

Reading Holy Quran Associated With Better Cognitive Function in Older Adults: A Systematic Review

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Abstract

Background: As the global population ages, understanding factors that contribute to better cognitive function in older adults becomes crucial. This systematic review delves into the potential relationship between reading the Holy Quran and cognitive function in older adults. **Methods:** A systematic search was conducted across five electronic databases (PubMed, ScienceDirect, Google Scholar, Tripdatabase, Cochrane) to identify relevant studies that were published between 2004 to December 2023. Inclusion criteria were centered on studies exploring the correlation between reading the Quran and cognitive function in older adults. **Results:** Five studies meeting the inclusion criteria were included in this systematic review. Notably, four of these studies reported a significant correlation between the intensity or duration of Quranic reading and improved cognitive function in older adults. **Discussion:** The findings imply a potential positive association between engaging with the Holy Quran and cognitive function among the elderly. This relationship holds promise for potential applications in cognitive health interventions for older adults especially for Muslim patients. **Conclusion:** This review provides evidence supporting the relationship between reading the Holy Quran and normal cognitive function in older adults. The consistent findings underscore the importance of further research to elucidate underlying mechanisms and consider potential implications for cognitive health interventions.

Keywords

Holy Quran, cognitive function, older adults

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Introduction

The global demographic shift toward an aging population is a significant trend, with the proportion of older adults increasing due to declining fertility rates and increased life expectancy (Are et al., 2016). This shift has led to a growing concern for cognitive health in older adults, as evidenced by the increasing prevalence of conditions such as dementia (Alsaed et al., 2016). Understanding the factors influencing cognitive health in older adults is crucial due to the potential burden on healthcare systems and family caregivers (Saenz et al., 2018). Factors influencing cognitive health in older adults are multifaceted and include psychosocial, pharmaceutical, and environmental aspects. For instance, depressive symptoms and subjective stress have been identified as major risk factors influencing subjective cognitive impairment in middle-aged and older adults (Roh et al., 2021). Additionally, the utilization of medicines and the role of caregivers have been recognized as challenges in optimizing medicine use for people living with dementia (Alsaed et al., 2016).

Furthermore, traffic-related air pollution has been linked to cognitive function in older adults, indicating the importance of environmental factors in cognitive health (Tonne et al., 2014).

The implications of cognitive health in older adults extend beyond healthcare, affecting various aspects of life satisfaction and overall well-being. Sociodemographic factors, chronic health conditions, level of cognition, and social activities have been found to contribute to life satisfaction and mental health among older adults (Lee & Lee, 2011). Moreover, the relationship between health literacy, cognitive function, and health outcomes underscores the interconnectedness of cognitive abilities with self-care and health literacy (Wolf et al., 2012). The

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challenges and concerns with cognitive decline in older adults are multifaceted and have significant implications for individuals and society. Cognitive impairment significantly increases the risk of functional dependence and poor quality of life in older adults (J. Li et al., 2017). Furthermore, cognitive decline is associated with adverse economic and socio-psychological outcomes, making it a major public health concern (K. Han et al., 2021). Factors such as older age, low education level, no marriage, and poor physical and baseline cognitive function have been linked to an accelerated cognitive decline in older adults (K. Han et al., 2022). Additionally, subjective cognitive impairment in middle-aged and older adults is influenced by factors such as depressive symptoms and subjective stress, highlighting the complex interplay of mental health and cognitive function (Roh et al., 2021). Moreover, anxiety and depression have been identified as important considerations in understanding the longitudinal cognitive profiles of older adults with subjective cognitive decline (Ahn et al., 2021).

Considering these challenges, interventions, and practices contributing to maintaining or improving cognitive function in older adults are crucial. Physical exercise, particularly virtual reality-based physical exercise, has been identified as a successful approach to improving cognitive function in older adults with and without cognitive decline (Sakaki et al., 2021). Additionally, promoting social participation has been recognized as an important strategy for preventing a decline in the cognitive function of older adults, especially those living in rural areas (Yang et al., 2021). Furthermore, identifying protective factors and risk factors through longitudinal analysis can inform the development of interventions aimed at preventing the decline of cognitive function in older adults (G. Li & Li, 2022). Moreover, the interaction of diet and history of stroke with the risk of cognitive decline underscores the importance of lifestyle and medical history in interventions targeting cognitive health in older adults (Xu et al., 2022).

