

Review Paper

The Scientific and Islamic Perspectives to Prevent the Incidence of Dementia Among Elderly



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ABSTRACT

Background: Dementia is the main cause of disability and dependency among the elderly worldwide. It involves a decline in memory, thinking, behavior, and abilities, which significantly impacts daily activities. Allah SWT shows His power and human helplessness by creating individuals from a weak state to a strong one, only to return to weakness as they experience senility. Preventing dementia in the advanced stages is essential. To effectively implement prevention strategies, it is necessary to understand the risk factors that contribute to the disease. This research aimed to analyze the integration of scientific and Islamic perspectives to prevent the incidence of dementia in the elderly population.

Methods: We used a literature review with a comprehensive strategy. The databases, including MEDLINE Complete, MEDLINE with full text, Academic Search Complete, Professional Development Collection, OmniFile Full Text Select (H.W. Wilson), Newspaper Source, and APA PsycArticles were searched using the keywords, namely “dementia,” “faith,” “prayer,” “reading the Qur’an,” “dhikr,” and “fasting” in the title. A total of 274 articles were obtained, but only 17 articles met the qualification criteria. After a detailed review, 10 articles were included in the analysis.

Results: The efforts that can prevent the incidence of dementia among the elderly population, from both scientific and Islamic perspectives, were classified as comorbid therapy (hypertension, diabetes mellitus, and stroke), neurodegenerative delay (stress reduction (faith, religious activities, such as prayer, reading the Koran, dhikr, and fasting), avoidance of alcohol and cigarettes, prevention of traumatic brain injury, stimulation of neuroplasticity (education and physical activity), and regulation of eating and sleeping patterns (reducing obesity and practicing fasting).

Conclusion: The scientific and Islamic perspectives are related to each other. The elderly population should pay attention not only to physical health but also to spiritual health, as both aspects have a close relationship and influence one another.

Keywords: Risk factors, Preventive, Dementia, Elderly, Islamic

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Introduction

Dementia is a common health problem in society. It is characterized by multiple and progressive cognitive impairments, including memory impairment that interferes with independence, and social or occupational functioning that interferes with daily activities. This leads to disability and dependency in the elderly and is, most importantly, a source of distress for affected individuals, their families, and caregivers [1]. With the projected growth trend of the aging population, the number of people with dementia is expected to increase. Worldwide, at least 57.4 million people live with dementia and 1.6 million people die each year from the condition. Although the proportion of the global population aged ≥ 65 years will double between 2019 and 2050, the prevalence of dementia and Alzheimer's disease (AD), which account for 60–70% of dementia, is expected to reach 152.8 million and 106.4 million people, respectively [2].

In the Qur'an, older age is called the lowest stage of life, because it is accompanied by forgetting past knowledge and experiences. "And among you, is he who is returned to the most elderly so that he does not know anything, after (once having) knowledge," (Qs. Al-Hajj/22: 5). Science refers to this condition as "dementia," which results from the progressive degeneration of the nerve cell network related to cognitive function [3]. Moreover, the elderly population in the future may face various obstacles in their basic needs and health problems due to dementia. This is the reason why dementia should be a very important concern given by health professionals and the government of countries. These health problems and basic needs include environmental and sociocultural factors and nutritional intake. More attention is needed to address the conditions faced by the elderly population due to dementia; both the general public and health professionals must have a solid understanding of modifiable factors to prevent these conditions. This is the first step toward changing behavior. Unfortunately, public knowledge about risk factors for dementia remains poor and lags behind their knowledge about the risk factors for other common diseases, such as cardiovascular disease (CVD). Understanding the risk factors for its early prevention and treatment [4].

Prevention is a key strategy in combating dementia. A 2020 Lancet commission estimated that 40% of dementia cases could be prevented by addressing medical and lifestyle risk mediators. With increasing evidence of the efficacy of risk reduction, there has been a global policy

shift, led by the [World Health Organization \(WHO\)](#) and others, toward the prevention of dementia through risk factor modification [5].

