



Original Article

The Relationship of Characteristics to the Mental Health of Prospective Hajj Pilgrims in Palembang City

Emma Novita ^{1*}, Sri Mulia ²

¹ IKM-IKK Department, Faculty of Medicine, Sriwijaya University, Palembang, Email; emmanovita@fk.unsri.ac.id

² IKM-IKK Department, Faculty of Medicine, Sriwijaya University, Palembang

* Corresponding Author : Emma Novita

Abstract: Hajj pilgrimage is a 30-day religious journey in Saudi Arabia undertaken by Muslims, with waiting times often exceeding 5 years, and many of them are elderly individuals requiring stable mental and physical conditions. Mental health is a crucial factor for the well-being of the elderly, with over 20% of them suffering from disorders such as depression, anxiety, and stress. Gender also plays a role, with women being more vulnerable to depression and anxiety. Education level and cognitive function also influence mental health. The Depression, Anxiety, Stress Scale (DASS) is used to assess individual mental health and the severity of depression, anxiety, and stress. This research aims to understand how factors such as age, gender, and education are related to the mental health of prospective Hajj pilgrims from Palembang in 2023 using the DASS instrument. The study found a significant relationship between age and the occurrence of depression but not with gender or education. These factors also did not have a significant relationship with anxiety. In the case of stress, a significant relationship was found between gender and age, while education level did not affect it.

Keywords: Hajj pilgrimage, Mental health, Mental disorder

1. Introduction

The Hajj pilgrimage is a pilgrimage by Muslims that is carried out for approximately 30 days in Saudi Arabia, is one of the pillars of Islam that is carried out annually and is carried out by all Muslims in the world who are able both in terms of material, physical, and mental. ¹ The word Hajj literally means to visit or go. ² Every year, Indonesia gets a quota of approximately 200,000 people for the Hajj pilgrimage, and for regular Hajj pilgrims, to get a departure schedule must wait more than 5 years, so most prospective Hajj pilgrims are elderly who need a stable mental and physical condition. ³

According to WHO data, more than 20% of the elderly suffer from mental disorders, the most common of which are depression, anxiety and stress. ⁶ Mental health has also been linked to gender differences. Data from WHO states that women experience more depression and anxiety than men. ⁷ This can be influenced by gender identity which is distinguished from how society views feminism-masculinity, as well as different norms between men and women. ⁸

Education level is also associated with mental health. Kave et al. have explored the length of formal schooling with healthy aging indicators and have a positive impact on cognitive components. ⁹ However, other studies have shown that higher levels of emotional distress are found in people with higher education. ¹⁰ The first stage of the Hajj examination aims to identify these risks so that they can be controlled or prevented. The examination includes anamnesis, physical examination, supporting

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examination, diagnosis, determination of health risk levels, and recommendations/suggestions/follow-up plans.⁹

Depression according to DSM V is a persistent mood state of feeling empty, irritable, sad, and can be accompanied by certain cognitive or somatic symptoms. Depression is classified into mild, moderate, severe. Major symptoms of depression are loss of interest, depressive affect. Minor symptoms are, sleep disturbance, reduced concentration, reduced self-confidence, bad future ideas, ideas of harming oneself. The diagnosis of depressive disorder is at least 2 weeks from the above symptoms, or can be faster if there is a suicide attempt.¹¹ According to DSM V, anxiety disorders are feelings of fear that arise excessively in harmless conditions that occur in a person and have an impact on daily activities. Anxiety disorders are classified quite variedly according to DSM V, namely phobia disorders, social anxiety disorders, separation anxiety disorders, panic disorders, and generalized anxiety disorders.^{11,12,13}

The definition of stress according to WHO is a state of worry or mental tension caused by a difficult condition. However, if stress is prolonged it can become a maladaptive reaction such as depression and anxiety disorders. Risk factors that cause stress are gender, age, low socioeconomic status, education level, and traumatic experiences.^{12,14} DASS (depression, anxiety, stress scale) is one of the self-examinations to assess a person's mental health by assessing 3 series of self-scales that measure negative emotional states such as depression, anxiety, and stress, in addition to the process of identifying, understanding, and measuring clinically significant emotions, so that DASS meets professional research requirements.¹⁵ In each DASS-42 form there are 12 sections divided into subscales that have similar content. The main value of DASS in clinical practice is to clarify the locus of emotional disorders, and its scores emphasize the extent to which a person experiences symptoms, not the diagnostic cutoff point. This score can be used in individuals aged 17 years and over.⁹

It is important for us to know more about how a person's characteristics relate to mental health, and to know the related risk factors. So by using this instrument, this journal will look for the relationship between various factors such as age, gender, education level, and mental health of prospective pilgrims in Palembang City in 2023.