The literature on factors affecting cognitive health in older adults encompasses various interventions and risk factors. Studies have shown that combined physical and cognitive interventions, such as virtual reality-based physical exercise and cognitive training, have demonstrated benefits in enhancing cognitive function in older adults, including those with mild cognitive decline (Guo et al., 2020; C. Han et al., 2022; Sakaki et al., 2021; Zając-Lamparska et al., 2019). Additionally, leisure activities, health literacy, and technology-based interventions have been associated with preserving cognitive function in older adults (Geboers et al., 2018; Leung et al., 2022; Sanjuán et al., 2020; Zhu et al., 2022). Furthermore, factors such as indoor air pollution, subjective cognitive impairment, and genetic variations have been considered as risk factors for declining cognitive function in older adults (Roh et al., 2021; Saenz et al., 2018; Thow et al., 2017).

The relationship between religious practices such as reading the Holy Quran and cognitive function in older adults has not been extensively explored. While some studies have examined the correlation between the frequency and duration of reading the Quran with cognitive function in the elderly Indrijaningrum and Hamdan (2020), there is a gap in understanding the specific cognitive outcomes associated with Quranic reading (Indrijaningrum & Hamdan, 2020). Additionally, the motivation for reading the Holy Quran and its potential impact on cognitive function remains an area requiring further investigation (Raza Shah et al., 2022). Furthermore, the relevance between faith in God and health dimensions in the Holy Quran has not been thoroughly explored in the context of cognitive function in older adults (Ali-Asghar & Masoumeh, 2022). Moreover, the impact of religious activities on the quality of life and cognitive function among the elderly, including Quranic reading, requires more in-depth exploration (Amir et al., 2022).

The potential benefits of being part of a religious group can foster socialization and help combat loneliness, which can also cause cognitive decline. Listening to Holy Quran recitation has been shown to stabilize vital signs and increase arterial oxygen pressure in unconscious patients in ICUs, indicating potential physiological benefits (Ghiasi & Keramat, 2018). Furthermore, religious attendance has been associated with slower rates of cognitive decline among older adults, suggesting a potential protective effect on cognitive function (Hill et al., 2006). Additionally, religious involvement, including activities such as singing, prayer, meditation, and scriptural study, may stimulate cognitive faculties and contribute to better cognitive aging (Hill, 2008; Hill et al., 2020). Moreover, Quran listening has been recommended for improving mental health and achieving greater calm, indicating potential psychological benefits (Mahjoob et al., 2014). Quranic reading has been associated with favorable effects on depression, anxiety, physiologic parameters, quality of life, quality of sleep, and intelligence quotient, suggesting a broad range of potential health benefits (Che Wan Mohd Rozali et al., 2022). Additionally, religious involvement has been linked to better cognitive functioning and may offset racial and ethnic inequalities in episodic memory, indicating potential cognitive benefits (Kraal et al., 2019). Quranic reading has been hypothesized to be associated with better global, executive, episodic memory, and working memory function in the aging population, suggesting potential cognitive benefits (Tang et al., 2018). These findings collectively suggest that engaging in activities related to religious practices, particularly reading the Holy Quran, may have diverse potential benefits for physical, mental, and cognitive health.

The potential benefits associated with engaging in activities related to spiritual and religious practices, particularly reading the Holy Quran, have been the subject

of various studies. Research has indicated that spiritual well-being, including aspects related to religious engagement, may be positively associated with psychological well-being and happiness (Gomez & Fisher, 2003). Additionally, listening to the Holy Quran recitation and religious music has been suggested to have a positive effect on mental health and anxiety reduction (Ghiassi & Keramat, 2018). Life-course religious attendance has been linked to better cognitive functioning in later life, indicating a potentially positive impact on cognitive well-being (Hill et al., 2020). Additionally, religious attendance and religiosity have been associated with improved cognitive functioning and a potential offset of cognitive decline among older adults (Muhammad, 2022). Moreover, Quranic reading has been suggested to have a positive impact on mental health, including delaying cognitive aging and enhancing memory (Nadimah, 2018). These findings collectively suggest that spiritual and religious engagement, including activities related to the Holy Quran, may have diverse potential benefits for mental, cognitive, and psychological well-being.