Recently, findings by Hosseini et al. indicated that religious and spiritual involvement is important in protecting middle-aged and elderly groups against cognitive decline. Most of the literature supports a positive relationship between religious and spiritual involvement and cognitive functioning. This can be explained by various aspects of religious activities that involve continuous stimulation of the brain, such as reciting the Qur'an, focusing during prayers, and engaging in motor functions through a series of repetitive activities [6].

Based on the information above, this research reviewed what are the risk factors for dementia as a basis for integrating dementia prevention from scientific and Islamic perspectives. Information about factors that can contribute to preventing dementia can provide valuable insights for health professionals in combining scientific and Islamic approaches simultaneously.

Methods

This research employed a comprehensive literature review strategy, which included searching for articles in research journal databases, conducting Internet searches, and reviewing relevant articles. Databases, including [MEDLINE Complete](#), [MEDLINE With Full Text](#), [Academic Search Complete](#), [Professional Development Collection](#), [OmniFile Full Text Select](#) (H.W. Wilson), [Newspaper Source](#), and [APA PsycArticles](#) were searched using the keywords, namely "dementia," "faith," "prayer," "reading the Qur'an," "dhikr," and "fasting" in the title. Additionally, the Qur'an and books related to dementia were included as supplementary literature.

The following inclusion criteria were applied: Publication dates from 2019 to 2023 (the last 5 years), original research types, accessible full texts, and studies related to factors in preventing dementia among the elderly population through Islamic and scientific approaches. The authors coded, extracted, and combined the data separately, and then, established a final consensus following discussion. All authors who reviewed the papers were experts in the study field. A total of 274 articles were obtained, but only 17 qualified. After a detailed review, 10 articles were included in the analysis. The articles used as samples were then identified and summarized based on the themes that emerged, as presented in [Figure 1](#).

