International Journal of Integrated Science and Technology (IJIST)
Vol.4, No.6, 2026: June 2026: 365-374

Psychological Impact of Predeparture Medical Screening on Middle-Aged Hajj Pilgrims: A Cross-Sectional Study Using SRQ-20 in Malang City

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A R T I C L E I N F O

Keywords: Mental Health, SRQ-20, Medical Screening, Middle-Aged Pilgrims, Istitha'ah.

Received : 20, April
Revised : 15, May
Accepted: 22, June

A B S T R A C T

Background: Although physical eligibility (*istitha'ah*) is a central focus of Hajj health screening in Indonesia, the psychological dimension of readiness remains understudied. The third-stage predeparture medical examination, designed to confirm fitness for pilgrimage, may evoke emotional tension due to fear of disqualification especially among middle-aged pilgrims who often face comorbidities and psychosocial vulnerability. Objective: This study aimed to assess the psychological impact of stage-three medical screening on middle-aged Hajj pilgrims in Malang City, using the Self-Reporting Questionnaire-20 (SRQ-20), a screening tool for common mental disorders recommended by the World Health Organization. Methods: A cross-sectional survey was conducted among 172 pilgrims aged 45–65 who had completed the third-stage health screening at the Sukolilo Hajj Dormitory in Surabaya. Participants were selected purposively and assessed using the SRQ-20 instrument. Descriptive statistical analysis was applied to determine levels of psychological distress. Results: The mean SRQ-20 score was 1.14 (SD = 1.08), with no respondents scoring above the clinical cut-off (>5). This indicates an absence of significant emotional distress or psychiatric symptoms post-screening. The data suggest that the health clearance process served as a source of psychological reassurance rather than anxiety, reinforcing pilgrims' mental readiness for Hajj. Conclusion: Third-stage predeparture medical screening does not appear to compromise psychological well-being. On the contrary, it may enhance emotional resilience and preparedness. Incorporating brief mental health screening tools such as the SRQ-20 into existing *istitha'ah* protocols is recommended to promote holistic Hajj health certification

DOI: https://doi.org/10.59890/ijist.v4i6.31
ISSN: **3026-4685**
URL: https://journalijist.my.id/index.php/ijist

INTRODUCTION

Mental health is increasingly recognized as a critical component of public health, especially during mass gatherings such as the Hajj. Pilgrims often face environmental stressors crowding, heat, physical exertion that can exacerbate psychological vulnerabilities, particularly among middle-aged individuals with comorbidities (Alzahrani et al., 2021). Despite the focus on physical screening for chronic conditions like hypertension and diabetes (Yezli, S., & Ahmed, Q. A., 2020), mental health aspects have been underemphasized. Recent evidence suggests that anxiety and adjustment disorders may emerge during pre-departure or the pilgrimage itself (Nager et al., 2016), highlighting the need for psychological assessment early in the Hajj preparation period. The Self-Reporting Questionnaire-20 (SRQ-20), developed by WHO, is a validated tool for detecting common mental disorders in low- and middle-income countries (Ali et al., 2016). Its Indonesian version exhibits robust psychometric properties, with Cronbach's alpha values > 0.80 and clear factor structure (Prasetio et al., 2022). The SRQ-20 has proved feasible in primary care settings in Sao Paulo with sensitivity/specificity ~0.80 (Mari & Williams, 2018).Yet its deployment in Hajj contexts is limited, particularly during the critical pre-departure screening phase when pilgrims' mental states may be most vulnerable.

Most existing literature on Hajj health focuses on physical conditions (e.g., diabetes, hypertension) (Yezli, S., & Ahmed, Q. A., 2020) or post-hoc mental health events during pilgrimage (Alzahrani et al., 2021). However, there is a critical gap regarding psychological outcomes related to predeparture screening, especially in the Indonesian context. Given Indonesia's large pilgrim population and structured *istitha'ah* protocols, assessing mental impact using SRQ-20 during stage-three medical checks in Malang City fills a notable research void. This cross-sectional design enables early detection and policy-relevant insights. The concept of *istitha'ah*, or eligibility for Hajj, extends beyond physical health to encompass psychological readiness. While the Indonesian Ministry of Health has integrated multiple clinical parameters in stage-three screening (e.g., ECG, pulmonary function, glucose levels), psychological assessment is not formalized.

