



Physical fitness of prospective pilgrims: Hajj and Umrah gymnastics

Acondicionamiento físico de los futuros peregrinos: gimnasia para el Hayy y la Umrah

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How to cite in APA

Sukendro, S., Ihsan, F., A. P., Nugraha, U.,
 Suhartini, S., Anjanika, Y., & Khairunnisa,
 F. (2025). Physical Fitness Of Prospective
 Pilgrims: Hajj And Umrah Gymnastics.
Retos, 67, 1155–1165.
<https://doi.org/10.47197/retos.v67.114961>

Abstract

Background: Physical fitness is crucial for the smooth execution of Hajj and Umrah, as approximately 70% of the pilgrimage involves intense physical activity, including walking long distances, prolonged standing, and exposure to extreme temperatures. Many prospective pilgrims lack optimal physical readiness, increasing their risk of fatigue and health issues. Effective exercise strategies are needed to enhance their endurance before departure.

Objectives: This study analyzes the urgency of physical fitness for Hajj and Umrah pilgrims, evaluates the effectiveness of Hajj and Umrah gymnastics, and provides recommendations for pre-departure exercise programs.

Methods: Using a descriptive-analytical approach, this study employs a literature review method, gathering data from scientific journals, reference books, research reports, and government regulations. A qualitative analysis compares various studies on the effectiveness of physical exercise in improving pilgrims' readiness.

Results: Structured physical exercises, such as Hajj and Umrah gymnastics, improve cardiovascular endurance, strengthen leg muscles, and enhance balance. Studies indicate that regular practice for three months before departure increases VO2 max and reduces cardiovascular risk.

Conclusion: Physical fitness is essential for a successful pilgrimage. Hajj and Umrah gymnastics are effective in enhancing pilgrims' readiness and should be integrated into Hajj guidance programs, supported by government policies for wider implementation.

Keywords

Physical fitness, Hajj gymnastics, Hajj worship, physical endurance, physical exercise.

Resumen

Antecedentes: La forma física es crucial para la realización sin problemas del Hayy y la Umrah, ya que aproximadamente el 70% de la peregrinación implica una actividad física intensa, que incluye caminar largas distancias, permanecer de pie durante mucho tiempo y exponerse a temperaturas extremas. Muchos futuros peregrinos carecen de una preparación física óptima, lo que aumenta su riesgo de fatiga y problemas de salud. Se necesitan estrategias de ejercicio efectivas para mejorar su resistencia antes de la partida.

Objetivos: Este estudio analiza la urgencia de la preparación física de los peregrinos del Hayy y la Umrah, evalúa la eficacia de la gimnasia para el Hayy y la Umrah, y ofrece recomendaciones para los programas de ejercicios previos a la partida.

Métodos: Mediante un enfoque descriptivo-analítico, este estudio emplea un método de revisión bibliográfica, recopilando datos de revistas científicas, libros de referencia, informes de investigación y normativas gubernamentales. Un análisis cualitativo compara diversos estudios sobre la eficacia del ejercicio físico para mejorar la preparación de los peregrinos.

Resultados: Los ejercicios físicos estructurados, como la gimnasia para el Hayy y la Umrah, mejoran la resistencia cardiovascular, fortalecen los músculos de las piernas y mejoran el equilibrio. Los estudios indican que su práctica regular durante tres meses antes de la partida aumenta el VO2 máx. y reduce el riesgo cardiovascular.

Conclusiones: La forma física es esencial para el éxito de la peregrinación. La gimnasia para el Hayy y la Umrah es eficaz para mejorar la preparación de los peregrinos y debería integrarse en los programas de orientación para el Hayy, con el apoyo de políticas gubernamentales para una aplicación más amplia.

Palabras clave

Aptitud física, gimnasia del Hayy, culto del Hayy, resistencia física, ejercicio físico.



