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INTERNALIZING QUR'ANIC NUTRITIONAL VALUES THROUGH ISLAMIC EDUCATION: A THEMATIC EXEGESIS STUDY

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ABSTRAK

Kajian mengenai gizi dalam perspektif Al-Qur'an selama ini cenderung berfokus pada aspek normatif tentang makanan halal, thayyib, dan kesehatan, sementara kajian yang menghubungkan nilai-nilai gizi Al-Qur'an dengan kerangka pendidikan Islam sebagai proses pembentukan kesadaran dan perilaku masih belum banyak dikembangkan. Penelitian ini bertujuan menganalisis nilai-nilai gizi dalam Al-Qur'an melalui pendekatan tafsir tematik serta menjelaskan relevansinya dalam pendidikan Islam. Penelitian ini menggunakan metode kualitatif berbasis studi kepustakaan dengan analisis tafsir maudhu'i terhadap ayat-ayat Al-Qur'an yang berkaitan dengan makanan, konsumsi, keseimbangan, dan pemeliharaan tubuh. Hasil penelitian ini menunjukkan adanya hubungan konseptual antara nilai-nilai Al-Qur'an, pengetahuan gizi, kesadaran, pembiasaan, dan perilaku konsumsi sehat sebagai rangkaian pendidikan yang berorientasi pada pembentukan karakter Islami. Temuan tersebut merupakan hasil sintesis literatur dan eksegesis tematik, bukan hasil pengujian model secara empiris. Berbeda dengan penelitian empiris sebelumnya yang mengukur pengaruh pendidikan gizi terhadap perilaku makan, penelitian ini memberikan kontribusi berupa kerangka konseptual yang menjelaskan posisi nilai-nilai gizi Al-Qur'an dalam pendidikan Islam. Kajian ini menjadi dasar teoritis bagi pengembangan penelitian lanjutan mengenai implementasi pendidikan gizi berbasis nilai-nilai Islam.

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Keywords:
Thematic Exegesis; Health Literacy; Islamic Education

ABSTRACTS
Studies on nutrition from a Quranic perspective have largely focused on normative aspects regarding halal (permissible) and tayyib (wholesome) food and health, whereas research linking Quranic nutritional values to the Islamic educational framework as a process for shaping awareness and behavior remains underdeveloped. This study aims to analyze nutritional values in the Quran using a thematic exegesis (tafsir maudhu'i) approach and to explain their relevance to Islamic education. Employing a qualitative, library-based research method, the study analyzes Quranic verses concerning food, consumption, balance, and bodily maintenance. The results reveal a conceptual link between Quranic values, nutritional knowledge, awareness, habituation, and healthy consumption behavior, forming an educational sequence oriented toward Islamic character building. These findings are derived from a synthesis of literature and thematic exegesis rather than empirical model testing. Unlike previous empirical studies that measured the impact of nutrition education on eating habits, this study contributes a conceptual framework explaining the role of Quranic nutritional values within Islamic education. This study serves as a theoretical foundation for future research on the implementation of nutrition education based on Islamic values.

A. INTRODUCTION

As the primary source of Islamic teachings, the Qur'an provides guidance not only on matters of worship and spirituality but also encompasses principles of living related to health, dietary habits, and the care of the human body (Raut et al. 2024). Through various verses, the Qur'an addresses the subject of food by emphasizing the concept of *halalan thayyiban* (permissible and wholesome), prohibiting excessive consumption, advocating for balance, and fostering the awareness that the body is a trust that must be preserved (Engidaw et al. 2025).

Nutrition issues must be understood as matters that affect human life holistically, encompassing educational, social, cultural, and religious aspects. To date, Indonesia continues to face nutritional challenges in various forms (Tremblay et al. 2024). Results from the 2024 Indonesian Nutritional Status Survey (SSGI) indicate that the national stunting prevalence stands at 19.8%, down from 21.5% the previous year. While this decline represents progress, the fact that nearly one in five children under five suffers from stunting demonstrates that the problem of chronic malnutrition remains unresolved (KESEHATAN 2024).

UNICEF also notes that Indonesia continues to face a triple burden of malnutrition: undernutrition such as stunting and wasting micronutrient deficiencies, and overweight and obesity (UNICEF 2024). This situation indicates that the issue facing the population is not merely a lack of food, but also concerns food quality, composition, consumption patterns, and the ability to choose foods that support health (WHO and UNICEF 2024).

On the other hand, issues regarding excessive consumption and unhealthy diets are becoming increasingly prominent. In January 2026, the WHO reported that the prevalence of adult obesity in Indonesia had risen from 15.4% to 23.4% over a ten-year period, while nearly one in five adolescents was overweight (Aulia et al. 2025). The WHO also noted that almost half of the Indonesian population aged three and older consumed more than one sugar-sweetened beverage daily, whereas only 3.3% of the population aged five and older consumed the recommended minimum of five servings

of fruits and vegetables per day. Dietary risk factors have even been identified as the third-largest contributor to death and disability in Indonesia. The data reveals a serious issue regarding public consumption patterns (Colozza et al. 2025).

Nutritional issues are also prevalent among adolescents. Beyond the problem of excess weight, anemia remains a concern. Data analyzed by the Health Development Policy Agency based on the 2023 SKI survey indicate that 54.8% of adolescent girls have never received blood-supplementing tablets, while distribution relies heavily on schools. This situation demonstrates that health interventions cannot rely solely on medical services or the provision of food and supplements (Mukhamedzhanov et al. 2023).

A number of previous studies have examined the relationship between the Qur'an, food, and health. Research in the field of Qur'anic exegesis generally focuses on interpreting verses related to food such as the concepts of halal and haram and tayyib (wholesomeness), prohibitions against excessive consumption, and the principle of balance in human life. These studies have successfully elucidated the normative and ethical dimensions of Quranic teachings regarding food; however, most have stopped at the stage of textual interpretation and have not sufficiently linked these values to how they can be transformed into awareness and behavior through educational processes. In other words, previous exegetical studies have explained the values contained in Quranic verses but have not deeply explored how these values can be instilled in individuals' lives through Islamic educational mechanisms.

Society needs knowledge, awareness, attitudes and the ability to make the right decisions regarding food and health. It is at this point that nutritional health literacy has an important position. Basically, nutritional health literacy is not just the ability to know the nutritional content in food (Akin et al. 2025). This literacy includes the ability to obtain information, understand health messages, assess information sources, choose food appropriately, and apply this knowledge in everyday life. People can have access to sufficient amounts of food, but still experience nutritional problems if their consumption patterns are unbalanced (Dogan et al. 2025).