Finally, these gaps highlight the need for more comprehensive research to elucidate the relationship between religious practices, particularly Quranic reading, and cognitive function in older adults. By scrutinizing the relationship between reading the Holy Quran and cognitive function in older adults, this study aims to contribute to a nuanced understanding of practices that may positively influence cognitive health. The study's contextualization within academic discourse serves to advance knowledge and facilitate evidence-informed approaches to address the cognitive challenges associated with aging.

Methods

The systematic review adhered to the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines 2020, ensuring a rigorous and transparent reporting process (Page et al., 2021). The review focused on investigating the relationship between reading the Holy Quran and cognitive function in older adults.

The data extraction process involved the independent retrieval of information by two reviewers concerning the first author, title, methodological details, and results such as study characteristics, participant demographics, Quranic reading variables, and cognitive function measures. Two independent reviewers performed the data extraction, with any disparities resolved through consultation with a third reviewer. In cases where additional data was deemed necessary, contact was initiated with the primary author of the study. The systematic review employed a thorough search strategy across five electronic databases, namely PubMed, ScienceDirect, Google Scholar, Tripdatabase, and Cochrane. The search

utilized a combination of MeSH terms and relevant keywords such as ("Cognitive" OR "Cognitive Function") AND ("Older Adult" OR "Elderly" OR "Aging") AND ("Quran" OR "Holy Quran" OR "Al-Quran"). The findings from the selected studies were qualitatively synthesized to identify patterns and trends in the relationship between reading the Holy Quran and cognitive function in older adults.

In establishing inclusion and exclusion criteria, the review considered studies published between 2004 to December 2023 that examined the relationship between Quranic reading and cognitive function in older adults. Inclusion criteria encompassed observational studies with relevant outcome measures or quantitative data on cognitive function. Exclusion criteria were applied to studies outside the designated timeframe, non-English and Indonesian language studies, and articles that did not directly measure or report relevant outcomes were systematically excluded from the analysis.

To assess the risk of bias in the included studies, the AXIS critical appraisal tool for cross-sectional studies was employed. This tool comprehensively evaluates methodological aspects such as study design, participant selection, measurement of variables, and statistical analysis. The critical appraisal process was conducted independently by two reviewers, with any discrepancies resolved through discussion or consultation with a third reviewer. Mendeley references manager was used to organize and manage references throughout the review process.

Given that the systematic review involved the analysis of published data, ethical approval was not deemed necessary. However, the study adhered to ethical standards outlined in the PRISMA statement and other relevant protocols to ensure the responsible and ethical conduct of the research.

Results

Study Selection and Characteristics

Following the initial search, a substantial number of articles were identified. For example, in the PubMed database, a total of 216 articles were retrieved in this step. To focus the review on observational studies, a filter specific to the study last 2004 was applied. This filtration process resulted in 208 articles that met the criteria. After that, A filter for observational study types was employed, as denoted by the inclusion of the term "Observational Study"[Publication Type]. This screening procedure yielded a total of three articles that fulfilled the requirement of being categorized as observational studies. The initial broad search was instrumental in capturing a wide range of relevant literature, while the subsequent application of the observational study filter ensured that the selected articles were deemed suitable for the systematic review's objectives. These three observational studies were then carefully

