical cardiovascular risk factors with the incidence of hospitalization and mortality (in 1000 individuals).

397

A



Diagonal segments are produced by ties.

Area Under the Curve

Test Result Variable(s): Predicted probability

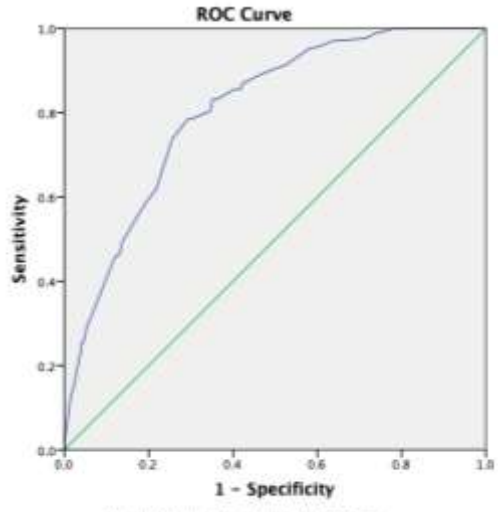
Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.762	.009	.000	.745	.778

The test result variable(s): Predicted probability has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

B



Diagonal segments are produced by ties.

Area Under the Curve

Test Result Variable(s): Predicted probability

Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.806	.014	.000	.778	.833

The test result variable(s): Predicted probability has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

398

399 **Figure 3**. Area under the curve for the association between classical cardiovascular (CV) risk

400 factors and hospitalization (A) and mortality (B).

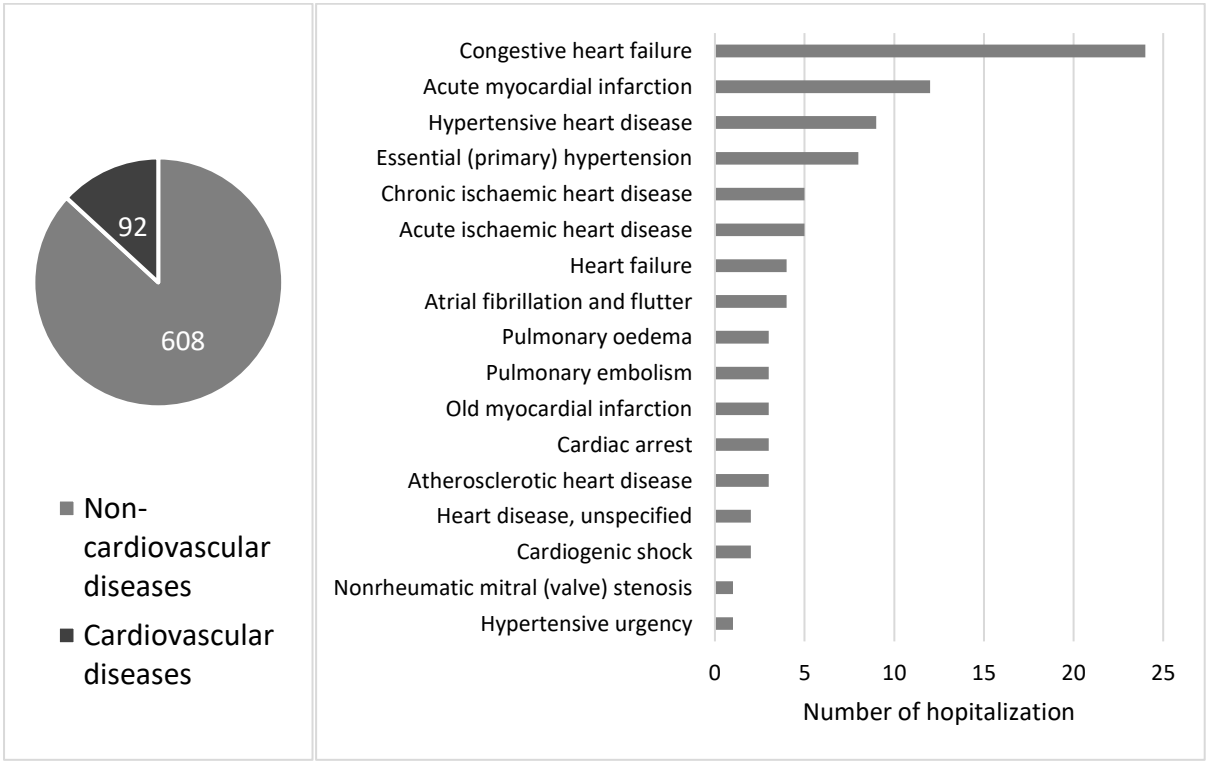


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Figure 4. Early diagnosis during hospitalization among Hajj pilgrims.