Similarly, the abundance of health information on the internet does not automatically lead to healthy eating habits. Instead, the public is confronted with promotions for foods high in sugar, salt, and fat, as well as diet trends, scientifically unfounded health information, and various commercial messages that can influence consumption decisions. The WHO notes that processed products high in sugar, salt, saturated fat, and trans fat are becoming increasingly dominant and easily accessible in Indonesia (Ash et al. 2023).

In Indonesian society, where religious life is deeply rooted, efforts to build nutritional health literacy can be advanced through an approach that is not merely medical but also religious and educational. Islam places great emphasis on food, health, hygiene, balance, and the care of the body (Boidin et al. 2021).

The Qur'an does not present nutritional theory in the sense of modern health science; rather, it offers a set of values that can serve as an ethical foundation for human consumption habits. These values include the selection of food that is *halal* (permissible) and *tayyib* (wholesome/good), the prohibition of excess, gratitude for sustenance, balance, cleanliness, and the human responsibility for self-care (Solihin et al. 2024). One key principle is found in Surah Al-Baqarah [2]: 168, which instructs human beings to consume food that is halal and tayyib (Muslimah et al. 2020).

In the official translation of the Ministry of Religion, the verse directs humans to eat what is halal and good on earth and not to follow the steps of Satan (Kementerian Agama 2020). The concept of halalan tayyiban has an important meaning in discussing nutrition. Halal is related to sharia provisions, while the tayyib aspect opens up space for discussion regarding quality, goodness, safety, cleanliness and the suitability of food for human life. Rahardja's study regarding halalan tayyiban also shows the relevance of this concept to fulfilling nutrition and healthy food in an educational environment (Musthopa 2020).

This principle is reinforced by Surah Al-A'raf [7]: 31, which instructs human beings to eat and drink without excess. This verse is highly relevant to contemporary nutritional issues. In the context of health, nutritional problems can arise not only from insufficient intake but also from excessive consumption (Kaltsum and Amin 2024).

The rising prevalence of obesity, high consumption of sugar-sweetened beverages, and low intake of fruits and vegetables demonstrate that the principle of moderation in consumption is highly relevant to the current state of society (Annan et al. 2021). The prohibition against israf (excess/wastefulness) can be interpreted as a foundation for cultivating the awareness to regulate one's diet, heed the body's needs, and avoid consumption habits that exceed actual requirements (Ulker et al. 2024).

Apart from QS. Al-Baqarah verse 168 and QS. Al-A'raf verse 31, the Qur'an contains a number of other verses relating to food, health, giving food, gratitude, and human responsibility for God's blessings (Jabbaripour et al. 2020). QS. An-Nahl [16]: 114, for example, again links the consumption of halal and good food with gratitude to Allah. All of these verses show that food in the Qur'an is not placed simply as a biological need. Food has spiritual, moral, social and health dimensions. How to obtain, choose, consume and distribute food has values related to human responsibility (H. Soro et al. 2025).

The issue is that public understanding of *halal* food often focuses primarily on its legal status, while the dimensions of tayyib (wholesomeness) such as balanced consumption, nutritional quality, and health impacts do not always receive commensurate attention. Yet, a food item may satisfy legal halal requirements, but if consumed disproportionately, it can still lead to health problems (Mujiatun et al. 2023).

Foods or beverages high in sugar, salt, and fat, for instance, are not automatically haram (forbidden); however, excessive long-term consumption is linked to an increased risk of non-communicable diseases (Raimi et al. 2025). This situation highlights the need to broaden the perspective from merely "halal for consumption" to "halal, wholesome, safe, nutritious, and consumed in appropriate proportions." In this context, the thematic exegesis approach or tafsir maudhu'i becomes relevant. Issues regarding nutrition are not explained in a single verse but are instead distributed across various verses within different contexts (Kamil et al. 2025).

Through thematic exegesis, verses concerning food, the concept of halalan tayyiban (wholesome and permissible sustenance), balance, the prohibition of excess, gratitude, the provision of food, and the preservation of life can be gathered and analyzed as a unified theme (Nur Hanifah et al. 2024). This approach fosters a more holistic understanding of nutritional values within the Qur'an without forcing it to become a textbook on nutritional science. Modern health science continues to be utilized to explain human biological needs, while the Qur'an provides the foundational

values, moral orientation, and religious awareness that support healthy behavior (Humaidi and Kholidi 2024).

This study also has an important position in the perspective of Islamic education. Islamic education is essentially not only directed at mastering religious knowledge, but at the process of internalizing values until these values form attitudes and behavior (Cesur and Mocan 2018). Internalization means that values do not stop at the stage of being known, but enter the individual's consciousness and are realized through habits (Biplob and Abdullah 2019).

In the context of nutrition, it is not enough for a person to simply be familiar with scriptural verses regarding halal and wholesome food. They must also be able to translate these values into practice by selecting appropriate foods, managing portion sizes, ensuring hygiene, reading product information, limiting foods that pose health risks, and establishing responsible consumption habits (Teviana et al. 2025).

The Islamic education perspective provides space for this process through various educational pathways. The nutritional value of the Qur'ani can be instilled through families, schools and madrasas, Islamic boarding schools, mosques, taklim assemblies, da'wah activities, and community education programs (Fandir 2024). In families, parents can connect the habit of healthy food with the concept of halal tayyiban and gratitude. In educational institutions, learning Islamic Religious Education can be linked to the science of health and nutrition (Saputra et al. 2023).

Within the community, mosques and religious activities can serve as a means of education regarding healthy, balanced, and responsible consumption. Through this approach, nutrition education is not viewed as a health topic separate from religion, but rather as part of cultivating a Muslim's sense of responsibility toward their body and life. A number of previous studies have explored the relationship between Islam, food, and health (May et al. 2024).

This research goes beyond the question of what the Qur'an says about food, addressing instead more practical inquiries: what values can be formulated, how these values are understood within the context of nutritional science, and how they are internalized to shape public health behavior (Astria et al. 2023). The conclusions drawn regarding this area of study represent a synthesis of the directions taken by various previous studies, each of which focused on specific aspects (Uribe et al. 2021).

