

## The Influence of Age on the Death Rate of Hajj Pilgrims in South Sumatra in 2024

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### KEYWORDS

Mortality rate, pilgrims, age

### ABSTRACT

The Hajj pilgrimage is a significant religious obligation for Muslims, but it presents various health risks, particularly for older pilgrims. This study aims to identify the influence of age on the number of Hajj pilgrims from South Sumatra in 2024. A quantitative research approach was employed, collecting and analyzing mortality data for pilgrims based on age groups. Primary data were gathered from a survey conducted among health congregants before departure, while secondary data were sourced from official reports from the Ministry of Religion and Health Services. The analysis revealed that age significantly influences the number of deceased pilgrims, particularly among those aged over 60. This age group faces a higher risk of mortality due to vulnerable health conditions and the prevalence of chronic diseases such as heart disease, diabetes, and hypertension, which are exacerbated by the physical demands of the Hajj pilgrimage. The findings emphasize the need for careful attention and preparation regarding the health of older congregants. Intensive monitoring is essential to ensure that this group can undertake the Hajj pilgrimage safely and optimally. It is recommended to develop specialized health programs for elderly Hajj pilgrims to mitigate the risk of mortality during their religious observance. These programs should focus on health assessments, education on managing chronic conditions, and strategies for coping with the physical demands of the pilgrimage.

### INTRODUCTION

Hajj is the fifth and obligatory pillar of Islam for every Muslim who is able in a way physical, financial, and mental. Obligations This implemented a very lifelong life on the moon, Dzulhijjah, and Indonesia, the largest Muslim country, sends the largest hajj pilgrim annually. However, the journey is not without risk, especially for congregations that carry on age and are frequently prone to consequence factors such as age and chronic disease (Nooridha Febriyanti, 2023). The high number waiting for Hajj in Indonesia causes Lots of candidate Hajj pilgrims to depart at the age of continue, which, in the end, impacts the high number of deaths during the Hajj pilgrimage.

Based on data from the Ministry of Religion (Kemenag) in 2024 shows that the number of 461 hajj pilgrims who died, the majority died in Mecca, with a total of 353 pilgrims. Others died in Medina (60 pilgrims), Mina (32 pilgrims), Arafah (6 pilgrims), and Jeddah (10 pilgrims). The number of hajj pilgrims who died was over 71 years old, amounting to 207

pilgrims. She was followed by the age range of 61-70 years (149 pilgrims), 51-60 years (85 pilgrims), and 31-50 years (20 pilgrims ) (Vitiara, 2024).

The long waiting list for hajj pilgrims in Indonesia has caused many prospective hajj pilgrims to depart at an advanced age, contributing to the high death rate of hajj pilgrims in Indonesia. In some cases, prospective Hajj pilgrims have to wait for years, even more than a decade, to be able to perform the Hajj. This brings several challenges, especially in terms of the physical health of elderly Hajj pilgrims, who often face health problems such as chronic diseases or decreased physical abilities when departing for Hajj. Therefore, together with the government, the Ministry of Health is trying to provide comprehensive health services for hajj pilgrims, especially those with carry-on age (Tri M, 2024).

Previous research conducted by (Sakti et al., 2020) mentions that 76.7% of pilgrims aged 60 years and above have a higher risk of death during the Hajj compared to those under that age. The cause is a decline in physical and health conditions generally occurring in the elderly, such as chronic diseases (e.g., hypertension, diabetes, and heart disease), which are more common in this age group. In addition, environmental factors such as extreme weather and high physical activity during the Hajj worsen the health conditions of the elderly. Research also shows that elderly pilgrims are more susceptible to dehydration and fatigue, which can trigger serious health complications, increasing the risk of death.

Research (Liani, Machmud, 2020) shows that old age is also a significant factor in deaths from respiratory diseases. A study (Amelia Nur, 2019) supports this, showing that age over 60 is a considerable risk factor in SOC Embarkation Hajj pilgrims. The research is also supported by (Sara W Robikhul I, 2020), which shows that the death rate of Indonesian Hajj pilgrims from year to year is still high. The percentage of SOC embarkation hajj pilgrims with risk status is always big, dominated by age carry-on.

