



Integration of Scientific and Hadith Perspectives on Zamzam Water: An Integrative and Analytical Literature Review

Nazmatullail Azis Sengaji

Universitas Muhammadiyah Malang

Corresponding Author: Nazmatullail Azis: Nazmaallailsengaji17@gmail.com

ARTICLE INFO

Keywords: Zamzam Water, Integrative Literature Review, Hadith, Health, Science-Religion Integration

Received : 20, October

Revised : 25, November

Accepted: 26, December

©2025 Sengaji (s): This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This study aims to examine the benefits of Zamzam water from a scientific and religious perspective through an integrative literature review. Unlike previous descriptive studies, this study combines scientific data on mineral content, modern health research findings, and a critical analysis of hadith within a single conceptual framework. Data were obtained from international and national scientific journals, clinical studies, hadith books, and classical literature on the history of Zamzam. The analysis was conducted through a thematic synthesis process and a methodological evaluation of previous research. The results indicate that the benefits of Zamzam water can be scientifically explained by its alkaline mineral content, fluoride, calcium, magnesium, and sodium, as well as biological components that support the immune system, bone health, metabolic stability, and anticancer potential. These findings align with the Prophetic tradition, which states that Zamzam water is beneficial according to the intention of the drinker. This article introduces a new conceptual model, the Integrated Zamzam Benefit Framework (IZBF), which maps the relationship between spiritual, biological, and clinical dimensions. The study concludes that the integration of science and revelation provides a more comprehensive understanding of the benefits of Zamzam water and emphasizes the importance of a multidisciplinary perspective in contemporary Islamic studies.

INTRODUCTION

Zamzam water is a sacred water that holds high spiritual value in Islamic teachings. The well is located near the Ka'bah in the holy city of Makkah and is believed to have originated from a miracle granted by Allah SWT to Hajar, the wife of Prophet Ibrahim (AS), and their son, Prophet Ismail (AS). According to Islamic historical narratives, when Prophet Ibrahim left his family in the desert by Allah's command, they eventually ran out of water. In a state of desperation, Hajar ran back and forth between Safa and Marwah seven times in search of water. After the seventh run, by Allah's permission, a spring emerged from the footsteps of the infant Prophet Ismail. This spring later became known as Zamzam. During the time of Prophet Ismail, the spring eventually dried up and was later rediscovered and excavated by Abdul Muttalib—the grandfather of Prophet Muhammad (SAW)—based on a dream he received. Since then, the Zamzam well has continued to flow and has remained a source of water consumed by humanity to this day (Munawaroh et al., 2024).

Zamzam water is believed to have various health benefits (Munawaroh et al., 2024). As stated in a hadith recorded by Ahmad in his *Musnad* (Hadith no. 7637):

“Affan narrated to us, Hammam narrated to us, Abu Jamrah reported: I was protecting Ibn Abbas's mother from the people, and I was detained for several days. She asked, 'What has detained you?' I replied, 'Fever.' She said, 'Indeed, the Messenger of Allah (peace be upon him) said: Fever is from the heat of Hellfire, so cool it with Zamzam water.'”

Zamzam water is estimated to have been used as early as 4,000 years ago by Arab tribes in the region. Since the advent of Islam, various therapeutic practices have emerged, one of which involves the consumption of Zamzam water. Due to hadiths describing it as a remedy for various illnesses, many people have consumed Zamzam water for religious and health purposes since the seventh century. Today, millions of people consume Zamzam water daily (Muhammad Daffa, 2021). Zamzam water is believed to possess numerous miraculous properties and benefits. Muslims regard Zamzam water as sacred and frequently use it as a healing medium believed to cure various diseases (Munawaroh et al., 2024).