The urgency of this research is underscored by the fact that nutritional issues are fundamentally linked to behavior. While health policies, nutritional services, fortification, supplementation, and food provision play significant roles, daily consumption choices ultimately occur at the individual and family levels. When a community possesses a strong value framework regarding food, nutrition education has the potential to become more contextual (Kamsiah et al. 2023). For the Muslim community, health messages appropriately aligned with Quranic values can establish a moral foundation: caring for the body is not merely a matter of following health recommendations, but an integral part of the responsibility to honor the trust of life bestowed by Allah SWT.

This study also aims to prevent the emergence of a dichotomy between religious studies and health sciences. There is no need to position the Qur'an as a substitute for nutritional science, nor to separate nutritional science from religious values; both can be situated within their respective domains. Nutritional science provides empirical evidence regarding nutrient requirements, consumption patterns, and the impact of

food on health, whereas Islamic education fosters an awareness of values that can guide individuals in applying this knowledge. Such integration can strengthen Islamic education, making it more responsive to real-world societal issues (Nicaise and Kahan 2013).

This research can yield a value framework that serves as a foundation for developing Islamic-based nutrition education for families, educational institutions, and the community. Given that stunting rates remain at 19.8%, adult obesity has risen to 23.4%, and there is high consumption of sweetened beverages alongside low intake of fruits and vegetables, an educational approach linking health with religious awareness holds significant relevance.

An analysis of these three fields of study reveals a more specific research gap. First, while studies on Quranic exegesis have identified Islamic principles regarding food and health, they have not sufficiently developed the conceptual link between the interpretation of verses and the educational processes that would enable the practical application of these values in daily life. Second, although research in Islamic education has advanced theories on value internalization, there has been limited examination of how these concepts apply to nutritional values derived from the Quran. Third, while research on nutrition education has highlighted the importance of knowledge and the habituation of healthy eating behaviors, it has largely failed to integrate spiritual dimensions and religious values as factors shaping consumption behavior.

B. METHOD

This study employs a qualitative method based on library research, utilizing a maudhu'i (thematic) exegesis approach. This approach was selected because the study aims to examine, identify, and synthesize nutritional values found in the Qur'an and relate them to the concept of value internalization in Islamic education(Ageeva 2023). The study does not aim to empirically test the effectiveness of an educational model; rather, it seeks to construct a conceptual framework based on an analysis of Qur'anic verses, exegetical literature, and Islamic educational theory (Fazal and Chakravarty 2021).

The initial stage of research was carried out through the process of identifying verses from the Koran that were related to the themes of food, health, consumption, balance and cleanliness. Identification of verses was carried out based on searching for keywords in the Al-Qur'an, including tha'am (food), akala (eating), syarab (drinks), halal, thayyib (good), israf (excessive), as well as the concept of balance and maintenance of the body (Alunandika and Amien 2024). The primary sources consist of Quranic verses addressing food, drink, health, consumption patterns, balance, the prohibition of excess, and bodily well-being. Key themes include the concept of halalan tayyiban (permissible and wholesome), the prohibition of *israf* (excess/wastefulness), gratitude for food, the diversity of food sources, and human responsibility for maintaining health.

To interpret these verses, the study utilizes both classical and contemporary exegetical works, as well as commentaries published by the Committee for the Verification of the Quranic Text (LPMQ) under the Ministry of Religious Affairs. LPMQ itself offers various thematic exegetical studies, including works on health from a Quranic perspective and on food and drink from the perspectives of the Quran and science (Magerøy and Wiig 2023).

Meanwhile, secondary sources include books, scholarly journal articles, research findings, health-related documents, and various literature addressing nutritional science, health literacy, Islamic education, and the process of value internalization. These sources are utilized to integrate the interpretation of the verses with knowledge of nutritional health and educational theories. Drawing upon sources from multiple disciplines is essential, as this research not only examines the meaning of the verses but also explores how these Quranic values can be applied to strengthen public nutritional health literacy through educational processes (Ascarya Academia 2022).

The analysis of the verses employs the thematic (maudhu'i) method of exegesis. This method was selected because the discussion of nutrition is not confined to a specific verse or surah but is distributed across various parts of the Qur'an. The thematic approach allows verses related to a particular issue to be gathered and examined as a unified theme. This same approach is utilized by the Qur'an Manuscript Verification Committee (Lajnah Pentashihan Mushaf Al-Qur'an) in compiling thematic studies to address a specific topic based on the entirety of the relevant verses (Arwani et al. 2022).

The research process began with identifying and gathering verses related to nutrition and health. These verses were then categorized by theme such as wholesome and lawful food, balanced consumption, the prohibition against overeating, food sources, hygiene, gratitude, and health maintenance. Subsequently, the verses were analyzed by examining explanations found in various exegetical works, the context of the verses, and the interrelationships between them. The findings were then classified into a set of fundamental values representing nutritional principles from a Quranic perspective (Chun Tie et al. 2019).

The selected verses were determined based on inclusion criteria, namely verses that explicitly or implicitly contain values regarding food choices, consumption patterns, self-control, cleanliness, and human responsibility for bodily health. Meanwhile, verses that only mention food in the context of historical narratives or parables without relevance to nutritional and educational value were not included in the analysis.

The next stage was carried out through integrative analysis by connecting the values found with the concepts of nutritional health literacy and Islamic education. At this stage it is analyzed how the values of halal tayyiban, balance, controlling consumption, cleanliness, gratitude and responsibility for looking after the body can be translated into public health knowledge, attitudes and behavior (Doyle et al. 2020).

The validity of the research data is ensured through source triangulation—specifically, by comparing various classical and contemporary exegetical references. Furthermore, analytical consistency is maintained through thematic coding of the identified verses and concepts. Interpretative validity is also reinforced through academic scrutiny and a comparison of perspectives among exegetes, ensuring that the study's findings do not rely on a single, isolated viewpoint. Consequently, this research yields a conceptual synthesis linking thematic Quranic exegesis, nutritional literacy, and Islamic education to elucidate the process of internalizing nutritional values based on Islamic teachings (Cole 2023).