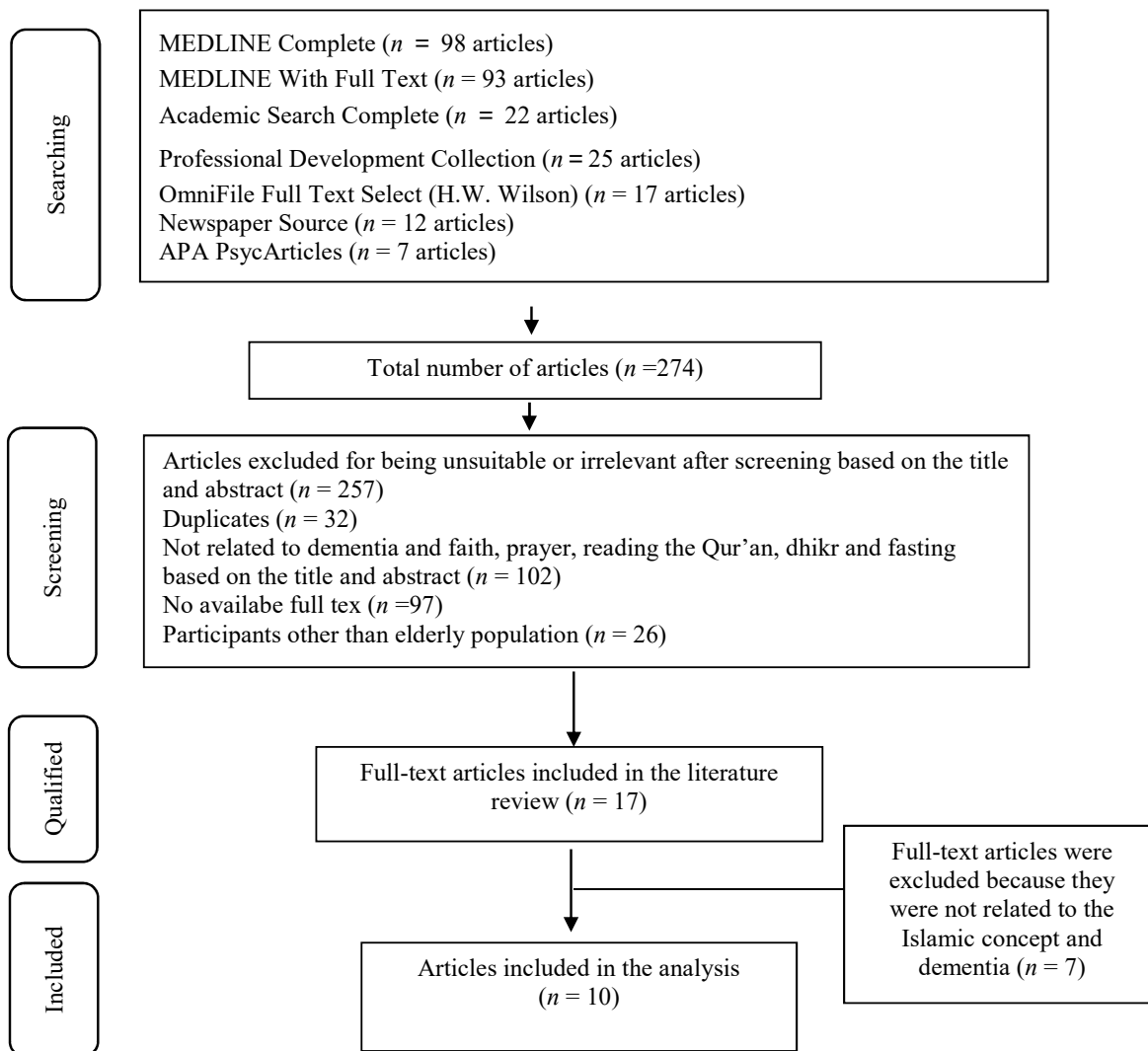


Figure 1. Flowchart of screening articles on scientific and Islamic perspectives to prevent the incidence of dementia 

Results

Based on the results of the literature study (Table 1), the risk factors for dementia from a scientific perspective included non-modifiable risk factors (age, gender, and genetics) and modifiable risk factors (cardiovascular disease, hypertension, diabetics, smoking habit, alcohol consumption, head injury, stress, education, physical activity, obesity, and sleep disorder). Moreover, the risk factors for dementia from an Islamic perspective were faith/belief, practicing religious activities, reading the Al-Qur'an, performing prayer, dhikr, and fasting. Moreover, the integration of risk factors and preventive efforts for dementia from both scientific and Islamic perspectives is presented in Table 2.

From Table 2, it can be seen that the efforts to prevent dementia from both scientific and Islamic perspectives focus on delaying neurodegeneration through the treatment of comorbid diseases (hypertension and diabetes mellitus), promoting physical activity, avoiding head injuries, refraining from alcohol and tobacco consumption, and reducing stress through strong faith, prayer, reading the Qur'an, dhikr, and fasting.

Discussion

Research on scientific and Islamic perspectives as an effort to prevent the incidence of dementia among the elderly population has been frequent; however, the two approaches tend to be treated separately. This research demonstrates that the two approaches are interconnected. In the following paragraph, we will separate these

Table 1. Risk factors for dementia from a scientific and Islamic perspective in the literature