Zamzam water is considered the purest and best water on the surface of the Earth. It contains various elements, including positive and negative ions. The multi-element and hydrochemical composition of Zamzam water consists of 34 elements, among which calcium (Ca), magnesium (Mg), sodium (Na), and chloride (Cl) are present in the highest concentrations. Elements such as antimony (Sb), beryllium (Be), bismuth (Bi), bromine (Br), cobalt (Co), iodine (I), and molybdenum (Mo) are present at concentrations below 0.01 ppm. Chromium (Cr), manganese (Mn), and titanium (Ti) have also been detected in Zamzam water (Dwi Putri). Zamzam water is classified as alkaline mineral water, free from heavy metal contamination, and safe for consumption. Its mineral and nutritional content provides promising therapeutic potential. The exceptional mineral composition of Zamzam water is believed to offer various functional and

nutraceutical benefits, working synergistically with other elements to produce positive effects on the human body (Bhardwaj, 2023).

Advances in health science have demonstrated that Zamzam water offers numerous benefits, including strengthening the immune system (Hussein et al., 2025), helping to overcome osteoporosis (Nabila Zulfritria et al., 2022), diabetes, and hypertension (Boshra et al., 2021), addressing dental problems and cancer, and even benefiting agricultural applications (Khalid et al., 2014). These scientifically proven benefits of Zamzam water align with the aforementioned hadith of the Prophet Muhammad (peace be upon him). Such findings also affirm the greatness of Allah as the Creator and serve as a means to strengthen the faith of Muslims. Therefore, this study aims to examine the correlation between scientific and religious perspectives regarding the health benefits of Zamzam water.

RESEARCH METHOD

This study employs a descriptive qualitative approach using a library research method (Arianto, 2020), which involves a series of activities such as collecting data, reading, and analyzing research materials without conducting direct fieldwork (Rahayu Ningsih & Wiryosutomo, 2022). The data sources were obtained from relevant literature, including books, scientific articles, and journals related to the selected topic (Nurlatifah et al., 2020).

The analysis was conducted in three stages. First, data collection, which involved gathering data through a literature review concerning the integration of faith, culture, and technology in Islamic education management. Second, data reduction, which included in-depth analysis, classification, and organization of the data to facilitate further analysis. Third, data presentation, which involved reviewing the reduced data, conducting comprehensive analysis, and drawing conclusions to achieve the research objectives (Fatha Pringgar & Sujatmiko, 2020).

This approach was applied to develop a theoretical model that can serve as a foundation for policy development and the practice of Islamic education management in the era of globalization.

THEORETICAL FRAMEWORK

Zamzam Water in the Qur'an and Hadith

Zamzam water is located to the east of the Ka'bah in Makkah, Saudi Arabia. Millions of Saudi citizens and foreign residents use Zamzam water as their primary source of drinking water. In addition, millions of Hajj and Umrah pilgrims who visit Saudi Arabia each year bring Zamzam water home as a gift for their relatives. According to Islamic history, when Prophet Ismail (AS) was still an infant, his mother, Siti Hajar, walked across the barren land of Arabia in search of water for her thirsty child. Siti Hajar ran continuously between Mount Safa and Mount Marwah seven times. By Allah's permission, the foot of Prophet Ismail struck the ground and caused a spring of water to gush forth, which is now known as Zamzam water. This spring has never dried up and continues to

flow to this day (Hussein et al., 2025). This story is referenced in the Qur'an, Surah Ibrahim verse 37:

"And remember when Abraham said, 'Our Lord, indeed I have settled some of my descendants in an uncultivated valley near Your Sacred House (the Ka'bah).'"

Several hadiths describe the benefits of Zamzam water. First, a hadith narrated by Ibn Majah in his *Musnad* (No. 3053) states (Munawaroh et al., 2024):

"Hisham bin Ammar narrated to us; Al-Walid bin Muslim narrated to us; Abdullah bin Mu'ammal said that he heard Abu Az-Zubair say: I heard Jabir bin Abdullah (may Allah be pleased with him) say: I heard the Messenger of Allah (peace be upon him) say: 'Zamzam water is for whatever purpose it is drunk.'"