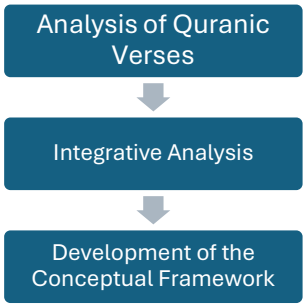

Figure 1 Research Steps

C. RESULT AND DISCUSSION

Concepts of Food and Nutrition in the Qur'an Based on a Thematic Exegetical Study

From the perspective of the Qur'an, food is a vital element of human life; it serves not only to satisfy biological needs but also encompasses spiritual and ethical dimensions. The Qur'an views food as a form of sustenance bestowed by Allah upon humanity to sustain life and maintain physical health. Consequently, the consumption of food in Islam is not merely a physical act but is also linked to values of faith, obedience, and human responsibility in utilizing Allah's gifts on earth. This concept highlights the strategic role food plays in maintaining the balance of human life, both physically and spiritually.

Furthermore, the Qur'an emphasizes that humans are commanded to be mindful of the food they consume as an expression of awareness regarding the sources of life provided by Allah. Several verses invite people to reflect on the process of how food originates stemming from the soil, water, and the diverse vegetation that grows upon the earth. This demonstrates that food is not simply a physical necessity but also a means to heighten human awareness of Allah's greatness and the importance of preserving the natural balance. Thus, the Qur'anic concept of food situates consumption within a framework of spiritual values, health, and ecological responsibility.

The Qur'an employs several terms to describe food and sources of sustenance for human beings. One of the most frequently used terms is ṭa'am, which literally signifies food or that which humans consume to meet the body's needs. This term is often used in the Qur'an to refer to the various types of food bestowed by Allah upon humanity as a means of sustaining life. The use of the term ṭa'am indicates that the Qur'an regards food as a vital component of human life one whose quality and utility must be preserved.

In addition to ṭa'am, the Qur'an uses the term rizq to describe all forms of provision granted by Allah to humans, including food and drink. This term carries a broader meaning; it encompasses not only food as a physical necessity but also reflects Allah's bounty that sustains human life in its entirety. In this context, food is viewed as part of a system of provision for which humans must be grateful and which they must utilize wisely. The concept of rizq in the Qur'an affirms that the food sources available on earth are a divine gift that must be safeguarded and used responsibly.

Another term used in the Qur'an is fakihah, referring to fruits as a natural food source for humans. Fruits are frequently mentioned in the Qur'an as one of God's blessings that contribute to human health and well-being. Their mention across various

verses demonstrates the Qur'an's attention to the diversity of natural food sources containing nutrients essential to the human body. From the perspective of modern nutritional science, fruits are vital sources of vitamins, minerals, and antioxidants. This indicates a strong relevance between the Qur'anic term fakihah and modern scientific concepts of nutrition and health.

In thematic exegesis regarding verses on nutrition in the Qur'an, the interpretations of classical scholars (mufassirun) play a crucial role in understanding the meaning of the verses, their context, and the wisdom contained within them. Scholars such as Ibn Kathir, Al-Tabari, Al-Qurtubi, and Fakhruddin al-Razi provide comprehensive explanations of verses concerning food and food sources. Their interpretations not only elucidate the linguistic aspects of the verses but also offer insight into the benefits, wisdom, and the relationship between food and human life.

Exegeses of verses concerning food demonstrate that the Qur'an addresses not only spiritual aspects but also provides guidance on healthy and beneficial dietary habits for human beings. These exegetical studies of verses regarding nutrition offer a crucial foundation for understanding the concepts of food and health from an Islamic perspective, while also serving as a basis for strengthening the community's nutritional health literacy.

Identification of Nutritional Values in the Qur'an

A thematic exegesis study reveals that the Qur'an contains values that can serve as a foundation for establishing healthy and responsible consumption patterns. While the Qur'an does not articulate nutritional science using modern scientific terminology, it provides principles regarding food selection, consumption habits, hygiene, balance, and human responsibility for maintaining the body. These values demonstrate that food is viewed not merely as a means to satisfy hunger, but as an integral part of human life encompassing health, moral, and spiritual dimensions.

One of the key principles identified is the concept of halal (permissible) and tayyib (wholesome/good). This principle is found, for instance, in Surah Al-Baqarah [2]:168, which instructs humans to consume food that is both halal and tayyib. The Qur'an presents these two concepts in tandem, indicating that food selection involves not only adherence to halal regulations but also consideration of the food's quality and wholesomeness. From a nutritional perspective, the concept of tayyib can be associated with food that is safe, clean, high-quality, beneficial, and suited to the body's needs. Thus, satisfying the halal requirement must be accompanied by attention to the quality of the food consumed.

The next value is balance and moderation in consumption. The Qur'an addresses human behavior regarding food and drink, urging against excess. This principle is significant in shaping dietary habits, as the body's needs must be met proportionately. Overeating can have adverse effects, just as insufficient intake can compromise health. Therefore, the value of balance serves as a foundation for cultivating habits where consumption aligns with actual needs, rather than allowing mere desire to dictate one's diet.

This study also identifies values such as cleanliness, safety, gratitude, and responsibility toward one's body. Attention must be paid to every aspect of the food consumed from how it is obtained, selected, and prepared to how it is eaten. Such awareness demonstrates that maintaining one's health is part of the responsibility a

person has toward themselves. Gratitude for food is not merely expressed through words; it is demonstrated by avoiding waste and excess, choosing beneficial foods, and using food resources responsibly. In this way, the act of eating becomes linked to the shaping of behavior and spiritual awareness.

Thus, the nutritional values found in the Qur'an extend beyond the mere question of whether a food is permissible to consume; they encompass how individuals treat both food and their own bodies. Principles such as halalan tayyiban (permissible and wholesome), balance, moderation, hygiene, safety, gratitude, and responsibility form a value framework applicable to nutritional health education. This framework guides the public to look beyond the question of whether a food is halal and to also consider whether it is wholesome, safe, beneficial, and consumed in appropriate quantities.

Based on these findings, Qur'anic values have the potential to strengthen public nutritional health literacy. Internalizing religious values can foster the awareness that maintaining a healthy diet and physical well-being is not merely a matter of biological necessity but also an aspect of a Muslim's responsibility. Consequently, the nutritional values in the Qur'an can serve as an educational foundation that bridges faith, nutritional knowledge, and healthy living habits, thereby providing the public with both a religious and rational basis for making healthy, balanced, and responsible food choices.