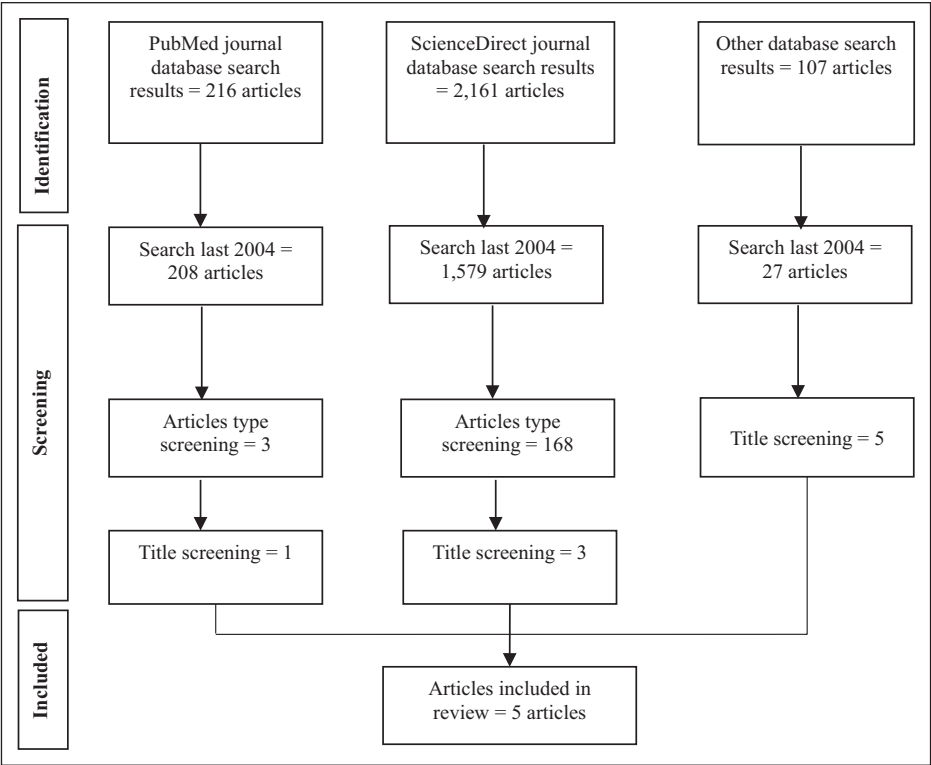


Figure 1. PRISMA flowchart.

assessed and evaluated against the inclusion and exclusion criteria to determine the final set of studies included in the systematic review. The search flowchart is shown in Figure 1.

A total of eight articles were found in electronic databases which have relevant titles to our eligibility criteria. After removing duplicate articles and reading full articles, five articles were finally included in this review. We excluded articles that have relevant titles but did not provide relationship measurement from the variable needed (Che Wan Mohd Rozali et al., 2022; Munawaroh et al., 2023; Saquib et al., 2017; Tobing et al., 2022). The study selection process is shown in Figure 1. The included studies were conducted only in Indonesia (Indrijaningrum & Hamdan, 2020; Irawati & Madani, 2019; Lestari, 2012; Tri Rahayu et al., 2021) and Malaysia (Amir et al., 2022). A total of 725 subjects ≥ 60 years were recorded from the included studies. MMSE, MoCA, and MoCA-INA questionnaires are used to measure cognitive function in older adults in this review. However, one study does not give information regarding the tool that is used to measure cognitive function. Baseline scores on the bedside questionnaires were reported variably, with only one study providing numeric data while others presented categorical data. Therefore, a comprehensive analysis of baseline cognitive function scores across all studies was not feasible. However, it was observed that approximately 35.8% of participants exhibited abnormal cognitive function at baseline. For assessment frequency and duration of Quranic reading among participants, it is important to

note that all included studies employed direct interviews with participants. During these interviews, participants were asked questions related to their Quranic reading habits, including the frequency and duration of their reading sessions.

Risk of Bias Assessment

The Appraisal tool for Cross-Sectional Studies (AXIS) tool was used to assess the risk of bias in the included studies. There is one study that doesn't describe the statistical method sufficiently, and the other three studies don't provide enough information regarding the sample selection process. Regarding study limitations, three studies did not include limitations. Overall, one study has a high risk of bias, two studies have a moderate risk of bias, and the others have a low risk of bias based on the author's assessment. A summary of the risk of bias assessment is shown in Table 1.