Age has a strong correlation with an increased risk of death, especially in hajj pilgrims. Biologically, the aging process results in decreased organ function, endurance, and ability to adapt to extreme environments such as the heat in Saudi Arabia. In addition, elderly hajj pilgrims also tend to have comorbidities that worsen their health conditions during the physically demanding pilgrimage. These factors position age as a key variable in this study, in line with theories emphasizing the importance of physical condition and ability to adapt to intense physical activity (Slyviani et al., 2023).

This study brings an update using the latest data from 2024 and focuses specifically on Hajj pilgrims from South Sumatra. As one of the provinces with a fairly high number of elderly Hajj pilgrims, this study provides deeper insight into how age affects mortality rates in the local context. This update is important to support special health programs for elderly Hajj pilgrims, which can reduce the risk of death in the future.

This study aims to identify the relationship between certain age groups and the risk of death of Hajj pilgrims from South Sumatra in 2024. This study also aims to provide a clearer picture of the age factor as the main determinant of Hajj pilgrim mortality, with the hope of providing recommendations for improving the health system for Hajj pilgrims, especially the elderly.

## **RESEARCH METHOD**

This quantitative study aims To identify and understand the influence of age on the number of Hajj pilgrims from South Sumatra in 2024. Via a quantitative approach, the research was directed to collect relevant numerical data with the topic and analyze the connection between variables that have been set previously, namely age congregation as variable free and level death as variable bound. Research This is taking place at the time of implementation of the Hajj pilgrimage in 2024, so give context to the current phenomenon observed at the right time and provide the latest relevant data.

**Research location** This focused on pilgrims from South Sumatra, who were selected with consideration that the province's amount of congregation carries on significant age. Condition This allows the study to explore the connection between age and the mortality level among Hajj pilgrims more in-depth and relevantly. The selection of South Sumatra as location research is also based on the availability of accurate and structured data about the health and death of pilgrims, so the results study is expected to give a clear picture of risks faced by the congregation age in performing the Hajj pilgrimage.

**Study** This covers several aspects related to the health, physical health, and age of Hajj pilgrims. Aspects of health cover the condition of the physique congregation before and during The implementation of the Hajj pilgrimage, which includes a history of the disease, health status in general, and ability to do heavy activity during the Hajj. This is very relevant for analysis in the context of age congregation because the condition of a vulnerable physique at age is one of the main risks. The research also looked at factors of extreme environment and climate during the Hajj, which can be done to worsen the condition of health, especially for congregation-aged carry-on.

**Population study** consists of pilgrims departing for Hajj from South Sumatra in 2024, estimated to be thousands of people. Considering the limitations of source power, research takes samples to choose several respondents representing various age groups. Approach This allows the study To get enough data To analyze the connection between age and death and, at the same time, give results that can be achieved and generalized to a larger population.

**Instrument research** was used to cover survey and secondary data collection. A survey was done To collect primary data on the health status of pilgrims before the hajj departure and history-relevant diseases. Secondary data was obtained from official data reports published by the Ministry of Religion and the Health Service, which included data on deaths and their causes during the implementation of the Hajj pilgrimage in 2024. This data covers information like age, history of health, and time of death, which can used To identify patterns and correlations between age and level of death.

**Research strategy** This is designed to combine primary and secondary data to give a comprehensive view of the phenomenon being studied. Primary data from surveys allow the study To understand factors of basic health that may influence the risk of death. In contrast, secondary data from reports strengthens results with valid empirical data. Approach This expectation can give solutions to the problems raised. Namely, height level death among congregation carries on age, with an outlook about how age plays a role as a main risk.

After the data is collected, analysis is done using device soft statistics. Data will be through the normality test process To ensure that its distribution is in accordance. For analysis Next, regression logistics will be applied To identify the connection between age and risk of death, with death status as variable dependent and age as variable independent. Analysis This is expected to give concrete results about the influence of age on the level of mortality of pilgrims, which can become a base for planning policy for better health . It is good for continued hajj pilgrims' age in the future.