Qur'anic Nutritional Values Are Relevant for Strengthening Nutritional Health Literacy

The concept of halalan tayyiban establishes that food consumed by a Muslim must not only meet halal requirements but also possess qualities of goodness and wholesomeness. In the context of nutritional health, this concept extends to the ability to select food that is safe, clean, nutritious, and suited to the body's needs. With this understanding, the public is encouraged to look beyond a food's *halal* status and consider its composition, quantity, preparation methods, and health impact.

This principle is reinforced by the prohibition against israf or excess in consumption. This value is directly linked to the development of nutritional literacy, as people need to understand that the quantity of food consumed also determines the quality of one's diet. Even foods that are inherently permissible can have adverse effects if consumed in excess. Therefore, internalizing Quranic values fosters a mindset wherein controlling food portions, managing dietary habits, and choosing nutritious foods are viewed as integral parts of the responsibility to care for one's body.

These conceptual findings are supported by empirical research on the effectiveness of nutrition education. Oddo et al. (2022) studied 514 adolescents in Klaten and West Lombok through a program that incorporated school-based nutrition education and behavior change communication. Following the intervention, nutrition knowledge scores increased significantly, with a change coefficient of $\beta = 3.3$ (95% CI: 2.6–3.9). Post-intervention, adolescents were 1.5 times more likely to consume vitamin A-rich fruits and vegetables, while the likelihood of consuming sugar-sweetened beverages dropped to 0.4 times the pre-intervention level. The likelihood of engaging in 60 minutes of physical activity daily also increased 2.3-fold. These data indicate that structured nutrition education can enhance knowledge while also being associated with changes in health-related behaviors.

More recent results show a similar pattern. A study by Helsy et al. involving 30 chemistry teacher candidates in Bandung found an improvement in nutrition literacy following instruction on food additives. Pretest–posttest analysis yielded an average N-Gain of 0.72, falling into the high category. After the instruction, participants demonstrated improved ability to recognize food composition and nutritional value, distinguish between natural and synthetic additives, understand safe consumption limits, and manage a balanced diet.

These data provide empirical reinforcement for the findings of this study. The observed increase is not a direct measurement from this thematic Quranic exegesis study itself, but rather evidence from prior research indicating that educational processes can enhance nutritional literacy. Based on the study's findings, this educational approach can be enriched with Quranic values; this ensures that health information is not merely understood at a cognitive level but also grounded in a religious foundation capable of fostering the formation of attitudes and habits.

From an Islamic educational perspective, this process unfolds in three stages. First, the community acquires knowledge specifically, an understanding of the principles of halalan tayyiban (permissible and wholesome), balance, the prohibition against israf (excess/wastefulness), and the link between food and health. Second, this knowledge evolves into awareness and attitudes, manifesting as a concern for food quality, consumption levels, food safety, and the impact on the body. Third, these values are translated into behavior, such as choosing more nutritious foods, limiting excessive consumption, diversifying food sources, maintaining food hygiene, and establishing more regular eating habits.

Thus, the internalization of Quranic values can add a new dimension to nutrition education. The community is encouraged not only to eat healthily for medical reasons but also to understand the link between maintaining physical health and one's personal responsibility. The principle of gratitude is manifested by valuing food and avoiding waste; the principle of tayyib (wholesomeness) is realized through the selection of good, safe food; and the prohibition against *israf* (excess) is observed through the moderation of consumption patterns.

Based on this synthesis, the research findings indicate that Quranic nutritional values are highly relevant as a foundation for strengthening public nutritional health literacy. Evidence from the nutrition education study showing a knowledge increase of β 3.3 and an N-Gain in nutritional literacy of 0.72 demonstrates that the educational process can bring about changes in both knowledge and behavior. These findings provide an argumentative basis that integrating Quranic values into nutrition education has the potential to strengthen the community's knowledge, awareness, attitudes, and sense of responsibility regarding healthy consumption patterns. Consequently, nutritional health literacy from an Islamic educational perspective can be fostered by linking Quranic values, health knowledge, religious awareness, and the cultivation of healthy lifestyle habits.

The Formation of a Nutritional Value Internalization Model through Islamic Education

The research findings indicate that nutritional values found in the Qur'an can be formulated into an internalization model through Islamic education. This model is grounded in the understanding that Qur'anic values cannot merely be known

cognitively; rather, they must be understood, internalized, practiced as a habit, and manifested in daily behavior. In the context of nutritional health, this process aims to ensure that the community not only understands concepts such as halalan tayyiban (permissible and wholesome), balance, the prohibition of excess, cleanliness, gratitude, and the responsibility to care for one's body, but is also capable of applying these principles when selecting and consuming food.

The internalization model developed in this study is structured around the stages of value introduction, understanding, internalization, habituation, and the formation of healthy behaviors. The first stage involves introducing Qur'anic verses and values related to food and health. At this stage, the community gains a fundamental understanding that, from an Islamic perspective, food concerns not only the distinction between halal (permissible) and *haram* (forbidden) but also quality, safety, benefits, and consumption quantity. These values are then integrated with health information and nutritional science, enabling the community to comprehend the connection between religious teachings and the body's nutritional needs.

The next stage involves internalizing these values. The knowledge acquired is channeled into an awareness that maintaining a healthy diet is part of one's responsibility toward the body. The concept of *halalan tayyiban* (permissible and wholesome), for instance, goes beyond the mere ability to identify halal food; it evolves into a conscious choice to select food that is clean, safe, and beneficial for health. The prohibition against *israf* (excess/wastefulness) is likewise internalized as the ability to control portion sizes and consumption habits. Meanwhile, the value of gratitude is expressed through an attitude of appreciating food, avoiding waste, and consuming food responsibly.

Once these values are understood and internalized, the process moves to the stage of habituation. This stage is crucial because behavioral change does not occur simply through the dissemination of information. Families can cultivate the habit of providing diverse and balanced meals, while schools and madrasas can integrate nutrition education into the curriculum and students' daily activities. Mosques, Islamic boarding schools (pesantren), religious study groups (majelis taklim), and community organizations can also serve as educational venues regarding the link between religious values, consumption patterns, and health. This approach aligns with current madrasa education policies; notably, in May 2026, the Ministry of Religious Affairs provided nutrition and health education to hundreds of madrasa teachers and established the provision of clean, healthy food as an integral part of educational practices within madrasas.