Overall Outcomes

Table 2 provides a summary of the study's findings. In terms of the relationship between reading the Quran and cognitive function in older adults, one study reported no significant association between these variables (Indrijaningrum & Hamdan, 2020). However, four studies indicated a significant relationship between reading the Quran and cognitive function in older adults (Amir et al., 2022; Irawati & Madani, 2019; Lestari, 2012; Tri Rahayu et al., 2021), with one study having a high risk

Table 1. Risk of Bias Assessment using Appraisal Tool for Cross-Sectional Studies (AXIS).

No.	Question	Study Index Number				
		1	2	3	4	5
<i>Introduction</i>						
1	Were the aims/objectives of the study clear?	Yes	Yes	Yes	Yes	Yes
<i>Methods</i>						
2	Was the study design appropriate for the stated aim(s)?	Yes	Yes	Yes	Yes	Yes
3	Was the sample size justified?	Unclear	Unclear	Unclear	Unclear	Yes
4	Was the target/reference population clearly defined? (Is it clear who the research was about?)	Yes	Yes	Yes	Yes	Yes
5	Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?	Yes	Yes	Yes	Yes	Yes
6	Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?	Yes	Yes	Yes	Yes	Yes
7	Were measures undertaken to address and categorize non-responders?	Unclear	Unclear	Unclear	Unclear	Unclear
8	Were the risk factors and outcome variables measured appropriate to the aims of the study?	Unclear	Yes	Yes	Yes	Yes
9	Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialed, piloted, or published previously?	Unclear	Yes	Yes	Yes	Yes
10	Is it clear what was used to determine statistical significance and/or precision estimates? (e.g., p-values, confidence intervals)	Yes	Yes	Yes	Yes	Yes
11	Were the methods (including statistical methods) sufficiently described to enable them to be repeated?	No	Yes	Yes	Yes	Yes
<i>Results</i>						
12	Were the basic data adequately described?	No	No	Yes	Yes	Yes
13	Does the response rate raise concerns about non-response bias?	No	No	No	No	No
14	If appropriate, was information about non-responders described?	No	No	No	No	No
15	Were the results internally consistent?	Yes	Yes	Yes	Yes	Yes
16	Were the results presented for all the analyses described in the methods?	Yes	Yes	Yes	Yes	Yes
<i>Discussion</i>						
17	Were the authors' discussions and conclusions justified by the results?	Yes	Yes	Yes	Yes	Yes
18	Were the limitations of the study discussed?	No	No	Yes	No	Yes
<i>Others</i>						
19	Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?	Unclear	No	Unclear	Unclear	Unclear
20	Was ethical approval or consent of participants attained?	Unclear	Yes	Yes	Unclear	Yes
Overall results		High	Moderate	Low	Moderate	Low

Table 2. Summary of the Included Studies.