Second, a hadith narrated by Ahmad in his *Musnad* (No. 7637) states:

"Affan narrated to us; Hammam narrated to us; Abu Jamrah reported: I was protecting the mother of Ibn Abbas from the people, and I was detained for several days. She asked, 'What detained you?' I replied, 'Fever.' She said: Indeed, the Messenger of Allah (peace be upon him) said: 'Fever is from the heat of Hellfire, so cool it with Zamzam water.'"

From these narrations, the hadith perspective on the benefits of Zamzam water not only provides a religious dimension but also opens space for scientific interpretation. The hadiths concerning Zamzam may be understood as holistic health guidance that integrates spiritual, psychological, and biological aspects. When combined with modern scientific findings, these hadiths contribute to a comprehensive understanding that the benefits of Zamzam water operate through a synergy between its physical composition and its accompanying spiritual dimensions.

Zamzam Water in Scientific Studies

Zamzam water possesses highly distinctive chemical characteristics compared to ordinary mineral water. Numerous studies report that the mineral content of Zamzam water is more stable and consistent and exhibits ion ratios that produce important physiological effects on the human body. The relatively high sodium content explains its slightly salty taste, while the balanced levels of calcium and magnesium support bone health and cellular metabolic processes.

Zamzam water is regarded as sacred and as one of the finest waters on the surface of the Earth. It contains numerous elements, including both positive and negative ions. The multi-element and hydrochemical composition of Zamzam water consists of 34 elements, among which calcium (Ca), magnesium (Mg), sodium (Na), and chloride (Cl) are present at the highest concentrations. Elements such as antimony (Sb), beryllium (Be), bismuth (Bi), bromine (Br), cobalt (Co), iodine (I), and molybdenum (Mo) are present at concentrations below 0.01 ppm. Chromium (Cr), manganese (Mn), and titanium (Ti) have also been detected in Zamzam water (Dwi Putri). Zamzam water is classified as alkaline mineral water, free from heavy metal contamination, and safe for consumption. Its mineral and nutritional composition provides promising therapeutic potential. The exceptional mineral profile of Zamzam water is believed to offer various functional and nutraceutical benefits that work

synergistically with other elements to produce positive effects on the human body (Bhardwaj, 2023).

Advances in health science have demonstrated that Zamzam water provides numerous benefits, including:

a) Prevention of osteoporosis (Nabila Zulfritria et al., 2022).

In general, osteoporosis can be prevented by adequate intake of vitamin D, calcium, magnesium, fluoride, and phosphate, as well as by avoiding smoking and alcohol consumption. Zamzam water contains nutrients such as calcium, magnesium, fluoride, and phosphate, which help reduce the risk of osteoporosis and bone fractures.

b) Diabetes and hypertension (Nabila Zulfritria et al., 2022).

Several studies have found that the consumption of Zamzam water influences reductions in blood glucose levels, improves insulin sensitivity, and stabilizes lipid metabolism. These effects were observed in studies comparing intervention groups consuming Zamzam water with control groups consuming regular water. Zamzam water has also been reported to influence blood pressure physiologically and enhance parasympathetic activity, potentially stabilizing heart rhythm in certain individuals. This mechanism is related to the electrolyte balance present in Zamzam water. The use of Zamzam water as a therapeutic intervention for hypertensive patients has shown significant changes in levels of high-density lipoprotein (HDL) and low-density lipoprotein (LDL). Drinking Zamzam water resulted in significant increases in systolic and diastolic blood pressure, heart rate, and mean arterial pressure. Researchers also reported that Zamzam water significantly increased parasympathetic activity without affecting sympathetic cardiac activity. Another study examining the effects of Zamzam water on insulin and cholesterol levels in experimental rats—by providing either tap water or Zamzam water as the sole fluid source—concluded that consuming Zamzam water for ten weeks reduced fasting blood glucose levels, blood insulin levels, and insulin resistance. However, Zamzam water did not affect lipid profiles, redox balance, or body composition.

c) Dental health (Khalid et al., 2014).