Introduction

Hajj and Umrah are mandatory worship for Muslims who are physically and financially capable. Ability or *istithaah* in the perspective of Islamic jurisprudence is not only limited to economic aspects, but also includes aspects of physical and spiritual health. Health is an important factor because Hajj and Umrah involve intensive physical activity. Data shows that a large portion of the Hajj and Umrah pilgrimage consists of physical activity—including walking long distances, standing for extended periods, and coping with extreme environmental conditions—highlighting the critical role of physical endurance in pilgrimage performance (Elwindra, 2020), such as walking long distances, standing for long periods of time, and traveling through extreme environmental conditions (Elwindra, 2020). The rest, which is 30%, is a spiritual aspect that also requires excellent physical condition so that it can be carried out solemnly and perfectly.

Physical preparation is one of the key factors in the smooth running of the Hajj and Umrah pilgrimage. However, based on a report from the Ministry of Religious Affairs of the Republic of Indonesia, the death rate of Indonesian pilgrims in the last 12 years has reached an average of 328.7 people per year. This number accounts for approximately 0.2–0.3% of total Indonesian pilgrims each year, which, although seemingly small, reflects a significant burden given the preventable nature of many cases—especially those related to cardiovascular conditions with the main causes including cardiovascular disease, extreme fatigue, and respiratory disorders (Azhar, 2022). Therefore, physical readiness before leaving for the holy land is an aspect that cannot be ignored.

Although spiritual preparation is a major concern for prospective pilgrims, the aspect of physical fitness is often under-noticed. Most prospective Hajj pilgrims only follow *manasik* guidance as preparation for worship, but ignore the importance of structured physical exercise. Previous studies have examined the role of physical conditioning programs for older adults, such as community-based aerobic training and balance-enhancing exercise, which have shown effectiveness in improving functional capacity. However, there is still limited synthesis of research that specifically targets pre-Hajj fitness programs in Southeast Asia or among Muslim pilgrims globally. In fact, considering the geographical conditions of Saudi Arabia that are different from Indonesia—both in terms of climate, temperature, and humidity level—prospective pilgrims need optimal immunity to carry out the series of worship properly (Idawati, 2017).

One effective way to improve the physical fitness of prospective Hajj and Umrah pilgrims is to do regular physical exercise before departure. This training program can be in the form of aerobic exercise, strength training, and flexibility training that can improve heart and lung endurance. In this case, Hajj and Umrah gymnastics is one of the recommended methods because it is specifically designed to improve physical fitness according to the needs of prospective pilgrims (Mulyadi & Rifki, 2021).

In the context of the importance of physical fitness for prospective Hajj and Umrah pilgrims, this study raises several main problems that need to be studied more deeply:

1. How to maintain and improve the physical fitness of prospective Hajj and Umrah pilgrims so that they can carry out worship optimally?
2. How effective are Hajj and Umrah gymnastics in increasing the physical endurance of prospective pilgrims?
3. What factors affect the physical fitness of prospective pilgrims before departure?

These questions are further specified in this study as follows: (a) identifying the physiological indicators most relevant to Hajj preparation, such as VO_2 max and muscle endurance; (b) evaluating the measurable effects of Hajj and Umrah gymnastics interventions; and (c) analyzing modifiable pre-departure risk factors

This research aims to:

The study adopts a health promotion and preventive care framework, emphasizing the principles of exercise physiology and geriatric fitness. It is guided by the concept of *istithaah* (capability), which integrates physical preparedness as a prerequisite for the safe and effective performance of religious duties.



1. Explaining the urgency of physical fitness for prospective Hajj and Umrah pilgrims in supporting the smooth running of worship.
2. Analyzing the effectiveness of Hajj and Umrah gymnastics as a physical exercise method in improving the fitness of pilgrims.
3. Providing recommendations related to training programs that can be applied before the departure of Hajj and Umrah to improve physical readiness.

This research is expected to contribute to the preparation of physical fitness programs for prospective Hajj and Umrah pilgrims. With a deeper understanding of the importance of physical exercise before departure, it is hoped that pilgrims can be more physically prepared to face the challenges of worship in the holy land. In addition, the results of this study can be a reference for the government, especially the Ministry of Religion and the Ministry of Health, in formulating policies related to the health development of Hajj and Umrah pilgrims.

Istithaah health in Hajj and Umrah refers to the ability of prospective pilgrims to perform worship without experiencing health issues that could endanger their safety. The Ministry of Health of the Republic of Indonesia has established regulations regarding health checks for prospective Hajj pilgrims through Minister of Health Regulation Number 15 of 2016. This examination covers both physical and mental aspects, aiming to ensure that pilgrims are in adequate health to undertake the series of religious rituals. (Republik Indonesia, 2019).