Study Index	Study details	Aim	Sample detail	Cognitive function measure	Results
1	Rahayu, Diah and Subekti, Kusdiah Indonesia, 2021 Cross-sectional	Determine the relationship between the intensity of the reading Qur'an and cognitive function in the elderly	N = 51 participants 60 years	No information	There is a relationship between the intensity of reading the Quran and the cognitive function of the elderly. The research findings were derived from 51 respondents, revealing that those with a good intensity of Quranic reading exhibited normal cognitive function in 23 individuals (45.1%), while respondents with less intense Quranic reading displayed a decline in cognitive function in 18 individuals (35.3%). The statistical analysis indicated a significant association with a <i>p</i> -value of .000 and a correlation coefficient (<i>r</i>) of 0.519.
2	Amir, Syazwan, et al. Malaysia, 2021 Cross-sectional	Compare elderly people utilizing different types of religious activities in their daily routine and the effects on their quality of life and cognitive function	N = 432 participants 60 years	MoCA questionnaire	For obligatory prayer activity, there was a significant difference in the mean score of SF-36 among different obligatory prayer practices in all of the SF-36 domains (<i>p</i> < .05 and <i>p</i> < .001). This study found that respondents who practiced five times of obligatory prayers accompanied by sunnah prayer had higher SF-36 mean scores in all of the SF-36 domains (ranging from 70.3 to 94.4) as compared to those who performed five times of obligatory prayers only (ranging from 40.5 to 74.7). Similarly, respondents who practiced midnight prayer had higher SF-36 mean scores in all of the SF-36 domains (ranging from 69.9 to 94.7) as compared to those who did not (ranging from 52.7 to 85.7). However, the mean score difference between the two different groups for midnight prayer activity was significant only for the domain of PF, RP, VT, SF, RE, and MH (<i>p</i> < .05 and <i>p</i> < .001).
3	Indrijaningrum, Pipit and Hamdan, Muhammad Indonesia, 2020 Case control	Know the existence of a relation between frequency and duration of reading Al-Quran with cognitive function in elderly	N = 68 participants, 885.3% ≥ 60 years	MoCA-Ina questionnaire	Out of the 34 subjects whose has cognitive abnormalities, there were 27 (50.9%) people who read the Quran with a frequency < 12x/week, and 7 (46.7%) people who read with a frequency ≥ 12x/week. There was no correlation between the frequency of reading the Quran with cognitive function (<i>p</i> = .770). Then, 34 subjects whose cognitive abnormalities were 14 (40%) people who read the Quran, with a duration of 1 time reading < 30 min, and 20 (60.6%) people who read the Quran, with a duration of 1-time reading ≥ 30 min. There was no correlation between the duration of reading the Quran with cognitive function (<i>p</i> = .0890). Individuals who read the Quran for more than 15 min, totaling 45 participants (97.8%), did not experience cognitive impairment (normal). Furthermore, there is a strong between the duration of reading the Quran and MMSE score (<i>p</i> = .0001, <i>r</i> = .725).
4	Irawati, Kellyana and Madani, Ferika Indonesia, 2019 Cross-sectional	Determine the relationship of duration reading Al-Qur'an with cognitive function in the elderly in elderly posyandu.	N = 96 participants ≥ 60 years	MMSE	
5	Lestari, Nova Indonesia, 2013 Cross-sectional	Find out the relationship between reading the Quran with cognitive function in older adults.	N = 78 participants 60 years	MMSE	There was a relationship between the intensity of reading the Quran with cognitive function (<i>p</i> = .0001, <i>r</i> = .642).

Note. MMSE = Mini-Mental State Examination; MoCA = Montreal Cognitive Assessment; MoCA INA = Montreal Cognitive Assessment Indonesian version; SF-36 = Short Form 36 Health Survey; PF = Physical Functioning; RP = Role limitations due to physical problem; VT = vitality; SF = social functioning; RE = role limitations due to emotional problems; MH = Mental Health.

of bias, two studies having moderate bias, and one study having a low risk of bias. Specifically, two studies reported a strong correlation (Irawati & Madani, 2019; Lestari, 2012) and one study reported a moderate correlation (Tri Rahayu et al., 2021). Overall, the quality of evidence for this relationship was graded as moderate, indicating although there is enough evidence to support the relationship between reading the Quran with better cognitive function in older adults, the supporting studies have a moderate to high risk of bias.

Discussion

The association between reading the Quran and cognitive function in older adults, as revealed in our systematic review, underscores the significance of exploring the underlying mechanisms. Despite the moderate to high risk of bias in the supporting studies, the observed correlation aligns with a body of literature emphasizing the multifaceted impact of Quranic engagement on mental well-being. This observed association aligns with literature emphasizing the multifaceted impact of Quranic engagement on mental well-being. Noteworthy studies by Sze Chong et al. (2023) and Van Buren and Van Gordon (2020) posit religious practices such as prayer recital and Quran reading as efficacious coping mechanisms during stressful situations, implying a potential nexus with enhanced mental health (Sze Chong et al., 2023; Van Buren & Van Gordon, 2020). Moreover, the investigations conducted by Alorani and Alradaydeh (2017) and Che Wan Mohd Rozali et al. (2022) underscore the positive influence of Quranic engagement on spiritual well-being and various mental health parameters, including depression, anxiety, and overall quality of life (Alorani & Alradaydeh, 2017; Che Wan Mohd Rozali et al., 2022). The profound relaxation induced by Quranic recitation further aligns with the prospect of stress reduction and emotional well-being (Gavgani et al., 2022; Nayef & Wahab, 2018). Additionally, the study conducted by Tobing et al. (2022) highlights a positive relationship between the intensity of Quran reading and cognitive function in older individuals (Tobing et al., 2022). The unique harmonic features of Quranic verses contribute to positive effects on brain cell responsiveness, resonating with the divine nature of Allah SWT (Tobing et al., 2022). Despite the acknowledged risk of bias in the supporting studies, this comprehensive discussion integrates diverse literature, reinforcing the potential cognitive benefits of Quranic engagement in older adults within the broader context of mental well-being.