A comparative study between Zamzam water and other water sources on the prevalence and severity of dental caries among female students was conducted by Al-Zuhair and Khounghanian. Clinical examinations showed that in permanent teeth, the lowest mean DMFT score (decayed, missing, and filled teeth) was found among children who consumed Zamzam water. The relatively high fluoride content of Zamzam water significantly contributes to enamel strengthening. Studies involving student populations indicate that individuals who regularly drink or rinse with Zamzam water exhibit lower caries prevalence compared to those using regular water. Fluoride promotes enamel remineralization and inhibits the activity of cariogenic bacteria, largely due to the high fluoride concentration present in Zamzam water.

d) Cancer (Khalid et al., 2014).

Zamzam water exhibits unique oncolytic (cancer-cell-destroying) properties and strong anti-inflammatory effects. These oncolytic effects operate indirectly through influences on the endocrine immune system and body growth

mechanisms. Zamzam water directly affects lymphocyte populations in the large intestine, which in turn influences tumor formation through specific immune mechanisms, leading to reduced tumor size. Regular consumption of Zamzam water has also been shown to increase levels of Bikunin, Lunasin, and Bowman-Birk Inhibitor, which are biological markers with cancer-preventive (oncopreventive) properties. Certain biological components inhibit cancer cell proliferation and strengthen immune cells such as lymphocytes. Furthermore, the increased presence of biomolecules such as Lunasin and Bowman-Birk Inhibitor associated with Zamzam water consumption supports the argument that this water has potential as a cancer-preventive agent.

e) Agricultural benefits (Khalid et al., 2014).

In agriculture, Zamzam water has been shown to accelerate seed germination, increase plant biomass, and enhance protein and antioxidant content. This indicates that Zamzam water not only affects human health but also possesses chemical characteristics that support the growth of other organisms. A research team from Egypt investigated the effects of different water types on growth parameters of wheat and fava bean plants. The results demonstrated that irrigation with Zamzam water produced significant increases in seed germination percentage, shoot length, and both fresh and dry shoot weight. The study concluded that plants irrigated with Zamzam water achieved the highest values in crop yield, soluble carbohydrates, total carbohydrates, protein content, and total nitrogen content. Irrigation with Zamzam water also increased protein, RNA, DNA, total phenolic compounds, and antioxidant levels in plant seedlings.

Overall, modern scientific research reinforces the claims found in hadith regarding the benefits of Zamzam water. Although some of these benefits still require further large-scale studies, initial evidence suggests that the unique mineral composition and alkaline properties of Zamzam water play an important role in producing significant health effects.

DISCUSSION

Correlation between Islamic Teachings and Scientific Findings

Zamzam water is regarded as a miracle from Allah that provides various health benefits, as explained in the hadiths of the Prophet Muhammad (peace be upon him) mentioned above, which state that Zamzam water can relieve fever and various illnesses when consumed with sincere intention. Zamzam water is estimated to have been used as early as 4,000 years ago by Arab tribes in the region as a form of treatment, initiated with prayer as an expression of faith that all diseases and their cures come from Allah (Gerung Muhammad Daffa Murtadho, 2021).

The benefits of Zamzam water are supported by scientific studies discussed previously. The exceptional mineral composition of Zamzam water is believed to provide various functional and nutraceutical benefits that work synergistically with other elements to produce positive effects on the human body. Research has demonstrated that Zamzam water can strengthen the immune system, help manage diabetes and hypertension, improve dental health, exhibit anticancer potential, and even offer benefits in agriculture.

The correlation between Islamic teachings and scientific studies on the benefits of Zamzam water demonstrates that this divine miracle provides profound benefits for the health of Allah's creation. Scientific evidence also affirms the Qur'an and hadith as comprehensive guidelines for human life. Consequently, studying and understanding these teachings can enhance faith and devotion to Allah.

An Integrative Perspective: Faith and Science

In essence, Islam and science are inseparable components of human life in this world. Through the pursuit of scientific knowledge, humans receive guidance from Allah and endeavor to explore the natural world. Ideally, Muslims who firmly adhere to Islamic teachings will achieve clarity and success in their intellectual pursuits (Muslih et al., 2022).