The effectiveness of educational approaches in improving nutrition literacy is supported by empirical research findings. A 2025 study by Sari and colleagues involving 35 students demonstrated that project-based learning resulted in an 88% level of learning engagement, while nutrition literacy improved with an N-Gain score of 0.50, falling within the moderate category. These results indicate that when nutritional knowledge is conveyed through a contextual learning process that actively involves students, their ability to understand and utilize nutritional information can develop.

Broader findings were revealed in a study by Oddo and colleagues involving 514 adolescents in Klaten and West Lombok. Following an intervention package that included school-based nutrition education and behavior change communication, nutrition knowledge scores increased significantly (β = 3.3; 95% CI: 2.6–3.9). Post-

intervention, the likelihood of adolescents consuming vitamin A-rich fruits and vegetables was 1.5 times higher, whereas the likelihood of consuming sugar-sweetened beverages dropped to 0.4 times the pre-intervention level. The likelihood of engaging in physical activity for at least 60 minutes per day increased 2.3-fold. These data demonstrate that structured educational processes not only enhance knowledge but are also associated with changes in health-related behaviors.

These data reinforce the internalization model formulated in this study. While general nutrition education can improve knowledge and behavior, the integration of Quranic values provides an additional foundation rooted in religious motivation and moral responsibility. Consequently, an individual chooses healthy food not merely due to an awareness of its medical benefits, but also out of an understanding that caring for the body is a form of trust and a responsibility toward Allah (SWT). Within the context of Islamic education, these dimensions of knowledge and behavior are thus aligned with the spiritual dimension.

The internalization model also positions the family as the primary environment. Parents can introduce halal and wholesome foods, cultivate habits of consuming fruits and vegetables, manage portion sizes, minimize waste, and set an example in food choices. Children do not simply receive explanations about healthy eating; they witness the practice firsthand. These habits are subsequently reinforced through schools or madrasahs and their associated Islamic religious education (PAI), science lessons, healthy eating initiatives, and daily living practices.

At the school and *madrasa* levels, internalization can be achieved through an integrative approach. The material from Surah Al-Baqarah [2]: 168 regarding halal (permissible) and wholesome food can be linked to discussions on food quality. Similarly, Surah Al-A'raf [7]: 31, which addresses the prohibition of excess, can be connected to balanced dietary habits and consumption control. In this way, religious education goes beyond mere verse memorization, allowing students to translate the Quran's message into actual practice.

This internalization process can then be extended to the community level. Mosques, Islamic boarding schools (pesantren), religious study groups (majelis taklim), community health workers, and social organizations can collaborate to deliver nutrition education using approaches that resonate with the community's daily life. For instance, messages regarding the limitation of sugar, salt, and fat intake can be conveyed alongside the principle of avoiding excess. Education on safe and nutritious food can be linked to the concept of tayyib (wholesomeness). Such an approach aligns health information more closely with the value systems already familiar to the community.

Based on the analysis, the resulting model can be summarized by the following progression Qur'anic values, nutritional knowledge, religious awareness, habituation, healthy consumption behavior. Qur'anic values provide the foundation, education facilitates the process of understanding, and habituation serves as the link to behavioral change. Findings from previous studies showing an N-Gain of 0.50 in nutritional literacy, a knowledge increase of β 3.3, a 1.5-fold increase in the likelihood of fruit and vegetable consumption, and a reduction in the likelihood of consuming sweetened beverages to 0.4 times the baseline support the conclusion that nutrition education holds genuine potential to influence both knowledge and behavior.

The development of a model for internalizing nutritional values through Islamic education stands as a key conceptual outcome of this research. This model integrates

the Qur'an, nutritional science, the educational process, and behavioral formation into a cohesive, interconnected framework. Islamic education plays a pivotal role in translating values from the stage of mere awareness to that of actual practice. Through families, schools, madrasahs, pesantrens (Islamic boarding schools), mosques, and the broader community, values such as halalan tayyiban (permissible and wholesome), balance, moderation, cleanliness, gratitude, and the responsibility to care for one's body can be gradually instilled, thereby fostering a society with improved nutritional literacy and healthier consumption habits.

CONCLUSION

Research findings indicate that the Qur'an embodies nutritional values relevant to healthy living specifically the principles of halalan tayyiban (permissible and wholesome), balanced consumption, the prohibition of excess (israf), cleanliness, gratitude, and the responsibility to maintain physical health. These values can serve as a foundation for strengthening public literacy regarding nutritional health. The study also proposes an internalization model through Islamic education, comprising a progression from Qur'anic values and nutritional knowledge to religious awareness, habituation, and healthy consumption behaviors. This process can be implemented within families, schools or madrasas, Islamic boarding schools (pesantren), mosques, and the wider community. Thus, integrating Qur'anic values, nutritional science, and Islamic education offers an approach to fostering a society that is more conscious of food choices, consumption patterns, and health maintenance. Qur'anic-value-based nutrition education can be directed toward cultivating a society that is mindful of selecting food, controlling consumption, and maintaining health, while viewing the care of the body as an integral part of human responsibility.

REFERENCES

Ageeva, G. M. 2023. "Media Analytics In Library Research." *Scientific And Technical Libraries*, No. 5. Https://Doi.Org/10.33186/1027-3689-2023-5-58-76.

Akin, Joanna, Sarah Stotz, Laurel Sanville, Amy L. Yaroch, And Carmen Byker Shanks. 2025. "Nutrition Education Across Gus Schumacher Nutrition Incentive Programs: A Landscape Analysis." *Journal Of Nutrition Education And Behavior* 57 (5). Https://Doi.Org/10.1016/J.Jneb.2025.01.009.

Alunandika, Dhimas, And Saiful Amien. 2024. "Multicultural Education In Islamic Education Didactic-Methodical Review." *Edumaspul: Jurnal Pendidikan* 8 (1). Https://Doi.Org/10.33487/Edumaspul.V8i1.7950.

Annan, Reginald A., Charles Apprey, Godwin O. Agyemang, Et Al. 2021. "Nutrition Education Improves Knowledge And Bmi-For-Age In Ghanaian School-Aged Children." *African Health Sciences* 21 (2). Https://Doi.Org/10.4314/Ahs.V21i2.55.

Arwani, Wawan, Aan Jaelani, Slamet Firdaus, And Tica Fatichah Hanim. 2022. "Halal-Thayyib, Food Products, And The Halal Industry: A Thematic Analysis On The Verses Of The Qur'an." *Al-Amwal : Jurnal Ekonomi Dan Perbankan Syari'ah* 14 (1). Https://Doi.Org/10.24235/Amwal.V14i1.10830.