There are four categories of health istithaah for Hajj pilgrims, namely:

1. Meet the requirements for health istithaah without assistance – Pilgrims are in good physical condition and able to carry out worship without obstacles.
2. Eligible with assistance – Pilgrims who are elderly or have certain diseases but can still carry out worship with the help of medical equipment or companions.
3. Temporarily eligible – Pilgrims who have not met health standards but have the potential to improve with treatment or rehabilitation.
4. Not eligible for health istithaah – Pilgrims who have severe health conditions or terminal illnesses that make it impossible to perform the Hajj.

Physical activities carried out during the Hajj involve various movements such as walking long distances, climbing stairs, and standing for a long time during wukuf in Arafah. Additionally, extreme heat in Saudi Arabia can lead to dehydration and fatigue if pilgrims do not have optimal fitness (Kokkinos & Myers, 2010).

Some of the physical challenges that are often experienced by Hajj and Umrah pilgrims include:

1. Fatigue from long walks – Tawaf and sai require high stamina because they involve repetitive movements of moderate to high intensity.
2. Less than ideal foot structure – Many pilgrims have flat feet, which can lead to body imbalance during long walks (Muhyi et al., 2022).
3. Aging factor – The majority of pilgrims come from the age group over 50 years old, where there is a decrease in muscle strength and cardiopulmonary endurance.

Therefore, physical exercise before departure is essential to prepare the body for these challenges. Hajj and Umrah gymnastics is one of the methods that can be applied to improve fitness, flexibility, and body balance.

Physical fitness is very crucial in guaranteeing easy Hajj and Umrah performance. Because of the physical challenges that pilgrims undergo in the holy land, effective physical exercise is necessary in order to perform the rituals effectively. One recommended method is Hajj and Umrah gymnastics, designed to enhance the physical endurance of prospective pilgrims. By physical conditioning, pilgrims can minimize the risks of fatigue and sickness during worship, allowing them to perform their religious duties with greater focus and devotion.

Method

This research employs a qualitative descriptive-analytical literature review. The primary aim is to investigate the status of physical fitness in potential Hajj and Umrah pilgrims' training and evaluate physical training effectiveness, focusing particularly on Hajj and Umrah gymnastics. The study discusses different determinants affecting the physical fitness level of potential pilgrims, such as physiological factors, age determinants, and environmental factors during pilgrimage.

Data utilized for this research are from primary sources such as scientific articles, reference textbooks, and research reports that are associated with physical fitness, aerobic training, and pilgrims' physical training for Hajj and Umrah. Secondary data sources are also utilized, such as government policies related to pilgrims' fitness requirements, statistical reports from the Ministry of Religion and the Ministry of Health, and medical checkups from individuals who have previously carried out Hajj and Umrah.

Data collection includes different phases. Initially, the pertinent scholarly content is determined by academic databases such as Google Scholar, Scopus, PubMed, and ResearchGate. Specific search terms used included combinations such as "Hajj physical preparation," "Umrah fitness training," "VO2 max pilgrims," and "aerobic exercise elderly." Boolean operators like AND/OR were utilized, and filters were applied to restrict the publication date from 2013 to 2023. The governmental policies and regulations concerning the health of Hajj and Umrah pilgrims are also analyzed. Then, a thorough screening and evaluation of the literature available is conducted, prioritizing research that has followed set standards of scientific validity and reliability. Each article was assessed using the Critical Appraisal Skills Programme (CASP) checklist to evaluate quality, while relevance was determined by alignment with the research objectives and population characteristics similar to prospective Hajj pilgrims and more specifically those published within the last ten years to ensure relevance to current contexts. The inclusion criteria included peer-reviewed articles published between 2013 and 2023, focusing on physical fitness, aerobic exercise, and Hajj/Umrah preparation. Exclusion criteria involved studies with unclear methodology, non-peer-reviewed sources, and articles not available in full text. Research that evaluates the effectiveness of physical exercise in enhancing fitness levels, and more specifically Hajj and Umrah gymnastics, is given particular attention.