Nur Cholis Madjid, in his discussion on religious moderation, introduced the concept of the *idea of progress*, which refers to an open mental attitude that accepts and adopts knowledge from any source, as long as it contains truth and is not limited by group affiliations or other differences. This knowledge is then critically evaluated to determine objective truth (Madjid, 1998).

In line with this perspective, Muslim scholar Hamid Fahmy Zarkasy emphasized the Qur'an as a source of knowledge, arguing that intellectual traditions emerged from the content of the Qur'an itself, which stimulated the Prophet's companions to think critically and reflectively (Muslih et al., 2022).

These perspectives indicate that Muslims are encouraged to seek knowledge wherever it may be found, with the aim of recognizing the wonders of nature as signs of Allah's greatness. When studied properly, scientific knowledge can strengthen faith. As demonstrated in the discussion of Zamzam water's health benefits, scientific inquiry affirms Qur'anic and prophetic teachings that Zamzam water can serve as a remedy for various diseases. This demonstrates that harmony between religious values and scientific knowledge can advance scholarly understanding while simultaneously strengthening faith and devotion to Allah.

This integration is conceptualized in the **Integrated Zamzam Benefit Framework (IZBF)**, a multidisciplinary conceptual model that maps the relationship between the spiritual, chemical, biological, and clinical dimensions of Zamzam water. Through this approach, the benefits of Zamzam are understood not partially, but as a holistic phenomenon encompassing both physical and metaphysical aspects.

Spiritual Dimension: Intention, Prayer, and Blessing

The spiritual dimension of the IZBF originates from the hadith stating that "Zamzam water is for whatever purpose it is drunk." Intention, expectation, and belief form the foundational elements influencing an individual's experience when consuming Zamzam water. In modern scientific discourse, this spiritual aspect may be linked to concepts such as faith-based healing and psychoneuroimmunology, which demonstrate that belief systems and emotional states influence immune function, the nervous system, and hormonal regulation. Therefore, the benefits of Zamzam water lie not only in its physical substance but also in the spiritual intention accompanying its consumption. The integration of

intention and physical intake transforms the act of drinking Zamzam into a ritual with both psychological and physiological implications.

Chemical Dimension: Minerals, pH, and Alkaline Properties

The chemical dimension focuses on the unique physical composition of Zamzam water. Numerous studies indicate that Zamzam water contains minerals such as calcium, magnesium, sodium, fluoride, and various trace elements at concentrations distinct from ordinary mineral water. It is also alkaline in nature, with a relatively high pH level. These characteristics provide a scientific basis for Zamzam's benefits, including enhanced metabolism, support for bone health, and protection against oxidative stress. This chemical composition complements the spiritual dimension by offering an objective explanation for Zamzam's health effects.

Biological Dimension: Cellular and Immune Mechanisms

The biological dimension of the IZBF links the chemical composition of Zamzam water to physiological responses in the human body. The minerals it contains play essential roles in physiological processes such as enzyme activation, cellular metabolism, antioxidant activity, immune system enhancement, electrolyte balance regulation, and tissue repair. Modern research also indicates potential antitumor activity and immune system enhancement resulting from Zamzam consumption. Thus, the biological benefits of Zamzam water can be explained through observable and measurable cellular mechanisms.

Clinical Dimension: Measurable Health Outcomes

The clinical dimension highlights empirical research findings demonstrating various positive health effects of Zamzam water. Reported clinical benefits include immune system enhancement, blood glucose regulation, improved oral health through enamel remineralization, potential inhibition of tumor cell growth, blood pressure regulation, and increased physical vitality. These clinical findings reinforce the understanding that the benefits of Zamzam water are not merely traditional beliefs, but are supported by empirically verifiable medical evidence.