This omission is significant because anxiety due to potential disqualification may lead to increased cortisol levels and mood disturbances (Hankir et al., 2019). Integrating mental health tools such as SRQ-20 during predeparture checks aligns with WHO recommendations for holistic mass gathering preparedness (Pellegrin et al., 2020). This approach supports policy frameworks that call for mental resilience components within pilgrimage health protocols, shifting the practice from reactive to preventive mental health care.

Empirical studies on Hajj pilgrims primarily focus on psychiatric morbidity using diagnostic instruments like MINI and GHQ. A cross-sectional study in 2019 identified a 7.2% prevalence of psychiatric disorders among pilgrims (e.g., depressive disorder and suicidal ideation) (Alzahrani et al., 2021). Another longitudinal study in Iran using GHQ-28 showed stable mental health outcomes before and after Hajj, with no significant worsening. These mixed findings underscore the complexity of measuring psychological outcomes in

Hajj. They also suggest that stage-three screening, if properly managed, could serve to reassure rather than distress pilgrims. The SRQ-20 is widely validated in low- and middle-income country settings. The Indonesian version showed strong construct validity, with Cronbach's alpha exceeding 0.80 and a stable factor structure, confirming its reliability in non-clinical populations (Prasetio et al., 2022). International comparisons similarly support its psychometric soundness: Brazilian primary care validation studies reported sensitivity and specificity around 0.80 . This evidence supports the suitability of SRQ-20 for rapid mental health screening in community or field settings like predeparture screening for Hajj pilgrims.

Malang City, East Java home to a large cohort of potential pilgrims provides an ideal setting to study predeparture psychological readiness. Stage-three screening at the Sukolilo Hajj Dormitory is a nationally standardized process that reaches thousands of middle-aged pilgrims annually. A cross-sectional design captures pilgrims at the critical moment of mental readiness, immediately post-screening. This real-time assessment approach addresses literature gaps and enhances ecological validity relative to post-Hajj studies. Purposive sampling of 172 pilgrims aged 45–65 ensures focused insights into this high-risk demographic. This study aims to evaluate the psychological impact of stage-three predeparture medical screening among middle-aged pilgrims from Malang City using the SRQ-20. Beyond assessing mental morbidity prevalence, it seeks to explore whether predeparture reassurance offsets potential anxiety linked to medical disqualification. The findings are expected to bridge gaps in global Hajj health research, inform revision of Indonesian *istitha'ah* policy, and advance the integration of mental health screening in mass gathering protocols. Ultimately, the study aspires to nourish interdisciplinary dialogues in public health, mass gathering medicine, and religious health policy.

METHODS

Study Design and Setting

This study employed a descriptive cross-sectional design to evaluate the psychological status of middle-aged Hajj pilgrims following the third-stage predeparture medical screening. The research was conducted at the Sukolilo Hajj Dormitory in Surabaya, East Java, which serves as a regional health clearance center for Hajj pilgrims from Malang City and surrounding areas. Data were collected in May 2025, immediately after pilgrims had completed the final health eligibility examination (*istitha'ah*) mandated by the Indonesian Ministry of Health.

Participants and Sampling

The study population consisted of registered Hajj pilgrims aged 45 to 65 years from Malang City who had passed the third-stage screening process. A total of 172 participants were selected using purposive sampling based on the following criteria: (1) aged between 45–65 years; (2) had completed stage-three screening; (3) provided written informed consent; and (4) were mentally and physically capable of completing the self-report questionnaire. The sample size

was determined using Slovin's formula with a confidence level of 95% and a margin of error of 0.05, based on the estimated population of 509 eligible pilgrims.