2. Method

The type of research conducted is an observational analytical study with a cross-sectional design using secondary data obtained from the results of health examinations of Hajj pilgrims at the Palembang City Health Center in 2023. This study was conducted from February to July 2023. The population in this study were all prospective pilgrims of Palembang City in 2023 who underwent health checks in Palembang City through 10 Health Centers. The sample inclusion criteria were prospective pilgrims of Palembang City in 2023 who underwent health checks, and the exclusion criteria were samples with incomplete medical record data. The independent variables in this study consisted of age, gender, and education level. The mental status of the pilgrims will be measured using the *DAAS 42 questionnaire* with the results as the dependent variable. The data obtained will be analyzed univariately and bivariately using the Chi-Square method if it meets the requirements (Expected Count <5 of all data is only allowed a maximum of 20%). If it does not meet the Chi-Square requirements, an alternative statistical test is carried out using the Fisher Exact Test.

3. Results

In this study, the largest group was obtained in terms of gender, namely women as many as 619 (55.7%), age in the group under 60 years old was 627 (56.4%), low education 695 (62.5%). There were 28 participants (2.5%) who experienced depression, 115 (10.3%) participants who experienced anxiety, and 25 (2.2%) participants who experienced stress as listed in the table below.

Table 1. Frequency Distribution Based on Age, Gender, Education, Depression, Anxiety and Stress

Variables	n	%
Gender		
Man	493	44.3%
Woman	619	55.7%
Gender		
<60 years	627	56.4%
>= 60 years	485	43.6%
Education		
higher education	417	37.5%
Low Education	695	62.5%
Depression		
No	1084	97.5%
Yes	28	2.5%
Anxiety		
No	997	89.7%
Yes	115	10.3%
Stress		
No	1087	97.8%
Yes	25	2.2%
Total	1112	100%

In this study, out of 493 male participants, 8 (1.6%) participants suffered from depression and out of 619 female participants, 20 (3.2%) participants suffered from depression. The gender group with depression was analyzed using Chi Square and obtained a p value = 0.122 which showed that there was no relationship between gender and depression in prospective hajj pilgrims.

As many as 9 out of 627 (1.4%) participants under 60 years old experienced depression. Furthermore, as many as 19 out of 485 (3.9%) participants over 60 years old experienced depression. Age and depression were analyzed using Chi Square and obtained p value = 0.011 which showed a significant relationship between age and depression in prospective hajj pilgrims. Prospective hajj pilgrims over 60 years old are 2.8 times more at risk of experiencing depression than the age group under 60 years old.

In this study, 12 (2.9%) of 417 participants in the high education group experienced depression. There were 16 (2.3%) of 695 participants in the low education group. The level of education was analyzed with depression through Chi Square, obtained p value = 0.058, which showed no significant relationship between the level of education and depression. Prospective pilgrims with a high level of

education were 0.795 times more at risk of experiencing depression than participants with a low level of education. The relationship between risk factors and depressive disorders can be summarized in the table below.

Table 2. Relationship between Age, Gender, Education and Depression

Group	Depressive Disorder				Total		p-value	OR	95%CI
	Normal		Depression						
	n	%	n	%	n	%			
Gender							0.089	2,024	0.884-4.636
Man	485	98.4%	8	1.6%	493	100			
Woman	599	96.8%	20	3.2%	619	100			
Age							0.009	2,800	1,255-6,244
<60 years	618	98.6%	9	1.4%	627	100			
>= 60 years	466	96.1%	19	3.9%	485	100			
Education							0.553	0.795	0.372-1.698
higher education	405	97.1%	12	2.9%	417	100			
Low Education	679	97.7%	16	2.3%	695	100			

In this study, 45 out of 493 (9.1%) male participants experienced anxiety disorders. The female group experienced anxiety disorders as many as 70 (11.3%) out of 619 participants. Gender was associated with stress events through Chi Square analysis, and obtained a p value = 0.276, which means there is no relationship between gender and stress in prospective hajj pilgrims. Women are at 1.269 times higher risk of experiencing anxiety disorders than men. In this study, 58 (9.2%) of 627 participants in the age group under 60 years experienced anxiety disorders. Then, 57 (11.8%) of 485 participants in the age group over 60 years experienced anxiety disorders. Age is associated with the incidence of anxiety disorders through Chi Square analysis, obtained a p value = 0.197. The age group over 60 years is 1.3 times more at risk of experiencing anxiety disorders.

In the high education group, 35 (8.4%) of 417 participants experienced anxiety disorders. In the age group over 60 years, 80 (11.5%) of 695 participants experienced anxiety disorders. The level of education with anxiety disorders was linked through Chi Square analysis, with a p value of 0.104, meaning there was no relationship between the level of education and anxiety disorders in prospective Hajj pilgrims. Participants with low education levels were 1.42 times more at risk of experiencing anxiety disorders. The relationship between risk factors and anxiety disorders can be summarized in the table below.