Data analysis uses a descriptive-qualitative approach to identify patterns and correlations. Thematic analysis was employed following Braun and Clarke's six-phase framework, including familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining themes, and writing up concerning physical fitness and physical preparedness of potential pilgrims. The results from the literature review are organized according to main variables: factors that affect the fitness level of Hajj and Umrah pilgrims, the advantages and efficacy of physical training, and the contribution of Hajj and Umrah gymnastics towards physical preparation. The findings are subsequently contrasted with existing research in order to determine gaps and make more comprehensive suggestions.

To ensure the validity and reliability of the research findings, data triangulation is performed. This includes comparing information from various credible scientific references (source triangulation), integrating descriptive analysis with comparisons of previous studies (method triangulation), and conducting conceptual validation through expert analysis in the field of physical fitness and the health of Hajj and Umrah pilgrims. Data triangulation involved cross-checking findings from different types of sources, including empirical studies, government reports, and expert commentary. The expert analysis included feedback from two academics specializing in sports science and one physician with experience in Hajj health services, who reviewed and validated the thematic synthesis.

This research has several limitations that need to be considered. This study only focuses on literature review without direct empirical data collection from prospective Hajj and Umrah pilgrims. In addition, this study did not conduct a direct test on the effectiveness of Hajj and Umrah gymnastics in improving physical fitness. Psychosocial and cultural factors in the physical preparation of prospective pilgrims were also not analyzed in depth. With this research method, it is hoped that a clearer understanding of the importance of physical fitness for prospective Hajj and Umrah pilgrims and the role of physical exercise, especially Hajj and Umrah gymnastics, in improving their physical readiness.

Although the study was based on secondary data and did not involve direct interaction with human subjects, ethical considerations were observed by properly citing all sources and adhering to responsible research practices. No ethical clearance was required due to the nature of the study.

Results

This section presents findings from selected studies through a thematic synthesis approach. Each study was screened for methodological rigor using inclusion criteria such as sample size, study design, and outcome measures. Where available, statistical significance and effect sizes are noted to distinguish between anecdotal evidence and validated results.

1. Physical Fitness Concept

Physical fitness is an important aspect in supporting a person's physical activity. The definition of physical fitness is often associated with the body's ability to perform daily activities without experiencing excessive fatigue and still having energy reserves for additional activities (Hoeger, WK et al., 2019). The main components of physical fitness include cardiovascular endurance, muscle strength, muscle endurance, flexibility, and body composition (Angulo et al., 2020). Cardiovascular endurance is related to the ability of the heart and lung systems to provide oxygen to the body's tissues during prolonged physical activity.

In the context of Hajj and Umrah, physical fitness plays a role in supporting quite intense physical activity, such as walking long distances, standing for long periods of time, and performing certain worship movements that require balance and flexibility. VO2 max, which is the maximum volume of oxygen that the body can use during intensive physical activity, is the main indicator of physical fitness that is relevant in assessing the readiness of prospective Hajj and Umrah pilgrims (Huldani et al., 2020). Factors that affect physical fitness include age, gender, genetics, exercise patterns, and overall lifestyle.

2. Factors Affecting Congregational Fitness

A person's level of physical fitness is influenced by various factors, both biological and environmental. One of the main factors is age, where a person's physical abilities decline with age. The majority of Hajj pilgrims come from the elderly group who experience decreased organ function, such as reduced heart and lung capacity, weakened muscle strength, and decreased body balance and coordination (Taylor, 2014).

The second factor is lifestyle and physical activity before departure. Pilgrims who are accustomed to doing regular physical activities, such as walking or aerobic exercise, have better immunity compared to less active pilgrims (Booth et al., 2012). Study by (Sepriadi et al., 2017) It shows that prospective pilgrims who have the habit of exercising regularly have a better level of fitness compared to those who rarely do physical activity.

In addition, diet also contributes to maintaining physical fitness. A healthy and balanced diet, especially one rich in protein, fiber, and low in saturated fat, helps maintain cardiovascular health and increase body stamina (Thivel et al., 2013). On the other hand, dehydration is a factor that is often overlooked by prospective pilgrims. Lack of body fluids can lead to decreased concentration, rapid fatigue, and an increased risk of heat stroke while in Saudi Arabia (Pratama et al., 2020).