CONCLUSION

Zamzam water represents one of the miracles of Allah SWT that offers numerous health benefits, as conveyed in the hadiths of the Prophet Muhammad (peace be upon him). When consumed with sincere intention, Zamzam water is believed to serve as a remedy for various diseases. This uniqueness is not only upheld through spiritual belief but has also been substantiated by scientific research. Its rich mineral composition provides remarkable nutraceutical and functional benefits, ranging from immune system strengthening and diabetes and hypertension management to cancer prevention and improvements in agricultural productivity.

This study demonstrates that when scientific knowledge and divine revelation operate synergistically, they not only expand scientific understanding but also reinforce faith. The study of Zamzam water serves as clear evidence that religious values and scientific inquiry mutually reinforce one another in fostering a comprehensive and profound understanding of the greatness of Allah SWT.

REFERENS

- Bhardwaj, V. (2023). "Sacred Zamzam Water: Metallic Profile and Health Benefits." *Biomedical Journal of Scientific & Technical Research*, 53(1), 44222–44227. <https://doi.org/10.26717/bjstr.2023.53.008333>
- Boshra, A. Y., Mariod, A. A., Ali Massad, F. A., Abdalrhman, E. M., Abbas, S. M., Hassan, A. A., Mahamedan, M. M., Elatta, N. M. A., Masaad, H. K. A., Hamid, A. M., & Fadlalmola, H. A. (2021). Composition, hydrology, and health benefits of Zamzam water. *Bionatura*, 6(4), 2326–2330. <https://doi.org/10.21931/RB/2021.06.04.30>
- Gerung Muhammad Daffa Murtadho. (2021). *Pengaruh Air Zamzam Terhadap Kesehatan Dari Perspektif Ilmiah Dan Agama: Literature Review*. [https://repository.uinjkt.ac.id/dspace/bitstream/123456789/64328/1/11181330000055_MUHAMMAD_DAFFA_MURTADHO_GERUNG - 18-055-M.Daffa Murtadho.pdf](https://repository.uinjkt.ac.id/dspace/bitstream/123456789/64328/1/11181330000055_MUHAMMAD_DAFFA_MURTADHO_GERUNG_-_18-055-M.Daffa_Murtadho.pdf)
- Hussein, E. A. F., Rawwash, A. A., Mohammed, A. M. yehia, F.F, B. M., Negm, S. H. I., Mushtaq, A., Shaikh, T. I., & Parveen, R. (2025). The Chemical Composition , Therapeutic Benefits , and Safety of Zamzam Water : A Systematic Review. *European Journal of Ecology, Biology and Agriculture*, 2. [https://doi.org/10.59324/ejeba.2025.2\(2\).08](https://doi.org/10.59324/ejeba.2025.2(2).08)
- Khalid, N., Ahmad, A., Khalid, S., Ahmed, A., & Irfan, M. (2014). Mineral composition and health functionality of Zamzam water: A review. *International Journal of Food Properties*, 17(3), 661–677. <https://doi.org/10.1080/10942912.2012.660721>
- Madjid, N. (1998). *Islam Doktrin dan Peradaban: Sebuah Telaah Kritis tentang Keimanan, Kemanusiaan, dan Kemodernan*. 575.
- Munawaroh, R., Hamdiyah, J., Afita, S., Ningsih, R., & Fitriyah, A. W. (2024). *Air Zam-Zam dalam Perspektif Hadits dan Sains*. 3.

Muslih, M., Wahyudi, H., & Kusuma, A. R. (2022). Integrasi Ilmu dan Agama menurut Syed Muhammad Naquib al-Attas dan Ian G Barbour. *Jurnal Penelitian Medan Agama*, 13(1), 20. <https://doi.org/10.58836/jpma.v13i1.11740>

Nabila Zulfitria, I., Sari Dewi, A., Nurmadilla, N., Faisal Syamsu, R., & Khalid, N. (2022). Fakumi medical journal. *Jurnal Mahasiswa Kedokteran*, 2(5), 359–367. <https://doi.org/https://doi.org/10.33096/fmj.v5i1>