Table 3. Relationship between Age, Gender, Education and Anxiety Disorders

Group	Anxiety Disorders				Total		<i>p-value</i>	OR	95%CI
	Normal		Anxiety						
	n	%	n	%	n	%			
Gender							0.235	1,269	0.855-1.884
Man	448	90.9%	45	9.1%	493	100			

Woman	549	88.7%	70	11.3%	619	100			
Age							0.174	1,307	0.888-1.923
<60 years	569	90.8%	58	9.2%	627	100			
>= 60 years	428	88.2%	57	11.8%	485	100			
Education							0.098	1.42	0.935-2.155
higher education	382	91.6%	35	8.4%	417	100			
Low Education	615	88.5%	80	11.5%	695	100			

In this study, 4 (0.8%) of 493 male participants experienced stress, and 21 (3.4%) of 619 female participants experienced stress. Gender is associated with stress with Chi Square analysis with p value = 0.02, which means there is a relationship between gender and stress. Women are at 4.3 times higher risk of experiencing stress than men. In this study, 9 (1.4%) of 627 participants under 60 years old experienced stress. Participants over 60 years old experienced stress as many as 16 (3.3%) of 485 participants. Age is associated with stress events through Chi Square analysis, obtained p value = 0.038, namely there is a relationship between age and stress events. Age over 60 years old has a risk 2.3 times higher than participants under 60 years old.

In this study, 8 (2%) of 417 participants with higher education experienced stress, and 17 (2.4%) of 695 participants with lower education experienced stress. The level of education was associated with the occurrence of stress through Chi Square with a p value = 0.678, which means there was no relationship between the level of education and the occurrence of stress. People with higher education have a 1.2 times lower risk of experiencing stress than people with lower education. The relationship between risk factors and stress disorders can be summarized in the table below.

Table 4. Relationship between Age, Gender, Education and Stress Disorders

Group	Stress Disorder				Total		p-value	OR	95%CI
	Normal		Anxiety						
	n	%	n	%	n	%			
Gender							0.004	4,293	1,464-12,590
Man	489	99.2%	4	0.8%	493	100			
Woman	598	96.6%	21	3.4%	619	100			
Age							0.038	2,343	1,039
<60 years	618	98.6%	9	1.4%	627	100			
>= 60 years	469	96.7%	16	3.3%	485	100			
Education							0.566	1,282	0.548-2.997
higher education	409	98%	8	2%	417	100			
Low Education	678	97.6%	17	2.4%	695	100			

4. Discussion

From the results of the univariate analysis that has been carried out, prospective hajj pilgrims are male, as many as 493 participants and female as many as 619 participants. The majority of prospective hajj pilgrims are women. This result is the same as the study conducted by Salman and Atik in 2022 in West Java, namely that the majority of prospective hajj pilgrims are women.¹⁷ In addition, research conducted by Yusri, et al. in Palembang in 2019 also showed the same results, namely that the majority of prospective hajj pilgrims are women, with a total of 160 participants and 148 male participants.¹⁸ In this study, prospective hajj pilgrims aged under 60 years were found more, with a total of 627 participants, while those aged over 60 years were 485 participants. The distribution of the majority of ages in this study is the same as the results of the study conducted by Salman and Atik, namely 11,262 participants aged over 60 years and 27,915 participants aged under 60 years.¹⁷ Other data that supports this study is a study conducted by Melda in 2022 in Riau, the majority of Hajj pilgrims were under 60 years old, as many as 1,909 participants, and over 60 years old as many as 403 participants. Data from this study also shows that the majority of participants' education levels are low education, with a total of 695 participants, while higher education is 417 participants.¹⁹

In this study, the results obtained were participants with depression as many as 28 participants, anxiety disorders 115 participants, and stress 25 participants. This shows that anxiety disorders are more common than depression and stress. The results of this study are in line with research conducted by Liesay, et al., where the prevalence of anxiety disorders is higher than depression and stress.²⁰

In this study, out of 485 male participants, 8 (1.6%) participants experienced depression. There were 20 female participants who experienced depression (3.2%). The results of the analysis showed no significant relationship between gender and depression. These results are in line with research conducted by Safitri et al. in 2020, which analyzed the relationship between gender and depression in the elderly, namely that there was no relationship between gender and depression.²¹ Other supporting research results are research conducted by Forlani et al. in Italy, showing that there is no relationship between gender and depression.²² However, Shafa et al. also conducted research on the relationship between gender and depression showing no significant relationship.²³

In this study, out of 618 participants aged less than 69 years, there were 9 (1.4%) participants experiencing depression. Out of 456 participants aged over 60 years, there were 19 (4%) participants experiencing depression. The results of the analysis showed that there was a relationship between age and depression. This study, in line with research conducted by Shamsuddin, et al. showed a relationship between age and depression, where older age had a higher risk of experiencing depression.²⁴ Another study conducted by Nafsiah et al., found a relationship between age and the incidence of depression.²³