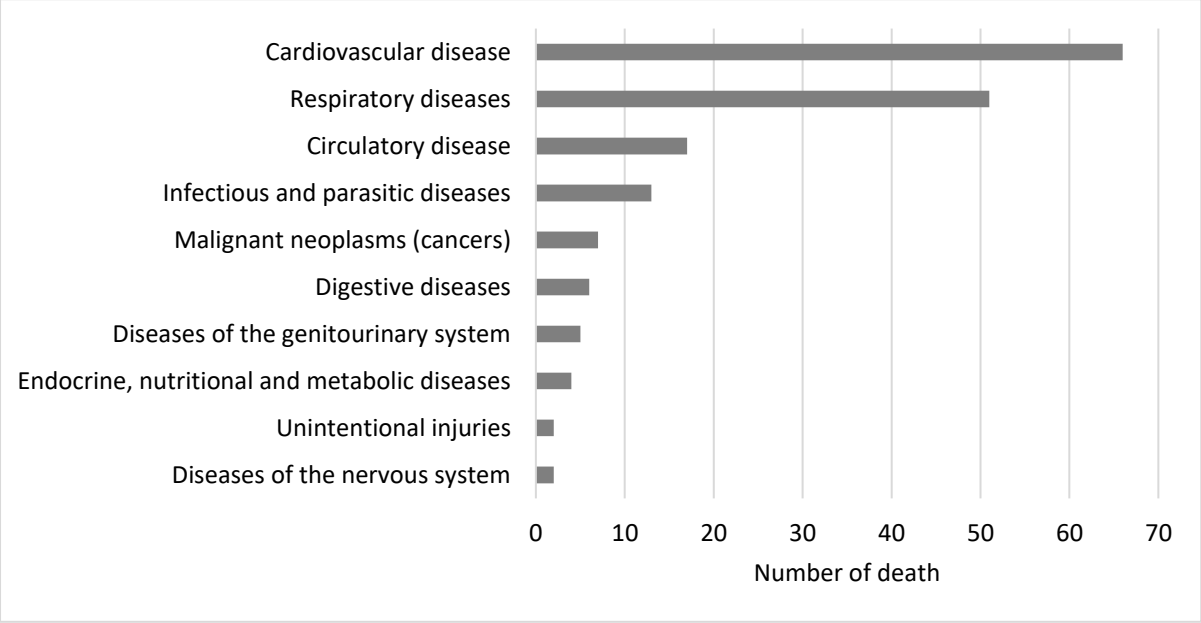
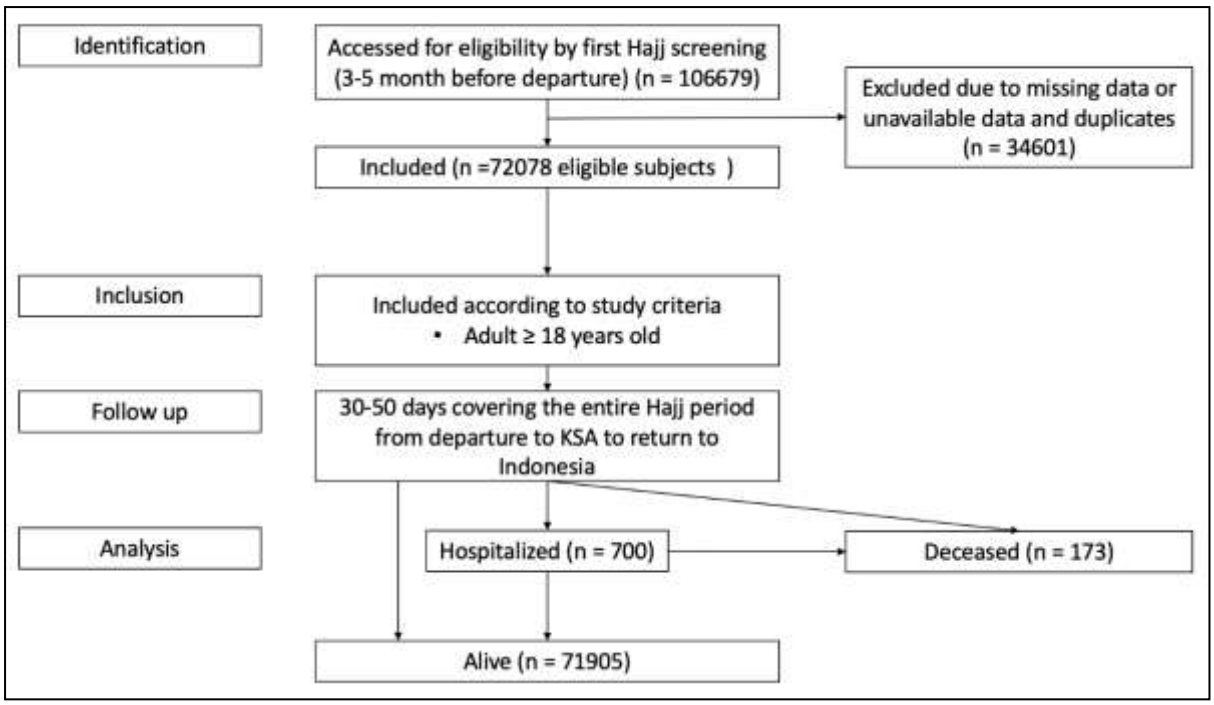