Ascarya Academia. 2022. “Triangulasi Data, Contoh, Penjelasan Dan Prakteknya Pada Riset.” *Ascarya Soulution*.

Ash, Sarah, Isobel Contento, Melissa D. Olfert, And Pamela A. Koch. 2023. “Position Of The Society For Nutrition Education And Behavior: Nutrition Educator Competencies For Promoting Healthy Individuals, Communities, And Food Systems: Rationale And Application.” *Journal Of Nutrition Education And Behavior* 55 (1). Https://Doi.Org/10.1016/J.Jneb.2022.07.010.

Astria, Waode Dea, Herdis Herdiansyah, And Sri Setiawati Tumuyu. 2023. “Knowledge, Attitude And Behavior On Utilizing Suboptimal Food Related Public Health.” *International Journal Of Public Health Science* 12 (2). Https://Doi.Org/10.11591/Ijphs.V12i2.22451.

Aulia, Kirana Putri, Nashwa Safa Hidayat, Radja Kusuma Maulidhan Ahmad, R. Dudy Heryadi, And Deasy Silvya Sari. 2025. “Kerja Sama Indonesia Dan Unicef Dalam Rangka Menuju Indonesia Bebas Stunting Tahun 2021-2025.” *Padjadjaran Journal Of International Relations* 7 (2). Https://Doi.Org/10.24198/Padjir.V7i2.60585.

Biplob, Hossain, And Md Faruk Abdullah. 2019. “The Importance Of Islamic Financial Literacy For Muslims: A General Review.” *Islam And Civilisational Renewal* 10 (1).

Boidin, Aimee, Ryan Tam, Lachlan Mitchell, Gregory R. Cox, And Helen O’connor. 2021. “The Effectiveness Of Nutrition Education Programmes On Improving Dietary Intake In Athletes: A Systematic Review.” *British Journal Of Nutrition* 125 (12). Https://Doi.Org/10.1017/S0007114520003694.

Cesur, Resul, And Naci Mocan. 2018. “Education, Religion, And Voter Preference In A Muslim Country.” *Journal Of Population Economics* 31 (1): 1 – 44. Https://Doi.Org/10.1007/S00148-017-0650-3.

Chun Tie, Ylona, Melanie Birks, And Karen Francis. 2019. “Grounded Theory Research: A Design Framework For Novice Researchers.” *Sage Open Medicine* 7. Https://Doi.Org/10.1177/2050312118822927.

Cole, Rosanna. 2023. “Inter-Rater Reliability Methods In Qualitative Case Study Research.” *Sociological Methods And Research*, Ahead Of Print. Https://Doi.Org/10.1177/00491241231156971.

Colozza, David, Isabella Guo, Sri Wahyuni Sukotjo, Et Al. 2025. “The Impact Of Climate Change On Child Nutrition In Indonesia: A Conceptual Framework And Scoping Review Of The Available Evidence.” *Bmj Paediatrics Open* 9 (1). Https://Doi.Org/10.1136/Bmjpo-2024-002980.

Dogan, Elisabeth Irene Karlsen, Iren Borgen, Pinar Ekiz, And Nima Wesseltoft-Rao. 2025. “Nutrition Education For Nursing Students: A Scoping Review.” In *Nurse Education Today*, Vol. 144. Https://Doi.Org/10.1016/J.Nedt.2024.106460.

Doyle, Louise, Catherine Mccabe, Brian Keogh, Annemarie Brady, And Margaret Mccann. 2020. “An Overview Of The Qualitative Descriptive Design Within Nursing Research.” *Journal Of Research In Nursing* 25 (5). Https://Doi.Org/10.1177/1744987119880234.

Engidaw, Melaku Tadege, Patricia Lee, Gelana Fekadu, Prasenjit Mondal, And Faruk Ahmed. 2025. "Effect Of Nutrition Education During Pregnancy On Iron-Folic Acid Supplementation Compliance And Anemia In Low- And Middle-Income Countries: A Systematic Review And Meta-Analysis." *Nutrition Reviews* 83 (7). Https://Doi.Org/10.1093/Nutrit/Nuae170.

Fandir, A. 2024. "Transformation Of Islamic Education: Implementation Of Technological Innovation In Education Management." *Jurnal Ilmiah Mandala Education* 10 (1). Https://Doi.Org/10.58258/Jime.V10i1.6625.

Fazal, Fathima Azra, And Rupak Chakravarty. 2021. "Researcher Development Models And Library Research Support." In *Library Hi Tech News*, Vol. 38. No. 4. Https://Doi.Org/10.1108/Lhtn-04-2021-0015.

H. Soro, Suharyanto, Muhammad Zulfikar, And Feisal Leonard Ridwanullah. 2025. "Implementation Management Budget Eat Students For Fulfil Nutrition Students At Pink 03 Islamic Boarding School." *Global Education Journal* 3 (2). Https://Doi.Org/10.59525/Gej.V3i2.826.

Humaidi, And Iqbal Kholidi. 2024. "Interaksi Dengan Al- Qur'an Melalui Metode Tafsir Tematik Perspektif Yusuf Al-Qardhawi." *Al-Qadim: Journal Tafsir Dan Ilmu Tafsir (Jtit)* 1 (1).

Jabbaripour, Pooneh, Mohammad Hossein Somi, Ali Roshani, And Roya Dolatkhah. 2020. "The Role Of Islamic Lifestyle And Healthy Nutrition In Accordance With The Recommendations Of Islam And The Holly Quran By Focusing On The Risk Of Cancer Incident." *Journal Of Community Medicine And Health Solutions* 1 (1). Https://Doi.Org/10.29328/Journal.Jcmhs.1001002.

Kaltsum, Lilik Ummi, And Ahmad Syaifuddin Amin. 2024. "The Development Of Qur'anic Thematic Exegesis In Indonesia: Historical Landscape And Shifts Of Authority." *Jurnal Studi Ilmu-Ilmu Al-Qur'an Dan Hadis* 25 (2). Https://Doi.Org/10.14421/Qh.V25i2.5422.

Kamil, Ahmad, Farah Ayuni Mohd Hatta, And Abdul Ghafar Ismail. 2025. "Comparative Study: Analysis Of Halal Standards Of The Food Industry In Islamic Countries." In *Multidisciplinary Reviews*, Vol. 8. No. 8. Https://Doi.Org/10.31893/Multirev.2025257.