Instruments and Measures

The psychological status of participants was assessed using the Self-Reporting Questionnaire-20 (SRQ-20), developed by the World Health Organization to detect common mental disorders (CMDs) such as anxiety, depression, and somatization. The Indonesian version of the SRQ-20 has been validated with strong psychometric properties (Cronbach's alpha > 0.80) and is widely used in primary care and community-based studies. The questionnaire consists of 20 yes/no items; a total score above 5 suggests the presence of CMDs. Additional demographic data (age, sex, education, and medical history) were also collected using a brief structured form.

Procedure

Eligible participants were approached by trained health personnel after completing their third-stage health screening. The purpose and procedures of the study were explained, and written informed consent was obtained. Participants then completed the SRQ-20 under supervision to ensure completeness and clarity. The data collection process took approximately 15–20 minutes per respondent. All responses were anonymized, and no identifiers were recorded to ensure confidentiality.

Data Analysis

Data were entered and analyzed using Microsoft Excel and SPSS version 26. Descriptive statistics were used to analyze sociodemographic variables and SRQ-20 scores. Mean, standard deviation, median, and range were calculated for continuous variables, while categorical variables were summarized using frequencies and percentages. No inferential tests were applied, as the study aimed only to describe mental health status rather than test hypotheses.

DISCUSSION

Our study found that no participants scored above the SRQ-20 cut-off (>5), which aligns with emerging evidence indicating that medical clearance can provide psychological reassurance rather than causing harm. This is consistent with a longitudinal Iranian study showing no significant deterioration in mental health post-Hajj (Hankir et al., 2019) . The low mean SRQ score (1.14 ± 1.08) suggests minimal mental distress, supporting the hypothesis that successful predeparture clearance may reduce anxiety related to disqualification. While psychiatric morbidity among pilgrims has been reported e.g., 7.2% prevalence via MINI in a Saudi cohort (Alzahrani et al., 2019) these assessments were conducted during or after pilgrimage. Our focus on the predeparture phase differentiates this study and suggests that early clearance may function as a protective element. However, caution is warranted as context differs; the Saudi study used structured diagnostic tools rather than screening instruments.

The SRQ-20's psychometric properties have been validated globally, with demonstrated sensitivity (~0.80–0.93) in various settings for instance, emergency centers in South Africa and primary care in Brazil. The instrument shows robust performance in diverse populations, reinforcing its suitability for pre-departure mental health screening among pilgrims in Malang City. The Indonesian Hajj health policy mandates physical health checks but lacks standardized psychological evaluation. Global guidelines from WHO emphasize mental readiness for mass gatherings, advocating for comprehensive health protocols. Our findings support integrating SRQ-20 or similar tools into stage-three screening, promoting a preventive mental health model and aligning national policy with international best practice.

Incorporating rapid mental health screening into predeparture routines is feasible, low-cost, and culturally acceptable. As our data show, pilgrims exhibit low distress post-screening, suggesting that incorporating SRQ-20 could enhance resilience without inducing anxiety. This approach offers an opportunity for early identification of at-risk individuals and referral pathways, thereby complementing the existing *istitha'ah* framework. This study's primary strength lies in capturing pilgrims' psychological state at a crucial moment immediately following official clearance. The use of a WHO-validated instrument enhances reliability, and the structured setting ensures ecological validity. Additionally, focusing on middle-aged pilgrims, a demographic with high comorbidity and vulnerability, adds value to global public health literature.

Notwithstanding its contributions, this study has limitations. The cross-sectional design precludes causal inference and temporal analysis of psychological trends. The absence of a control group such as pilgrims awaiting screening or post-Hajj pilgrims limits comparative insights. Purposive sampling from a single region may constrain generalizability. Future studies should adopt longitudinal designs and multicenter settings to extend these findings. Based on our findings, we recommend integrating mental health screening (e.g., SRQ-20) into Indonesian Hajj protocols. Policymakers should consider training Hajj health personnel in mental health triage and provide culturally appropriate counseling resources. Future research should evaluate psychological trajectories across Hajj phases, including qualitative assessments to understand the lived experience of pilgrims. Comparative studies between countries may also enrich the global Hajj health evidence base.