The study is also trying To understand the relatedness between advanced age and chronic disease as factors Supporter improvement in the risk of death during the Hajj pilgrimage. Considering the results of studies previously, which show that cardiovascular and respiratory diseases are the main causes of death, continued hajj pilgrims' age, the research identifies age as a variable main influencing factor incident. Research This focuses on the influence factor intrinsic (such as age and health ) and extrinsic ( such as condition harsh environment during the pilgrimage) increased risk of death, especially for those over 60 years old.

To enrich the results of the study, descriptive characteristics of the pilgrims in each age group were also analyzed. This data includes initial health conditions, disease history, and

health complaints that arise during the pilgrimage. This descriptive analysis aims to provide an overview of how age affects the condition, health, and endurance of the pilgrims in performing the pilgrimage, which requires high stamina. Through this data, it is hoped that solutions to reduce the risk of death in elderly pilgrims can be more easily identified, such as improvements in pre-hajj health programs and increased health monitoring during the pilgrimage.

These strategies provide deep insight into the problems faced by ageing pilgrims and, at the same time, provide solutions to mitigate age-related risks. The study provides recommendations on the importance of special health programs for elderly pilgrims, including pre-departure health checks, appropriate physical training, and more intensive health monitoring during the pilgrimage. Thus, the study contributes to understanding the theoretical relationship between age and mortality of Hajj pilgrims and provides practical solutions that can be implemented by the authorities to reduce the risk of mortality in the future.

With the research design, the results obtained are expected to map risk factors more accurately and provide useful recommendations for the policies of stakeholders and organizations related to Hajj health in Indonesia. The research strategy includes thorough analysis and accurate data, which can ultimately be used to develop more effective Hajj health programs, especially for elderly pilgrims.

## RESULTS AND DISCUSSION

### Results

#### Validity Test

Validity testing is a process that helps determine which measurement tools measure what is needed or must measure.

		X	Y
X	Pearson Correlation	1	.533**
	Sig. (2-tailed)		<.001
	N	125	125
Y	Pearson Correlation	.533**	1
	Sig. (2-tailed)	<.001	
	N	125	125

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Figure 1. Results of the Table Validity Test**

The research results obtained from the statistical test were below 0.05, which indicates that the data results are valid and that the research can be continued.

#### Normality Test

I am testing the normality of the objectives to analyze the distribution of the data obtained.

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
X	.216	125	<.001	.884	125	<.001
Y	.122	125	<.001	.947	125	<.001

a. Lilliefors Significance Correction

**Figure 2. Normality Test Results Table**

The research results are obtained if the data obtained is normally distributed, with the sig. The value obtained is below 0.05; thus, the research can be continued.

### Reliability Test

The reliability test aims to evaluate the extent to which a measuring instrument produces consistent and stable results when used in the same situation or repeated at different times.

Cronbach's Alpha	N of Items
.664	2

Figure 3. Results of the Reality Test Table

The test obtained if the Cronbach's alpha value is 0.664 indicates that the instrument used has good reliability so that it can be continued for further analysis.

### Regression Test

Regression tests aim to analyze two or more variables.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.114	2.555		1.218	.225
	X	.778	.111	.533	6.991	<.001

a. Dependent Variable: Y

Figure 4. Table Regression Test Results

The table above states that the age variable has an influence on the number of deaths of Hajj pilgrims in South Sumatra with a significance sign (sig) below 0.05, which explains that there is a good relationship. with each variable.

### Discussion

Based on the results of the study, age itself affects the death of pilgrims in South Sumatra. Research supported by (Arif et al., 2023) explains That most of the pilgrims who died were those who were elderly, which shows that age factors play an important role in increasing the risk of death during the pilgrimage. Elderly pilgrims often have more vulnerable health conditions, such as heart disease, diabetes, or hypertension, which can be exacerbated by the stress of physical and mental experiences during the journey and implementation of worship in the Holy Land.