Figure 5. Cause of death according to hospital/flight doctor death certificate.



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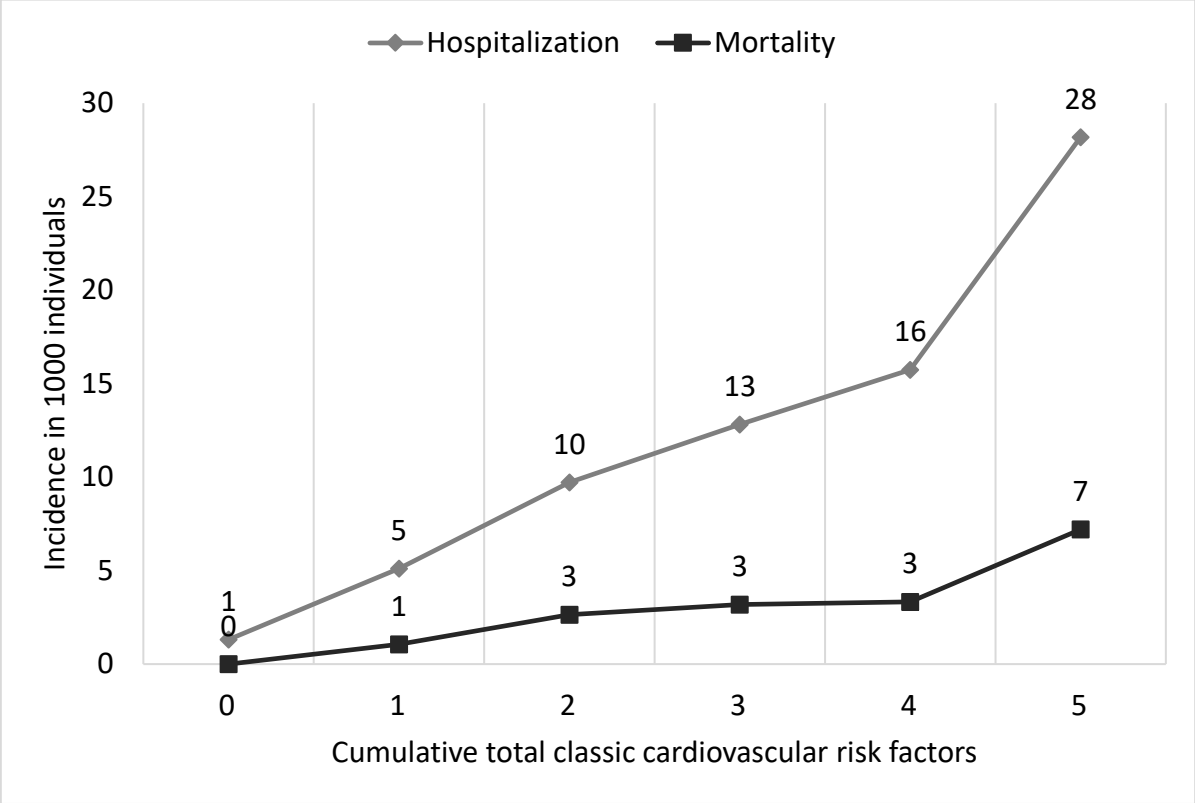
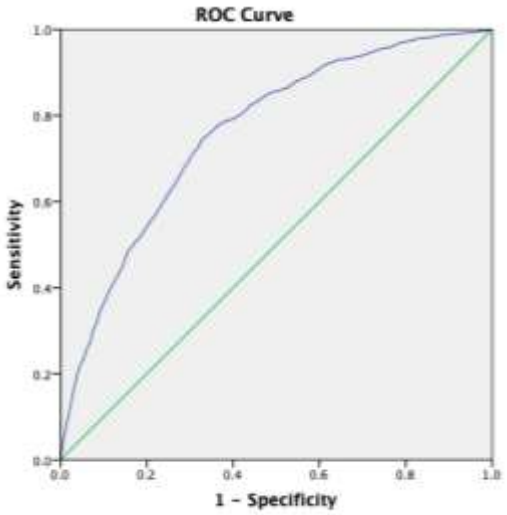


Figure 2. The cumulative total of classical cardiovascular risk factors with the incidence of hospitalization and mortality (in 1000 individuals).