The significant relationship between reading the Quran and cognitive function observed in this systematic review holds practical implications, particularly for Muslim older adults. Encouraging a routine practice of reading the Quran among adults may emerge as a potential strategy to promote cognitive health as they age, especially for individuals who are inclined to participate in such religious activities. The findings suggest that incorporating Quranic reading into daily routines could

be a culturally relevant and holistic approach to support cognitive function in the aging process. This has broader implications for health promotion strategies, emphasizing the potential benefits of religious practices in maintaining cognitive well-being. As such, healthcare providers, policymakers, and community leaders might consider advocating and integrating spiritual or religious activities into health promotion programs for adults, recognizing the long-term impact on cognitive function in older age. While the association between Quranic reading and cognitive function was explored, it is important to clarify the scope of cognitive function examined in the context of this review. The term cognitive function primarily refers to cognitive domains related to memory, attention, executive function, and processing speed assessed through standardized cognitive assessment tools. However, it is essential to underscore that while these associations are observed, the nuanced and complex nature of the relationship necessitates continued exploration through well-designed studies to establish causation and inform targeted interventions.

In outlining avenues for future studies, it is essential to systematically address acknowledged biases within the current literature, aiming to elevate the overall methodological rigor in examining the relationship between reading the Quran and cognitive function in older adults. To consolidate the scholarly foundation in this field, forthcoming studies should prioritize methodological frameworks characterized by a judicious minimization of biases. The integration of robust study designs, such as randomized controlled trials, stands out as a viable approach to rigorously control confounding variables and contribute to a more nuanced exploration of causation. Ensuring inclusivity through diverse and representative participant cohorts across varied cultural and geographical contexts is paramount for substantiating the external validity of findings.

While our systematic review aimed to comprehensively explore the relationship between reading the Quran and cognitive function in older adults, several limitations merit consideration. Firstly, the geographical scope of the included studies was confined to Indonesia and Malaysia, restricting the generalizability of our findings to more diverse populations. As this review only included cross-sectional studies, the focus was on observing relationships rather than establishing causal associations. Therefore, it is acknowledged that this review cannot determine whether the intervention can maintain or improve cognitive function. This limitation underscores the need for further research, particularly longitudinal studies or randomized controlled trials, to investigate the potential effects of Quranic reading interventions on cognitive function over time. Additionally, the language bias inherent in our search strategy, limited to English and Indonesian language publications, may have resulted in the exclusion of relevant studies published in languages such as Arabic. Considering the cultural and linguistic significance of the Quran in Arabic-speaking populations, there is a possibility that additional studies conducted in

Arab countries may contribute valuable insights to the understanding of this relationship. Furthermore, the bias of the included studies may influence the robustness of our conclusions, emphasizing the need for additional well-designed studies to confirm and extend our understanding of the relationship between Quranic reading and cognitive function in older adults.

Conclusion

This review suggests a potential relationship between reading the Quran and better cognitive function in older adults, emphasizing the importance of further well-designed studies to validate and refine our understanding of this relationship.

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Author Contributions

1. Conceptualization: Nur Riviati and Bima Indra
2. Design and methodology: Nur Riviati and Bima Indra
3. Data collection: Nur Riviati and Bima Indra
4. Data analysis and interpretation: Nur Riviati and Bima Indra
5. Writing and drafting: Bima Indra
6. Critical revisions: Nur Riviati
7. Supervision: Nur Riviati
8. Final approval: all authors have reviewed and approved the final version of the manuscript before submission.

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Ethical Approval

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