Title, Author(s), Year, Reference	Place of study	Sample	Age (y)	Group(s)	Study Method(s)	Outcome(s)
Diagnosis and management of dementia: A review Arvanitakis et al. 2019 [1]	University Medical Center, Chicago	-	-	-	Literature research	Management should include both non-pharmacologic and pharmacologic approaches, although the efficacy of available treatments remains limited.
Knowledge, awareness, and attitude of healthcare stakeholders on AD and dementia in Qatar Paul et al. 2023 [2]	Qatar	229 responses	30 >31 years	Physicians (20.5%), nurses (21.0%), students (24.5%), and educators/researchers (15.3%), and the rest (18.8%) were dentists, pharmacists, or allied healthcare professionals, etc.	Cross-sectional study	It is essential for healthcare practitioners and the general public to improve awareness of the risk factors for dementia.
Dementia in the Qur'an: A study of the term Aržal Al-'Umur and its relevance to the problem of anxiety disorder Ula, 2022 [30]	Indonesia	-	-	-	Library research	Dementia risk factors from the Islamic perspective: 1. Weak faith 2. Depression 3. Weak dhikr
Are tomorrow's doctors prepared to prevent dementia? A cross-sectional study of Tasmanian medical students' knowledge of dementia risk factors. Morgan et al. 2022 [5]	Medical students of Tasmania University	82 responses		Medical students enrolled in the 5-year medical degree program (MBBS) at the University of Tasmania	Cross-sectional study	Knowledge of vascular risk factors for dementia, particularly modifiable risk factors, is limited.
Prevalence of risk factors for dementia in elderly population in a Tribal area of central India – A community-based cross-sectional study Ragubathy et al. 2020 [7]	India	346 responses	≥55 years		Cross-sectional study	The prevalence of risk factors includes hypertension (31.8%), tobacco chewing (25.43%), high waist-hip ratio (24.57%), smoking habits (15.03%), head injury (11%), overweight (9.54%), alcohol intake (9.25%), age 71–80 (9.25%), diabetes (9%), stroke (4.62%), family history of dementia (2.6%), obesity (2.31%), coronary artery disease (CAD) (1.73%), and depression (1.45%).
The effect of religion and spirituality on cognitive function: A systematic review Hosseini et al. 2019 [6]	Canada	17/6300 citations	-	-	Literature review	Religious and spiritual practices may protect against cognitive decline in middle-aged and older adults.

Title, Author(s), Year, Reference	Place of study	Sample	Age (y)	Group(s)		Study Method(s)	Outcome(s)
Dementia prevention, intervention, and care: 2020 report of the lancet commission Livingston et al. 2020 [12]	London, UK	-	-	-	-	Systematic literature review and meta-analysis	Measures for dementia prevention: Minimizing diabetes Treating hypertension Preventing head injury Quit smoking Minimizing air pollution Reducing midlife obesity Maintain frequent exercise Reducing the occurrence of depression Avoiding excessive alcohol Treating hearing impairment Maintaining frequent social contact Attaining a high level of education
Dementia theory from the perspective of Islam Asadzandi, 2019 [3]	Iran	-	-	-	-	Qualitative evolutionary study	Faith (Iman) can help prevent anxiety, while depression, anger, and resentment can predispose individuals to dementia
Sex differences in dementia Hogervorst, 2023 [8]	Indonesia	-	-	-	-	Descriptive and qualitative library research	Dhikr can help cultivate good character, avoid immorality (sin), eliminate anxiety, and purify the heart of all negative attitudes and emotions
Impact of religious activities on quality of life and cognitive function among elderly Amir et al. 2022 [20]	Malaysia	432 responses with 244 (56.5%) males and 188 (43.5%) females	≥60 years	Practice	No practice	Cross-sectional study	Cognitive care with religious activities: Prayerreading Qur'an Fasting



factors into scientific and Islamic categories, and then combine the results for discussion to highlight the novelty of the study. The relationship between the two approaches is illustrated below.

Dementia risk factors from the scientific perspective

Risk factors for dementia can be divided into two categories: Modifiable and non-modifiable risk factors. Non-modifiable risk factors include age, gender, and genetics. The prevalence of dementia increases with age, as observed in clinical settings and population studies. Some declines in bodily functions due to aging are linked to the incidence of dementia [7]. Research conducted by Hogervorst et al. found no relationship between gender and the incidence of dementia, although some studies

indicate that women are more likely to have detectable dementia [8]. The most important genetic risk factor is apolipoprotein E (APOE) in late-onset AD, which is consistently identified as the greatest contributor in AD association studies. The APOE *e4* allele is associated with an increased risk of late-onset AD, while the APOE *e2* allele with a reduced risk. However, the APOE *e4* allele does not always cause dementia [9].