The HaHajjs is one of the many Islamic laws that must be performed by physically and financially capable Muslims at least once in their lifetime. As the fifth pillar of Islam, the HaHajjs are very meaningful for the life of a Muslim, not only as a form of devotion to Allah but also as a means to strengthen faith, increase spiritual awareness, and feel unity with Muslims around the world (Widodo et al., 2024). It includes a series of prescribed rites and procedures, such as tawaf around the Kaaba, standing on Arafah, and throwing stones, all of which have their symbolism and meaning. By performing the HaHajja, Muslims fulfill a religious obligation and seek to achieve the soul's cleanliness and forgiveness of sins (Aulia Rahman et al., 2024).

The Hajj activity consists of various rituals that require stamina and physical standing strength, such as tawaf around the Kaaba, standing on Arafah, and throwing stones. These activities require optimal physical condition strength, so the congregation must be prepared to avoid fatigue and health risks. For elderly pilgrims or those with health problems, this challenge becomes greater because they tend to have physical limitations and are at high risk of complications. So, they need to make thorough preparations, including improving physical fitness and consulting with health strength before departure (Yusri, 2020).

Good physical preparation can include a regular exercise program, such as walking, running, or light exercise, to improve the body's standing strength. It is also important to regulate a healthy diet and eat nutritional intake to keep the body in prime condition to perform the pilgrimage. With proper preparation, pilgrims can undergo the entire worship series more smoothly and safely while reducing the risk of problems arising from heavy physical activity. Thus, understanding and paying attention to the physical aspect is very important in ensuring the implementation of the pilgrimage, especially for older people (Arifin et al., 2024).

The aging process is a natural phenomenon that occurs as we age, affecting various aspects of life, including physical and mental fitness. Organ function begins to decline, loss of muscle mass, and decreased bone density in someone with old age, resulting in decreased endurance and physical strength. In addition, the immune system also tends to weaken, so elderly individuals have low immunity to disease and infection (Slyviani et al., 2023). The mental aspect is also affected, with many seniors experiencing cognitive decline and mental health issues such as depression or anxiety. It is, therefore, important for more seniors to maintain fitness through regular physical activity, healthy eating, and comprehensive health care, which improves quality of life and reduces the aging process's negative impacts. (Nurzaman et al., 2024).

Death is a reality that every individual will face, but in older people, there is often a view that they are better able to accept this fact. This is due to better life experiences in the long term, where they face various challenges and losses to develop an acceptance towards death as part of life—cycle life (Yurliani et al., 2020). During the HaHajj, a spiritual and physical journey that requires great stamina and strength, older people may feel the tension between the desire to perform the pilgrimage and the awareness of their physical limitations. Although the HaHajjan is challenging for the elderly, many of them find the profound spiritual experience and the opportunity to worship at the holy site invaluable, even if it means facing greater health risks. So, their acceptance of death can make them more courageous to follow the activities as stated, appreciate every moment they have, and live their spiritual journey with gratitude.

Thus, the influence of age on the number of deaths There are quite a lot of significant hajj pilgrims in South Sumatra, where the age group that carries tends to be at higher risk of experiencing health complications that can lead to death during the haHajjFactors such as declining health conditions, the presence of chronic diseases, as well as stress from the physical and mental consequences of long journeys and environmental changes in the Holy Land contribute to the high number of deaths among elderly pilgrims. In addition, older age is often accompanied by decreased physical ability, so the body's standing strength is affected when facing the challenges of heavy worship. Therefore, special attention and better health preparation are needed for elderly pilgrims. To minimize risk.

## **CONCLUSION**

The study's conclusion shows that age impacts the level of death of HaHajjilgrims from South Sumatra in 2024. Data shows that congregation age carries its own risk of more death compared to the young group age young. This is caused by conditions that are more vulnerable to the congregation aged, which is often accompanied by disease chronic like heart disease, diabetes, and hypertension. The combination of poor health and demands for a tall physique during the pilgrimage increases the risk of death for the group age. Therefore, paying attention, especially in preparing mature health and monitoring intensives for congregation carry-on age use, is important to reduce risk and ensure they can perform worship safely. Research This also confirms the importance of policy health, especially for pilgrims aged , in overcoming the challenges of physique during the implementation of the Hajj pilgrimage.

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