A



Diagonal segments are produced by ties.

Area Under the Curve

Test Result Variable(s): Predicted probability

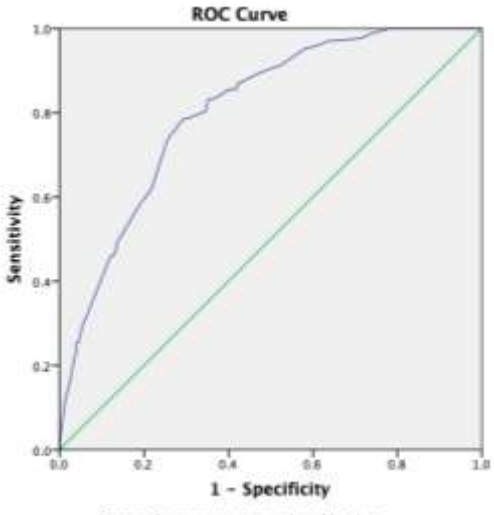
Area	Std. Error[a]	Asymptotic Sig.[b]	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
.762	.009	.000	.745	.778

The test result variable(s): Predicted probability has at least one tie between the positive actual state group and the negative actual state group. Statistics may be biased.

a. Under the nonparametric assumption

b. Null hypothesis: true area = 0.5

B



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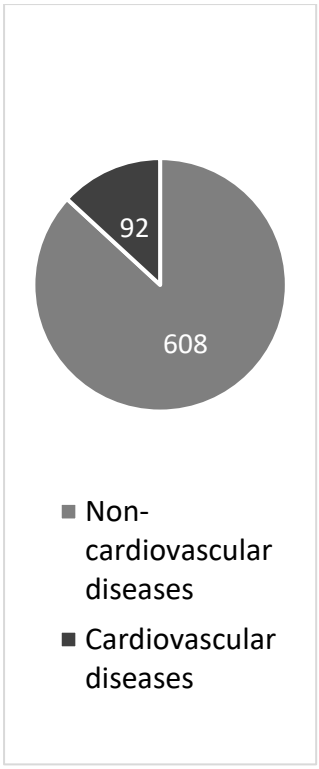

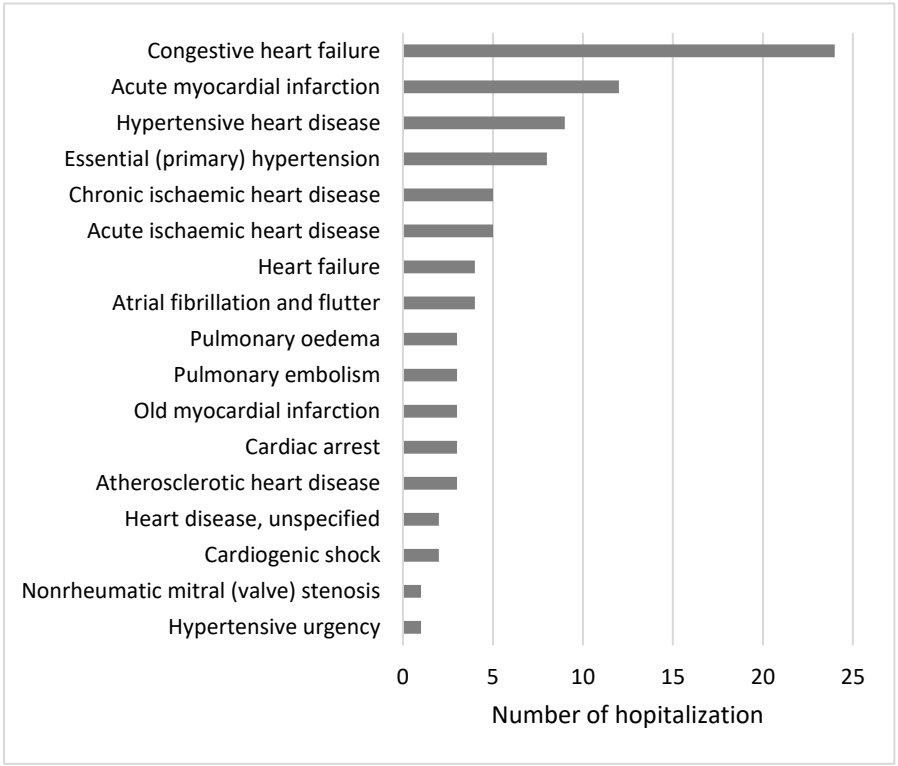

Figure 4. Early diagnosis during hospitalization among Hajj pilgrims.