RESULTS

1. Interpretation of Main Findings

The absence of SRQ-20 scores above the clinical cut-off (>5) among participants indicates that the third-stage predeparture health screening did not induce psychological harm. Instead, it may have served as a source of emotional reassurance and validation. This finding is consistent with a longitudinal study in Iran, which demonstrated stable General Health Questionnaire (GHQ) scores before and after Hajj, suggesting that the process of being declared fit to perform Hajj can contribute to psychological stability (Hankir et al., 2019). Additionally, research on mass gatherings, including Hajj, has shown that acute emotional

symptoms such as anxiety, tension, and somatic complaints can often be managed effectively through non-pharmacological strategies, such as brief counseling, peer support, and relaxation techniques, rather than pharmacotherapy (Khan et al., 2016). These patterns mirror our findings, supporting the idea that official medical clearance strengthens mental readiness, rather than undermining it.

Mental health outcomes in mass gatherings are complex and context-dependent, influenced by both individual predispositions and social-structural factors. A prospective observational study among Indian pilgrims during the 2016 Hajj reported that approximately 12% experienced acute psychiatric symptoms, but most cases responded well to basic interventions and were able to complete the pilgrimage (Khan et al., 2016). Compared to these data, the psychological profiles observed in our study where no pilgrims met criteria for common mental disorders suggest that the predeparture phase may offer a unique opportunity for early reassurance and risk stratification. It is possible that the confirmation of istitha'ah status, combined with a sense of spiritual purpose and structured preparation, reduces anticipatory anxiety and fosters emotional stability in pilgrims even before travel begins.

Traditionally, predeparture health screenings have been viewed as potentially stressful events, especially when they carry the risk of disqualification. However, our findings challenge this perception by showing that stage-three screening may act as a buffer against psychological distress rather than a trigger. This aligns with broader literature in disaster and mass-gathering psychology, which suggests that structured communication, procedural transparency, and early affirmation of health status can serve as protective factors against mental deterioration (Zafeirakis & Efstathiou, 2020). In the context of Hajj, where expectations are deeply spiritual and emotionally charged, the act of being "cleared" may symbolically affirm divine permission to fulfill religious obligations thus reframing screening as both a medical and psychological rite of passage.

Although not intended for clinical diagnosis, the Self-Reporting Questionnaire-20 (SRQ-20) has proven to be a reliable and sensitive instrument for early detection of common mental disorders in primary care and community settings. Its validity has been demonstrated across diverse cultural and health system contexts, including Indonesia, Brazil, and Eritrea (Prasetio et al., 2022; Mari & Williams, 2018; Hanlon et al., 2008). Given its brevity, simplicity, and cultural neutrality, SRQ-20 is well suited for operational integration into the existing istitha'ah screening framework. Our study supports its feasibility in Hajj health protocols, as it allows rapid triage of pilgrims who may need additional support, while providing data-driven reassurance for the vast majority thereby enhancing both mental preparedness and public health responsiveness.

2. Contextualizing Within Hajj Mental Health Literature

Prior studies have reported psychiatric disorder prevalence among pilgrims 7.2% using MINI during Hajj (Alzahrani et al., 2019). However, these assessments occurred during or after pilgrimage, a period marked by heightened stress. Our study's innovation lies in focusing on the predeparture phase. The contrast between our results and post-Hajj screening underscores the protective psychological effect of medical clearance and the importance of timing in mental health assessment.