3. Impact of Physical Unpreparedness

Lack of physical fitness before leaving for Hajj can have a negative impact on the physical condition of pilgrims. Based on data from the Ministry of Health of the Republic of Indonesia, one of the main causes of death of Hajj pilgrims is cardiovascular disease and respiratory disorders which are exacerbated by a lack of physical fitness (Azhar, 2022).

Physical unpreparedness can cause extreme fatigue that interferes with the smooth running of worship, especially in the implementation of tawaf and sa'i which require high endurance. Study conducted by (Muhyi et al., 2022) Identify three main physical complaints experienced by pilgrims, namely: (1) fatigue due to long walks, (2) disturbances in the soles of the feet due to less than ideal foot structure, and (3) deterioration in physical condition due to age factors.



In addition, the difference in climate between Indonesia and Saudi Arabia is also a factor that worsens the health condition of pilgrims. High temperatures in Saudi Arabia can accelerate dehydration and increase the risk of heatstroke for pilgrims who do not have good immunity (Kokkinos & Myers, 2010). Therefore, physical preparation before departure is a crucial factor in supporting the smooth running of worship.

4. The Importance of Physical Exercise for Pilgrims

Physical exercise is a crucial way of improving the physical fitness of individuals taking Hajj and Umrah pilgrimages. Research shows that aerobic exercises like walking, running, or light gymnastics can heighten cardiovascular endurance and minimize risks of chronic illnesses that could interfere with worship activities (Suryanto, 2010).

Experts recommend that potential pilgrims undertake 30 minutes of aerobic exercise per day, at least five days a week. The exercise aims at improving VO₂ max, improving blood circulation, and maximizing the effectiveness of the respiratory system (Ningsih, 2005). Stretching exercises and weight training are essential in the prevention of injury as well as in improving flexibility of the body when performing prayers.

The other highly beneficial exercise mode for pilgrims is Hajj gymnastics, which incorporates stretching, respiratory exercise, and endurance exercise in the form of 15 to 30-minute sessions (Oktariyani, 2019). The program has been conducted in numerous areas in Indonesia and has been effective in enhancing the pilgrims' endurance prior to their departure for pilgrimage.

The significance of physical training prior to traveling is also highlighted by (Boström et al., 2013) who found that pilgrims who had exercised regularly prior to embarking on Hajj were likely to perform the pilgrimage without any challenge and without any health complication. Therefore, a well-tailored physical training program should be made an essential component of the preparatory process of prospective pilgrims in order to maintain their health and well-being while performing their worship in the Holy Land.

This research highlights the important position of physical fitness in the successful fulfillment of Hajj and Umrah. Poorly physically fit individuals are more likely to be exhausted, are at greater health risk, and find it harder to go through the complete set of worship rites. In order to gain a clearer picture of the fitness problems of potential pilgrims and also the solutions thereof, the following information is provided in the form of a table.

Table 1 displays various fitness issues faced by pilgrims preparing for Hajj and Umrah pilgrimages, along with the possible solutions that can be provided through the implementation of Hajj and Umrah gymnastics.

Table 1. Fitness Challenges for Hajj and Umrah Pilgrims and Their Solutions

| Challenge | Explanation | Solutions with Hajj and Umrah Gymnastics |
|--|--|--|
| Fatigue from long walks | Hajj and Umrah involve intense physical activities such as tawaf (7 rounds), sa'i (3.5 km), and trips to Arafah, Mina, Muzdalifah. | Increase cardiopulmonary endurance through aerobic exercise in Hajj and Umrah gymnastics. |
| Less than ideal foot structure (flat foot) | Pilgrims with flat feet tend to experience imbalance and pain when walking long distances. | Balance exercises and strengthening leg muscles in gymnastics help with body stability. |
| The majority of pilgrims are elderly | Older pilgrims experience decreased fitness, muscle mass, and a higher risk of hypertension and heart disease. | Flexibility and strength training in gymnastics can improve mobility and lower the risk of chronic diseases. |

(Sources: Fatigue from long walks: Muhyi et al., 2022; Foot structure issues: Pratama et al., 2020; Elderly pilgrims: Taylor, 2014; Kokkinos & Myers, 2010)

Hajj and Umrah gymnastics are designed with a certain duration and stages to provide optimal benefits for the fitness of pilgrims. Details of the composition of this exercise can be seen in Table 2.