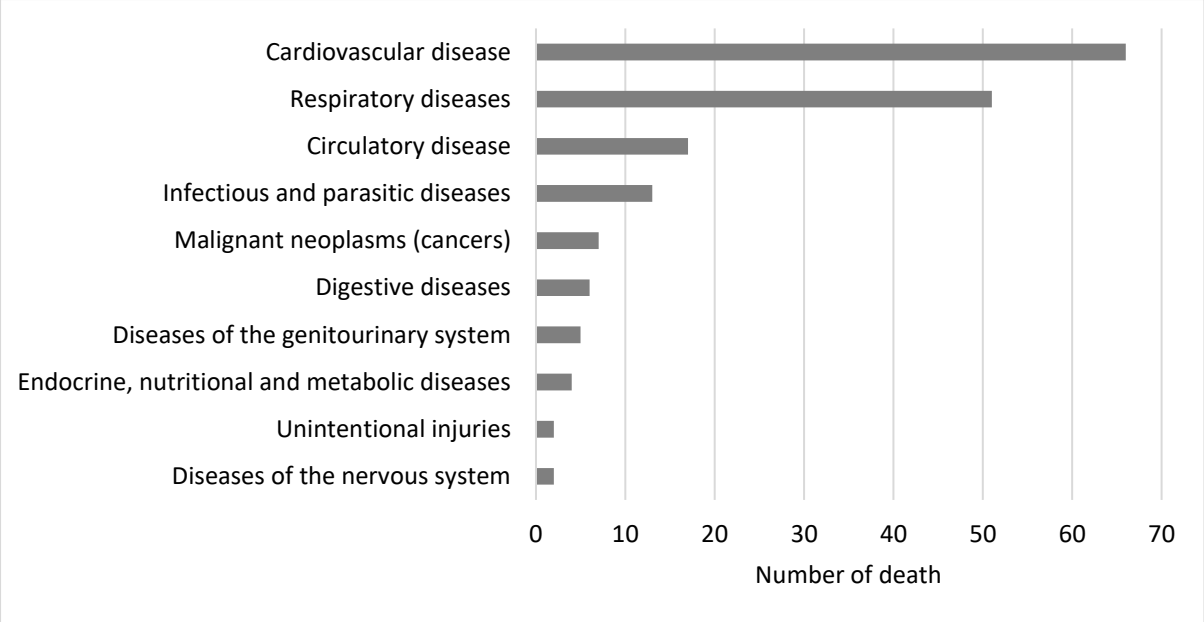

Figure 5. Cause of death according to hospital/flight doctor death certificate.

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I am pleased to let you know that the second set of galley proofs of your Research Article 9037159 titled "The impact of classical cardiovascular risk factors on hospitalization and mortality among Hajj pilgrims," is ready. You can apply your corrections directly to the manuscript with the Online Proofing System (OPS).

Using the OPS, you can quickly and easily make corrections directly to your galley proofs and submit these corrections with a single click.

https://ops.hindawi.com/author/9037159/

Please note, although all authors can view the proof, it is only the submitting author (the author addressed in this email) who has the ability to edit and submit the corrections. However, the submitting author can log in to the OPS and re-assign the proof to another author if necessary. The submitting author will need to log in with the email address included on this email.

If a new corresponding author is added, they must log into their manuscript tracking system account and add their ORCID ID. Any additional ORCID IDs added on during proofing will also need to be updated on that author's account. Delays can occur if this isn't done.

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Best regards,

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****

9037159: Your article has been published

1 pesan

Polen Ilagan <polen.ilagan@hindawi.com>
Kepada: meityardiana@fk.unair.ac.id

19 April 2023 pukul 17.17

Dear Dr. Ardiana,

I am pleased to let you know that your article has been published in its final form in "The Scientific World Journal."

Meity Ardiana, "The Impact of Classical Cardiovascular Risk Factors on Hospitalization and Mortality among Hajj Pilgrims," The Scientific World Journal, vol. 2023, Article ID 9037159, 9 pages, 2023. https://doi.org/10.1155/2023/9037159.

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