Kamsiah, Emy Yuliantini, Eliana, And Rachmawati. 2023. "The Effect Of Nutrition Education On Knowledge, Attitudes And Consumption Patterns Young Women In Prevention Of Chronic Energy Deficiency In Bengkulu City." *Media Gizi Indonesia* 18 (1sp). Https://Doi.Org/10.20473/Mgi.V18i1sp.7-13.

Kementerian Agama. 2020. "Qur'an Kemenag." In *Lajnah Pentashihan Mushaf Al-Qur'an*.

Kesehatan, Ri Kementerian. 2024. "Ssgi 2024 (Survei Status Gizi Indonesia) Dalam Angka." In *Kementerian Kesehatan*.

Magerøy, Malin Rosell, And Siri Wiig. 2023. "The Effect Of Full-Time Culture On Quality And Safety Of Care – A Literature Review." In *International Journal Of*

Health Governance, Vol. 28. No. 1. Https://Doi.Org/10.1108/Ijhg-11-2022-0106.

May, Toni A., Kristin L. K. Koskey, And Kathleen Provinzano. 2024. "Developing And Validating The Preschool Nutrition Education Practices Survey." *Journal Of Nutrition Education And Behavior* 56 (8). Https://Doi.Org/10.1016/J.Jneb.2024.03.009.

Mujiatun, Siti, Budi Trianto, Eko Fajar Cahyono, And Rahmayati. 2023. "The Impact Of Marketing Communication And Islamic Financial Literacy On Islamic Financial Inclusion And Msmes Performance: Evidence From Halal Tourism In Indonesia." *Sustainability (Switzerland)* 15 (13). Https://Doi.Org/10.3390/Su15139868.

Mukhamedzhanov, Emil, Vladimir Tsitsurin, Zhanna Zhakiyanova, Botagoz Akhmetova, And Saule Tarjibayeva. 2023. "The Effect Of Nutrition Education On Nutritional Behavior, Academic And Sports Achievement And Attitudes." *International Journal Of Education In Mathematics, Science And Technology* 11 (2). Https://Doi.Org/10.46328/Ijemst.3133.

Muslimah, Muslimah, Hamdanah Hamdanah, And Nina Nina. 2020. "Science In Islamic Perspective." *International Research Journal Of Management, It And Social Sciences* 7 (6). Https://Doi.Org/10.21744/Irjmis.V7n6.1010.

Musthopa. 2020. *Lajnah Pentahsihan Al Qur'an. Balitbang Kemenag Ri* .

Nicaise, Virginie, And David Kahan. 2013. "Psychological Changes Among Muslim Students Participating In A Faith-Based School Physical Activity Program." *Research Quarterly For Exercise And Sport* 84 (4): 522 – 529. Https://Doi.Org/10.1080/02701367.2013.839933.

Nur Hanifah, Fitrawati, And Kusnadi. 2024. "Metodologi Tafsir Tematik." *Jurnal Al-Mubarak: Jurnal Kajian Al-Qur'an Dan Tafsir* 9 (2). Https://Doi.Org/10.47435/Al-Mubarak.V9i2.3313.

Raimi, Lukman, Ibrahim Adeniyi Abdur-Rauf, And Basirat Olaide Raimi. 2025. "Interdependence Of Halal Entrepreneurship And Islamic Finance For Creating A Strong Halal Ecosystem." *Journal Of Islamic Marketing* 16 (3). Https://Doi.Org/10.1108/Jima-05-2023-0162.

Raut, Sagar, Dirghayu Kc, Devendra Raj Singh, Raja Ram Dhungana, Pranil Man Singh Pradhan, And Dev Ram Sunuwar. 2024. "Effect Of Nutrition Education Intervention On Nutrition Knowledge, Attitude, And Diet Quality Among School-Going Adolescents: A Quasi-Experimental Study." *Bmc Nutrition* 10 (1). Https://Doi.Org/10.1186/S40795-024-00850-0.

Saputra, Eddy, Nur Ali, Fery Rahmawan, Achmad Muhajir, And Ahmad Mujib. 2023. "Development Of Marriage Learning Model In Islam Through Project Based Learning In Higher Education." *Jurnal Iqra' : Kajian Ilmu Pendidikan* 8 (2). Https://Doi.Org/10.25217/Ji.V8i2.3706.

Solihin, Muhtar, Alfin Maulana Haryadi, And Rohanda Rohanda. 2024. "Islamic Jurisprudence (Fiqh Science) In An Epistemological Perspective." *International Journal Of Social Science And Human Research* 07 (12).

Https://Doi.Org/10.47191/Ijsshr/V7-I12-100.

Teviana, T., Haikal Rahman, Zulkarnain Siregar, And Dina Sarah Syahreza. 2025. "The Impact Of Islamic Attributes And Motivations On Visitor Satisfaction And Word Of Mouth In Halal Supply Chain Management." *Journal Of Project Management (Canada)* 10 (1). Https://Doi.Org/10.5267/J.Jpm.2024.10.003.

Tremblay, Jean-Marie, Mark D. Regnerus, Sociologia D. A. Sistema Nacional D. E. Educação, Et Al. 2024. "Ssgi 2024 Survei Status Gizi Indonesia." In *Educacao E Sociedade*, Vol. 1. No. 1.

Ulker, Mutlu Tuce, Aysegul Simsek, Gizem Elvan Hacioglu, Aysu Kurt, Serra Erken, And Beyza Yildiz. 2024. "Growth And Development Impact Of Sustainable Nutrition Education: An Experimental Study." *Journal Of Food Science* 89 (2). Https://Doi.Org/10.1111/1750-3841.16891.

Unicef. 2024. "Landscape Analysis Of Overweight And Obesity In Indonesia." *United Nations Children's Fund*.

Uribe, Fabio Alexis Rincón, Rejane Célia De Souza Godinho, Marcos Antonio Santos Machado, Et Al. 2021. "Health Knowledge, Health Behaviors And Attitudes During Pandemic Emergencies: A Systematic Review." In *Plos One*, Vol. 16. No. 9 September. Https://Doi.Org/10.1371/Journal.Pone.0256731.

Who, And Unicef. 2024. "Indonesia: Who And Unicef Estimates Of Immunization Coverage: 2022 Revision." *Who And Unicef*.