A total of 12 (%) participants from a total of 405 participants with a history of high education experienced depression. Furthermore, 16 (%) participants from 679 participants with a history of low education experienced depression. After analyzing the relationship between education level and depression, the results showed no relationship. This study is not in line with the study conducted by Sutinah and Maulani in 2017, which found that there was a relationship between education and the

incidence of depression. The difference in the results of this study may be due to differences in population.²⁶ Likewise, the study conducted by Novi, et al. stated that there was a relationship between education and the incidence of depression.²¹

The results of this study were that out of 493 male participants, 45 (%) participants experienced anxiety disorders. The number of female participants was 619 participants, 70 (%) of whom experienced anxiety disorders. After analyzing the relationship between gender and the incidence of anxiety disorders, it was found that there was no relationship between the two variables. This study is in line with research conducted by Nining, et al. in 2020 at Pringadi Hospital, Medan, which found that there was no relationship between the two variables.²⁷ This study is also in line with research conducted by Pani, et al. in 2016, which found that there was no relationship between gender and the incidence of anxiety disorders.²⁸ The increase in generalized anxiety disorders in women is based on the fact that women are more likely to admit that they have experienced anxiety. In men, they are more likely to be diagnosed with alcohol-related disorders than anxiety disorders.²⁹

Next, the results of this study, out of 627 participants under the age of 60 years, there were 58 (%) participants experiencing anxiety disorders, and out of 485 participants over the age of 60 years, there were 57 (%) participants experiencing anxiety disorders. After bivariate analysis, it was found that there was no relationship between these variables. This study is in line with research conducted by Stephanie, et al. in 2023, which found that there was no relationship between age and anxiety disorders.³⁰ However, different results were obtained in a study conducted by Mitchell in 2019. This study obtained significant results, namely that there was a relationship between age and anxiety disorders. This difference of opinion could be due to different scoring methods, namely using the GAD-7 scoring.³¹

A total of 417 participants with a high level of education, 35 (%) of whom experienced anxiety disorders. Meanwhile, from 695 participants with a low level of education, 80 (%) of participants experienced anxiety disorders. Bivariate analysis was conducted, and the results showed that there was no relationship between the two variables. This study is in line with research conducted by Pani, et al., which found that there was no relationship between them.²⁸ Elderly people with higher education will have better access to health information, be more active in determining attitudes, and be more independent in taking care of themselves.³²

The results of this study, as many as 493 male participants, 4 (%) of whom experienced stress. As many as 619 (%) female participants, 21 (%) of whom experienced stress. After conducting bivariate analysis, it was found that there was a significant relationship between gender and stress events. The results of Lusia et al.'s research in Yogyakarta, found that there was a significant difference between the stress levels of women and men, where the stress levels in women were higher.³³ In a study conducted by McDonough, et al., it was found that the distress score in women was 23% higher than in men.³⁴ Research by Asep et al., there was a relationship between gender and stress levels, where women had higher stress levels than men.³⁵

Furthermore, as many as 627 participants under the age of 60 years, 9 (%) of them experienced stress. As many as 485 participants over the age of 60 years, as many as 16 (%) of them experienced stress. After bivariate analysis, the results showed that there was a significant relationship between age and the occurrence of stress. This

is in line with research conducted by Asep, et al. in 2022, namely that in the elderly, higher levels of stress were found compared to adults.³⁵

A total of 417 participants with high education levels, 8 of whom experienced stress. Of the 695 participants with low education levels, 17 of whom experienced stress. Then, a bivariate analysis was conducted, the results showed that there was no significant relationship between the two variables. Research conducted by Marjinovic, Ina, et al. in 2021 showed statistically significant differences in levels of depression, anxiety, and stress in participants from different education levels.³⁶ Research by Ryo Gobel, et al. found that there was no significant relationship between education level and stress events.³⁷

5. Conclusions

Based on the results and discussion of the research conducted with a sample of prospective Hajj pilgrims in Palembang City in 2023, several important findings can be concluded. Of the 1,112 study participants, 28 participants (2.5%) experienced depression, 115 participants (10.3%) experienced anxiety disorders, and 25 participants (2.5%) experienced stress. In addition, this study also found that there was a significant relationship between age and the incidence of depression. However, there was no significant relationship between gender and education level and the incidence of depression. This study shows that there is no significant relationship between age, gender, education, and anxiety. There is a significant relationship between gender and age with the incidence of stress, while education level does not significantly affect the incidence of stress. These findings provide valuable insights into the factors that influence the mental well-being of prospective Hajj pilgrims and can be the basis for developing more effective interventions in the future.

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