Table 2. Duration and Composition of Hajj and Umrah Gymnastics Exercises

| Training Stages | Duration | Purpose |
|-----------------|--------------|--|
| Warming | ± 5 minutes | Improves blood circulation, reduces the risk of injury, and prepares the body. |
| Core Exercises | ± 7 minutes | Train cardiopulmonary endurance, improve muscle strength, and body balance. |
| Cooling | ± 3 minutes | Normalizes heart rate, reduces muscle tension, and aids in recovery. |
| Total Duration | ± 15 minutes | Included in the category of moderate aerobic exercise (8-30 minutes). |



Narrative and tabular presentations were used complementarily. Quantitative outcomes are presented in tables to allow for visual comparison, while qualitative insights and thematic elaboration are provided narratively

Through regular and structured exercises, Hajj and Umrah gymnastics provide various benefits for the health of prospective pilgrims. Table 3 summarizes the main benefits of this exercise.

Table 3. Benefits of Hajj and Umrah Gymnastics for Prospective Pilgrims

| Benefit | Explanation |
|--|--|
| Increases cardiopulmonary endurance | Increases VO2 max, so the body uses oxygen more efficiently when walking long distances. |
| Strengthens the muscles of the legs and lower body | Reduces the risk of injury and makes it easier to move during tawaf and sa'i. |
| Improves flexibility and balance | Reduces the risk of falls or injuries due to loss of balance. |
| Maintaining stability of blood pressure and blood sugar levels | Reduce the risk of hypertension and diabetes during Hajj and Umrah. |

In order for the exercise to provide maximum results, prospective pilgrims are advised to start physical preparation long before departure. Applicable exercise recommendations are described in Table 4.

Table 4. Recommendations for Exercises for Prospective Pilgrims

| Aspects of Training | Recommendations |
|-----------------------|---|
| Training Start Time | At least 3 months before departure. |
| Frequency of Exercise | 3-4 times per week. |
| Additional Training | Walk or jog for 30 minutes per day to increase endurance. |
| Supporting Factors | Healthy diet, adequate hydration, and good rest. |

Table 5. Quantitative Data on Hajj and Umrah Pilgrims' Fitness and Exercise Effectiveness

| Category | Indicator | Data | Source |
|---|--|---|-----------------------------|
| Number of Hajj and Umrah Pilgrims | 2022 | Hajj: 150,200, Umrah: 957,016, Total: 1,107,216 | Ministry of Religion (2023) |
| | 2023 (Jan-Aug) | Umrah: 808,301 | |
| Causes of Death of Hajj Pilgrims (Average per Year) | Cardiovascular Diseases | 1,512 (46%) | Kakhi Makkah (2021) |
| | Respiratory Disorders | 986 (30%) | |
| | Other Causes | 789 (24%) | |
| Fitness Level of Pilgrims Based on Age | < 40 years | Good (≥ 40 ml/kg/min), 25% | Yusri et al. (2020) |
| | 40-50 years old | Enough (30-39 ml/kg/min), 35% | |
| | 51-60 years old | Less (20-29 ml/kg/min), 28% | |
| | > 60 years | Very Less (< 20 ml/kg/min), 12% | |
| Effectiveness of Hajj and Umrah Gymnastics | VO2 Max (ml/kg/min) | Before: 22.5, After: 30.8 (137%) | Ningsih (2005) |
| | Muscle Endurance (push-ups per minute) | Before: 12, After: 20 (167%) | |
| | Flexibility (cm, sit & reach test) | Before: 18, After: 25 (139%) | |
| | Balance (seconds, one-leg stand test) | Before: 12, After: 19 (158%) | |
| Exercise Recommendations for Pilgrims | Hajj and Umrah Gymnastics | 15 minutes, 3-4x/week | Mulyadi & Rifki (2021) |
| | Fast Walk | 30 minutes, 5x/week | |
| | Strength Exercises (squats, push-ups) | 15 minutes, 2-3x/week | |
| | Balance Exercises | 10 minutes, 2-3x/week | |

These results were derived from a pre-post intervention study with a sample of 30 non-high-risk pilgrims, conducted by Ningsih (2005). However, the study did not report p-values or confidence intervals, limiting conclusions about statistical significance. Caution is advised in generalizing these findings.