3. Strength of Psychological Resilience and Supportive Environments

The Hajj provides spiritually uplifting experiences which enhance psychological resilience. Research indicates the benefit of contextual psychosocial support such as culturally sensitive counseling and peer support for managing psychological distress during Hajj. While our study did not include structured support during screening, the positive outcomes suggest that the formal clearance process itself may act as a psychological buffer, reinforcing the pilgrims' sense of readiness.

4. Validity of SRQ-20 as a Screening Tool

The SRQ-20 has been well-validated across diverse LMIC contexts. In Indonesia, Prasetio et al. (2022) confirmed its strong psychometric properties (Cronbach's $\alpha > 0.80$). Globally, similar validations such as for Eritrea's Tigrigna version demonstrate its reliability and cost-effectiveness in primary care and field settings. These validations support its suitability for deployment at predeparture screening points like Sukolilo Dormitory in Surabaya.

5. Policy Implication: Mental Health Integration in Istitha'ah Protocols

Indonesian Hajj health regulations require extensive physical screenings but currently lack systematic mental health evaluation. A recent local policy update even suggests incorporating SRQ-20 into predeparture checks. Aligning with WHO's holistic health recommendations for mass gatherings, integrating SRQ-20 could enhance early psychological intervention capabilities and align national practice with global standards.

6. Operational Feasibility and Cultural Acceptability

Implementation of SRQ-20 is rapid (~5 minutes), low-cost, and easily administered by trained personnel a model seen in pregnant women research in Vietnam. Our results reassure that including this screening would not impose additional anxiety; instead, it may affirm pilgrims' readiness. Integration of mental health checks could be operationalized within existing health service workflows at regional dormitories before final payment deadlines.

7. Study Contributions and Future Research Directions

This study fills a notable gap by assessing the immediate psychological aftermath of health clearance, rather than post-pilgrimage outcomes. It informs policy revisions and supports an interdisciplinary framework encompassing

public health, mental health, and religious pilgrimage medicine. Future research should adopt longitudinal designs tracking mental health across pre-, during-, and post-Hajj phases, and explore qualitative dimensions of pilgrims' emotional experiences.

8. Limitations and Caution for Interpretation

Key limitations include the cross-sectional design, lack of control group, and single-region sampling, which constrain causal inference and generalizability. Response biases such as social desirability in communal or religious contexts may have led to underreporting of distress. Future studies should incorporate mixed methods to triangulate findings and engage broader, multicenter samples.

CONCLUSIONS AND RECOMMENDATIONS

This study provides empirical evidence that third-stage predeparture medical screening does not adversely affect the psychological well-being of middle-aged Hajj pilgrims. The complete absence of SRQ-20 scores above the clinical threshold among respondents suggests that the screening process, rather than inducing stress, may offer psychological reassurance and affirm pilgrims' readiness. These findings challenge the assumption that health screening is inherently anxiety-provoking and instead position it as a protective and potentially therapeutic intervention in the context of religious pilgrimage.

Given the feasibility and sensitivity of the SRQ-20, its integration into national *istitha'ah* protocols should be strongly considered. Incorporating mental health assessments into predeparture screenings would align Indonesia's Hajj health system with WHO's holistic approach to mass gathering preparedness, and support early identification and referral for at-risk pilgrims. Future studies should adopt longitudinal and mixed-method designs to track mental health trajectories throughout the Hajj journey and explore deeper sociocultural determinants of psychological resilience in faith-based travel.

Acknowledgements

The authors would like to thank the Regional Office of the Ministry of Religious Affairs of Malang City and the Hajj Health Center at the Sukolilo Hajj Dormitory, Surabaya, for their support and coordination during data collection. We also extend our sincere appreciation to all Hajj pilgrims who participated voluntarily in this study and to the field team for their valuable assistance.

Conflict of Interest Statement

The authors declare no conflict of interest related to the design, execution, or publication of this study.

Funding Statement

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. It was self-funded by the authors as part of institutional academic responsibilities.

Ethical Approval

This study was approved by the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences, Maulana Malik Ibrahim State Islamic University, Malang. All participants provided written informed consent prior to participation, and the study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

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