Modifiable risk factors include chronic disease, health behavior, head injury, stress, and education. Heart disease is an increasing problem, resulting in vascular insufficiency that has the potential to disrupt the function of other organs, including the brain. A growing body of literature implicates heart disease as a risk factor for dementia. Additionally, several studies have shown that cardiovascular risk factors are

Table 2. Risk factors and preventive integration efforts for dementia from scientific and Islamic perspectives

Dementia Risk Factors	Etiology and Pathophysiology of Dementia	Dementia Prevention	Classification of Preventive Dementia Integration Efforts: Science and Islam
Scientific perspective 1. Comorbid diseases - Hypertension - Diabetes mellitus 2. Avoidance of obesity 3. Education 4. Physical activity 5. Head injuries 6. Avoidance of alcohol consumption and smoking 7. Eating and sleeping patterns 8. Reducing stress Islamic perspective 1. Weak faith 2. Lack of worship and dhikr 3. Stress	Neurodegenerative Comorbid diseases: - Hypertension - Diabetes mellitus - Head injuries - Obesity - Stress	Scientific perspective 1. Treatment of comorbid diseases - Hypertension - Diabetes mellitus 2. Avoidance of obesity 3. High education 4. Physical activity 5. Avoidance of head injuries 6. Avoidance of alcohol consumption and smoking 7. Management of eating and sleeping patterns 8. Reducing stress Islamic perspective 1. Strong faith 2. Worship activities - Prayer - Reading the Qur'an - Dhikr - Fasting	1. Delay in neurodegeneration - Treatment of comorbid diseases: Hypertension and diabetes mellitus - Physical activity - Avoidance of head injuries - Avoidance of alcohol consumption and smoking - Reducing stress: strong faith, prayer, reading the Qur'an, dhikr, and fasting 2. Increasing neuroplasticity - Education - Reading the Qur'an - Fasting 3. Adjusting the diet - Nutritional diet - Fasting



independently associated with the development of dementia [10]. Hypertension in middle age and old age is a significant risk factor for the development of vascular dementia in later life. Damage to brain matter, along with cognitive impairment, is associated with long-term hypertensive status. Hypertension is significantly associated with an increased incidence of dementia among men [11]. Both middle-aged hypertension and late-life hypertension are significant risk factors for the development of vascular dementia in older adults. Thus, tight blood pressure control, including during sleep, can have a neuroprotective effect on the brain, and the administration of antihypertensive drugs can prevent the onset of dementia [12]. The development of chronic complications of diabetes mellitus is the excess production of superoxide anion. Intracellular hyperglycemia activates all the main pathways of chronic complications: The polyol pathway, increased hexosamine activity, activation of protein kinase C, formation of advanced glycosylation end products, oxidative stress, apoptosis, inflammation, and the expression and action of hormones, growth factors, cytokines, and inflammatory mediators. In general, diabetes mellitus has been associated with cognitive decline, especially in the elderly, leading to the emergence of cognitive impairment, and an increased risk of developing dementia, including AD and vascular dementia [13]. Diabetes is a risk factor for dementia. Untreated diabetes is a risk factor for dementia. One meta-analysis of diabetes cohort studies reported that, cross-sectionally, people with diabetes who took anti-diabetic drugs had a lower prevalence of cognitive impairment and a reduced incidence of dementia [14].

A meta-analysis of more than 37 studies was conducted to assess the correlation between smoking and dementia. It is established that smokers show an increased risk of dementia, and quitting smoking can reduce this risk. The habit of smoking in middle age has a much stronger impact on the risk of cognitive impairment in old age. Additionally, smoking in old age further increases the occurrence of dementia [15]. Heavy alcohol consumption may be associated with an increased risk of dementia in patients with mild cognitive impairment or in men carrying the APOE *e4* allele. In contrast, light-moderate alcohol consumption may be associated with a reduced risk of dementia in elderly patients with mild cognitive impairment. Heavy drinkers have a higher risk of dementia than abstainers and light drinkers [7]. Regular drinking in midlife has a much stronger impact than individual factors on the risk of cognitive impairment in late life [16].