By understanding the challenges faced and implementing solutions through proper physical exercise, it is hoped that prospective pilgrims can carry out the Hajj and Umrah pilgrimage more smoothly and comfortably

Discussion

Significance of Physical Fitness in Hajj and Umrah

Physical fitness has a crucial role in the implementation of Hajj and Umrah. According to (Elwindra, 2020), about 70% of this series of worship consists of physical activity that involves walking long distances, standing for long periods of time, and adjusting to extreme environmental conditions. Therefore, physical fitness is a determining factor for the smooth running of worship.

According to research by (Yusri et al., 2020), the majority of Indonesian Hajj pilgrims experience physical limitations due to lack of preparation before departure. The study found that pilgrims who did not do regular physical exercise before the Hajj were more prone to extreme fatigue, muscle pain, and respiratory distress. Therefore, careful physical preparation, especially through a special training program, is indispensable.

The Ministry of Health of the Republic of Indonesia also emphasizes the importance of physical fitness through the Regulation of the Minister of Health Number 15 of 2016 concerning the Health of Hajj Pilgrims. This regulation underlines the need for health checks and physical training programs before departure. Thus, the aspect of physical fitness must be the main concern for prospective pilgrims.

The Effectiveness of Hajj and Umrah Gymnastics in Improving the Fitness of Pilgrims

One of the methods that has proven effective in improving the physical fitness of prospective pilgrims is Hajj and Umrah gymnastics. This exercise was developed to improve heart and lung endurance, strengthen leg muscles, and improve body balance.

According to (Mulyadi & Rifki, 2021), Hajj gymnastics which is carried out regularly for three months before departure is able to increase the VO2 max of pilgrims by up to 15%. This increase shows that worshippers are better prepared to face physical challenges during the implementation of worship. In addition, a study by (Boström et al., 2013) also showed that aerobic exercise, including Hajj gymnastics, can reduce the risk of cardiovascular disease by up to 30%, which is one of the leading causes of death for Indonesian pilgrims (Azhar, 2022). This finding aligns with broader scientific literature on fitness interventions for older adults. For instance, Angulo et al. (2020) emphasize that structured physical exercise significantly contributes to enhanced physical capacity and reduced frailty in aging populations. Similarly, Booth et al. (2012) identified physical inactivity as a major contributor to chronic diseases, reinforcing the need for proactive conditioning programs like Hajj and Umrah gymnastics.

The Hajj gymnastics program consists of three main stages: warm-up (5 minutes), core training (7 minutes), and cool-down (3 minutes), with a total duration of about 15 minutes per session. This exercise is included in the category of moderate aerobics which is proven to increase the physical capacity of pilgrims without causing excessive fatigue. Therefore, the implementation of Hajj gymnastics as part of physical preparation before departure is highly recommended.

Comparison with Previous Research

Previous research has proven that regular physical exercise can increase the readiness of pilgrims in carrying out Hajj and Umrah. Study by (Kokkinos & Myers, 2010) It found that individuals who underwent aerobic exercise for at least 12 weeks before departure had higher levels of endurance compared to those who did not train.

In addition, research by (Ningsih, 2005) shows that Hajj gymnastics significantly increases the strength of the leg muscles, which are necessary to run thawaf and sa'i smoothly. Compared to pilgrims who did not do physical exercise, those who regularly practiced had a 40% lower risk of injury. This shows that a well-designed exercise program has a positive impact on the fitness of the congregation.

However, there are still challenges in the implementation of this program, especially in terms of congregational participation. Study by (Aladin et al., 2020) It found that about 60% of prospective pilgrims did not have the motivation to exercise before departure, citing reasons such as advanced age, time constraints, and lack of access to a structured exercise program.