A meta-analysis of more than 37 studies was conducted to assess the correlation between smoking and dementia. It was determined that smokers showed an increased risk of dementia, and quitting smoking reduced the risk of smoking cessation. The increased risk of AD from smoking is more pronounced in APOE *e4* noncarriers. Habitual smoking and regular alcohol consumption in middle age have a much stronger impact than individual factors on the risk of cognitive impairment in late life [12]. Heavy alcohol consumption may be associated with an increased risk of dementia in patients with mild cognitive impairment or men carrying the APOE *e4* al-

lele. In contrast, light to moderate alcohol consumption may be associated with a reduced risk of dementia in elderly patients with mild cognitive impairment. Heavy drinkers have a higher risk of dementia than abstainers and light drinkers [11].

This is a difficult time for people with concerns about the long-term neurological effects of head injuries. Increasing evidence links traumatic brain injuries (TBIs) to neurodegenerative diseases and dementia [17]. Many high-profile diagnoses of chronic traumatic encephalopathy (CTE), specifically post-traumatic dementia, have been made post-mortem, contributing to general anxiety about the long-term effects of even mild injuries [18]. The international classification of disease (ICD) defines mild TBI as a concussion, and severe TBI as a skull fracture, edema, brain injury, or hemorrhage. TBI is associated with a higher risk of increased incidence of dementia after six months compared to individuals who did not experience a TBI [12].

Depression is a key comorbid risk factor for dementia. Experiencing period-specific psychological distress throughout life can influence cognitive health. When the physiological stress response is triggered, the activity of the hypothalamic-pituitary-adrenal axis fosters excessive cortisol production, potentially leading to hippocampal damage. Thus, the stress response may influence cognitive function and the risk of dementia [19].

The negative impact of chronic stress on cognition can be significant, and interventions controlling stress levels provide benefits for dementia prevention. Supporting this idea, regular religious activities can improve the cognitive function of healthy individuals. Faith has been shown to delay age-related declines in cognitive function and improve some neuropsychological outcomes in subjects with mild cognitive impairment [20].

Psychological distress, such as feelings of anxiety, depression, irritability, and reactions to external stressors in a person's daily life, is associated with an increased risk of dementia. Stress can have severe and dangerous consequences not only for our brain health but also for our health in general. We can go further in dementia prevention by addressing psychological risk factors for dementia [19].

Bahiroh et al. indicated that people with lower education levels have a higher chance of having undetected dementia. This finding is supported by many studies showing that people with more education tend to perform better, making early signs of dementia more diffi-

cult to detect on standard tests because they do not reach the threshold required for detectable dementia [21]. Low education is a risk factor for accelerating memory decline and the occurrence of dementia, with the impact being more pronounced as one ages. A child's higher education level and greater lifetime educational attainment reduce the risk of dementia. New jobs can improve overall cognitive abilities, and education during late adolescence when the brain reaches its greatest plasticity. This suggests that cognitive stimulation is more important during youth [12].

Najar et al. showed that physical activity in midlife was independently associated with a reduced risk of dementia and its subtypes. They showed that these midlife activities play a role in maintaining cognitive health in old age [22]. Regular physical exercise seems to be one of the effective methods to reduce the risk of dementia among all lifestyle changes that have been studied. Several studies on the effects of aerobic exercise (exercise that increases heart rate) in middle-aged or older adults have found improvements in thinking and memory, as well as reduced rates of dementia [23].

The study of physical activity is complex. Physical activity patterns are influenced by age, generation, morbidity and gender, and social and cultural factors. Research shows an association between physical activity and a potential reduction in the risk of dementia. Individuals who do not enjoy exercising may experience one of the consequences or causes of dementia prodromes and may be at greater risk of cardiovascular morbidity. Therefore, exercise is essential for preventing and reducing risk factors for dementia [24].