Practical Implications

Based on these findings, there are several practical implications that can be applied to improve the fitness of prospective pilgrims:

a) Socialization and Education

1. The government and related institutions need to be more active in educating prospective pilgrims about the importance of physical fitness.
2. Awareness campaigns can be carried out through Hajj manasik guidance which includes special sessions on physical exercise.

b) Structured Training Programs

1. Hajj gymnastics must be made a mandatory program in Hajj preparation, with a minimum training frequency of three times a week for three months before departure.
2. Additional exercises such as walking and stretching are also recommended to improve endurance.

c) Supporting Policies

1. The Ministry of Religion and the Ministry of Health need to establish a mandatory policy for prospective pilgrims to undergo a fitness check before departure.
2. Wider physical training services should be available in different regions to ensure all prospective pilgrims get equal access to physical preparation programs.

Recommendations for Further Research

This study shows that physical fitness plays an important role in the smooth running of the Hajj and Umrah pilgrimage. However, there are still several aspects that need to be studied further, such as:

1. Further study on the effectiveness of individual-based exercises compared to group exercises in improving the fitness of prospective pilgrims.
2. Long-term evaluation of the impact of Hajj gymnastics on the health of pilgrims after returning to the country.
3. Development of exercise methods that are more suitable for elderly pilgrims and pilgrims with certain health conditions.

By implementing these findings, it is hoped that prospective pilgrims can be more physically prepared to face the Hajj and Umrah pilgrimage, so that they can carry out worship more solemnly and comfortably without significant physical constraints.

Conclusions

Based on the studies that have been carried out, it can be concluded that physical fitness has a very important role in supporting the smooth running of the Hajj and Umrah pilgrimage. With the composition of worship consisting of 70% physical activity and 30% spiritual aspects, Hajj and Umrah pilgrims need to have optimal physical readiness to undergo the entire series of worship without experiencing excessive fatigue or the risk of health problems.

The main obstacle for prospective Hajj pilgrims is their poor health. Most pilgrims lack proper exercise prior to traveling, which predisposes them to various medical problems, including prolonged fatigue, musculoskeletal pain, and cardiovascular disorders. In addition to this, the aspect of age is also a very significant factor in this regard since most pilgrims are aged individuals who have a tendency to suffer from diminished organ function along with declining physical strength. Moreover, climatic conditions, including temperature and humidity variations between Indonesia and Saudi Arabia, contribute to the physical challenges encountered by pilgrims. Adequate physical conditioning is thus necessary and should not be neglected.



In a bid to counter such challenges, exercising Hajj and Umrah gymnastics is considered an effective means of enhancing the degree of physical fitness among future pilgrims. Research has proven that through such exercise, cardiovascular endurance is enhanced, leg muscles are developed, and body balance and flexibility are enhanced. The routine involves three major phases: warm-up, core, and cool-down, taking about 15 minutes for each session. This particular form of exercise is a moderate aerobic exercise, which is ideal for enhancing physical capacity without leading to undue fatigue.

It has been proven through research that pilgrims who practice Hajj gymnastics regularly for three months prior to going on their pilgrimage experience a notable enhancement in immune function and a decrease in cardiovascular disease risk. These facts point to the efficacy of Hajj gymnastics as a form of physical conditioning prior to engaging in religious practices in the holy land. Thus, it is important that future pilgrims include this exercise in their preparation so that they are able to carry out their worship with ease and without physical challenges.

From a policy standpoint, it is important for the government and concerned institutions to play an active role in promoting awareness of the significance of physical fitness for Hajj pilgrims. The government can incorporate Hajj gymnastics into the official Hajj guidance program and make available training facilities for pilgrims in different regions. Furthermore, the implementation of a compulsory pre-departure fitness test could facilitate the identification of those who require additional support in their physical conditioning.

It is suggested that more studies should be done to investigate the efficacy of other physical exercises that may enhance the gymnastics involved in Hajj and Umrah. More so, research should be conducted investigating the long-term health outcomes to pilgrims once they have returned from Hajj. Developing a better insight into the need for physical fitness for Hajj and Umrah enables prospective pilgrims to be better equipped to handle physical challenges and engage in their worship with greater ease and dignity, without compromising on probable health problems.

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