Obesity has been associated with cognitive deficits, impaired long-term potentiation, and synaptic plasticity, as well as smaller brain volume, increasing the likelihood of developing AD and other dementias. Therefore, obesity is established as a risk factor for dementia [25]. Obesity has been associated with cognitive deficits, impaired long-term potentiation, and synaptic plasticity, as well as smaller brain volume, increasing the likelihood of developing AD and other dementias. Therefore, obesity is established as a risk factor for dementia [25]. Obese people had a 74% increased risk of dementia, while overweight people had a 35% greater risk of dementia compared to normal-weight people. Higher rates of overweight were observed in women suffering from AD aged 70-79 years compared to women who did not suffer from dementia. For every 1.0 increase in BMI at age 70, the risk of AD increases by 36% [26].

Sleep disorders are very common in the elderly, and these changes in sleep patterns are known to be a risk factor for the future development of mild cognitive impairment and dementia. Research suggests an interaction between worsening sleep-wake cycles and dementia. Observing such sleep-wake rhythms can provide important information about the onset of cognitive decline, even years before the clinical onset of dementia [11].

Nutrition and food components remain a challenge for research, with controversy still raging regarding the contribution of micronutrients to the incidence of dementia. Observational studies have focused on individual components ranging from folate and B vitamin content to vitamins C, D, and E, and selenium, which are potential protective factors. In the last five years, there has been a movement to consider entire diets, especially those with high plant intakes, such as the Mediterranean diet (characterized by a high intake of vegetables, legumes, fruits, nuts, cereals, and olive oil, and a low intake of saturated fats and meat) or similar Nordic diets, rather than individual nutrients, as a means to minimize cognitive decline and dementia. One example is a longitudinal cohort study of 960 participants, aged 58–99 years, in which those reporting high vegetable intake experienced less cognitive decline than those with low intake [12].

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Risk factors for dementia from the Islamic perspective

Religion has an important influence on human health and behavior, and people often use religion to cope with illness and stressors in life. Religion and spirituality also shape the way society views neurocognitive disorders, such as the symptoms of dementia. Some of these beliefs can cause delays in seeking treatment from formal health services [28]. Among the results of the literature review regarding efforts to prevent Islamic perspectives. Based on literature studies, several risk factors for dementia from an Islamic perspective, several risk factors were identified, which are explained below [29].

Defects of spiritual stress (resentment, hatred, envy, and vengeance) can negatively impact brain function and

increase the frequency of dementia. A lack of faith may weaken individuals in carrying out daily religious activities, leading to increased restlessness and anxiety, which can contribute to the onset of the dementia process [3]. Faith is the basis for carrying out daily individual religious activities, and religious activity has been positively associated with the preservation of cognitive function. Thus, it can be concluded that faith has an important role in preventing the onset of dementia [20].

Faith regarding psychological health is not just a theory; it is about how this faith can be applied in life. With faith, it will be easier for a person to find peace of mind, as faith always directs people to think positively. Therefore treating psychological illnesses with faith is considered one of the most effective approaches [30].

To ensure that one's faith remains strong, a person should continually fortify themselves by engaging in dhikr, praying, seeking forgiveness, reminding one another, regularly evaluating themselves, and avoiding things that may harm them. This practice is important because it helps individuals recognize Allah SWT [30].

Several religious practices state that reading and listening to the Qur'an can protect against a decline in cognitive function [11]. The relationship between the frequency of reading the Qur'an and the incidence of dementia, based on a study of 75 respondents, indicated that the majority who reported not reading the Qur'an included half who experienced severe dementia (60%), while a small proportion had normal dementia (6.7%). In contrast, only a small minority who read the Qur'an experienced severe dementia (8.9%), and almost half experienced normal dementia (42.2%). Reading the Qur'an can maximize brain function. When someone reads the Qur'an, the sounds produced are received by the ears and then transmitted to the brain, which processes them and generates a response in the form of an electronic field in the cells to compensate for the vibrations produced [31, 32].

Prayer is a form of worship that includes spoken words and special bodily movements, beginning with takbir and ending with greetings. The essence of prayer is remembering Allah SWT. With a heart that consistently remembers Allah, the Most Perfect God, a person gains inner strength when facing the challenges in their life.

Medical circles have widely explored the health benefits of prayer. They have found that the rhythmic movements involved in prayer are one of the best ways for the body to relax. Additionally, they demonstrate that

every movement contains certain "benefits" for human health (prayers). The results of this research showed that routine obligatory prayers have a significant relationship with better cognitive function than those who do not pray regularly. Prayer can also improve the quality of life (QoL) for the elderly [20].

Religious activities play an important role in maintaining a better QoL and cognitive function compared to the elderly who are less involved or do not engage in religious activities. A good QoL requires a holistic approach in terms of mental health and physical health leading to happiness [21]. This awareness can foster public understanding of the importance of practicing and participating in religious activities to achieve healthy aging. However, it is recommended that further research be conducted to explore other religious activities and their relationship with QoL and cognitive function [22].

Religious and spiritual practices have the potential to improve mental and physical health and reduce the risk of cognitive impairment. In a 12-month longitudinal study in Italy, it was reported that older adults with AD-related dementia (n=64) reported higher religiosity (i.e. frequency of praying, attending religious events, and reading religious material) and decreased spirituality, along with slower behavior and cognition compared to those with lower levels of religiosity, religiosity and spirituality [32].

Dhikr is a method of therapy in psychology, which can relax a person and make the heart calm. Dhikr can foster positive character traits, alleviate anxiety, purify the heart from negative attitudes and emotions, and, most importantly, is significantly influenced by the presence of the heart [33].

Allah SWT says in the Qur'an surah Ar-Ra'd verse 28

This means: This means: "(Namely) those who believe and whose hearts find peace in the remembrance of Allah. Remember, that only by remembering Allah will your heart find peace" (Ar-Ra'd/13:28). Allah SWT says in the Qur'an, Surah Ar-Ra'd, verse 28:

Dhikr, in a specific sense, refers to speech, or more practically, to mentioning the name of Allah. Through dhikr, a person remembers Allah, and their soul feels calm. When someone repeats phrases of Allah SWT, such as "Subhanallah," several areas of the brain become active. This activity causes a bioelectric flow in the brain's nerve regions. If dhikr is said repeatedly, this nervous activity becomes pronounced and contributes to an

increase in bio-electrical energy. Over time, this active group of nerves influences other nerve groups to become equally active, resulting in overall brain activation. Consequently, this can enhance cognitive abilities [34, 35].

Fasting is a spiritual practice that provides peace of mind and can also prevent and treat disease. Additionally, fasting improves cognitive function in dementia sufferers by enhancing memory. Fasting has been shown to increase the formation of new neurons, which strengthens the link between cognition and neuroplasticity. Neurogenesis in the adult hippocampus and its connections to the prefrontal cortex are related to learning and memory [36]. The underlying mechanisms contributing to the effects of fasting may include reduced oxidative stress and increased neurotrophic and bioenergetic signaling. A reduction in food intake and a lack of available energy lead to cellular stress perceived by neurons, which in turn results in increased production of stress-resistant response proteins [37]. Fasting also causes the production of ketones in large quantities, which the brain uses for energy. The presence of ketones increases the expression of neurotrophic factor derivative genes from the brain, which have a significant effect on dementia and cognition [38].

Conclusion

The healthy lifestyle described in the Qur'an encompasses both a physically healthy lifestyle and a spiritually healthy lifestyle. This aligns with the scientific approach, which emphasizes that the elderly should pay attention not only to physical health but also to spiritual health, as both aspects are closely related and influence each other. To maintain health in the elderly and prevent dementia from a physical perspective, the scientific approach includes preventing disease by avoiding risk factors, treating comorbid conditions, establishing healthy eating and sleeping patterns, avoiding obesity, engaging in physical activity, refraining from alcohol and cigarette consumption, and reducing stress. From a spiritual perspective, Islam teaches humans to obtain peace of mind through strong faith and to engage in acts of worship, such as prayer, reading the Qur'an, dhikr, and fasting.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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Authors' contributions

All authors equally contribute to preparing all parts of the research.

Conflict of interest

The authors declared no conflicts of interest.

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