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Islamic Dietary Practices and Metabolic Health: A Correlational Study of Eating Behavior and Metabolic Parameters

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Abstract

Islamic dietary principles emphasize the consumption of halal and *thayyib* food, moderation, regular eating patterns, voluntary fasting, and proper dietary etiquette, which may contribute to healthier lifestyles and metabolic well-being. This study aimed to examine the relationship between Islamic dietary practices and metabolic health indicators and explore the underlying factors influencing respondents' eating behaviors. An explanatory sequential mixed methods design was employed, beginning with a quantitative phase followed by a qualitative investigation. Quantitative data were collected through questionnaires assessing Islamic dietary practices and clinical examinations measuring blood pressure, total cholesterol, uric acid, and blood glucose levels. Statistical analyses were conducted to identify patterns of dietary behavior and associations with metabolic parameters. Subsequently, qualitative data were obtained through in-depth interviews to explore respondents' experiences, perceptions, and factors influencing the implementation of Islamic dietary principles. Quantitative findings indicated that respondents generally demonstrated consistent adherence to food permissibility, hygiene, and Islamic dietary etiquette, whereas moderation, regular eating patterns, and voluntary fasting were less consistently practiced. Clinical assessments identified elevated blood pressure, cholesterol, and uric acid levels among some respondents, while most participants had normal blood glucose levels. The qualitative phase further explored the religious, behavioral, and lifestyle factors underlying these findings. The integration of quantitative and qualitative findings provides a comprehensive understanding of Islamic dietary practices and their potential relationship with metabolic health. This study highlights the importance of integrating Islamic dietary principles into health education strategies to encourage balanced eating behaviors and promote metabolic health within Muslim communities.

Keywords: Diet; islamic perspective; health; metabolic parameters

1. Introduction

Health is a fundamental aspect of human life, encompassing physical, mental, and spiritual well-being. Maintaining health is not merely concerned with medical treatment when an individual becomes ill but also involves preventive measures through the consistent adoption of healthy lifestyle practices. An individual's health status is influenced by various

factors, including daily behaviors, dietary patterns, physical activity, sleep quality, psychological conditions, and the surrounding social environment. Changes in lifestyle and increasingly diverse dietary patterns have raised concerns about various health problems, particularly non-communicable diseases and metabolic disorders. In this context, health should not be understood solely as the absence of disease but also as a state of balance involving physical, mental, and spiritual dimensions (Koenig, 2015).

Lifestyle is an important determinant of individual health, particularly through dietary behavior and physical activity. Unbalanced dietary consumption, excessive food intake, irregular eating patterns, and insufficient physical activity may be associated with an increased risk of metabolic disorders. Several indicators are commonly used to assess metabolic health, including blood pressure, cholesterol levels, uric acid levels, and blood glucose levels. Abnormalities in these indicators may contribute to the risk of various chronic diseases, including hypertension, cardiovascular disease, and diabetes mellitus. Therefore, adopting healthy, balanced, and regular dietary patterns is an essential component of maintaining metabolic health. In addition to nutritional composition, dietary practices should also consider food quality, hygiene, consumption quantity, and regularity of eating patterns.

Islam, as a religion that provides comprehensive guidance for human life, regards health preservation as part of humanity's responsibility to safeguard the trust bestowed by Allah SWT. This principle is reflected in Islamic teachings concerning the consumption of halal and *thayyib* food, as emphasized in Surah Al-Baqarah, verse 168. The concept of halal concerns not only the permissibility of food according to Islamic law but also needs to be accompanied by the principle of *thayyib*, which encompasses goodness, cleanliness, safety, and benefits for the body. Furthermore, Islam emphasizes moderation in food consumption and prohibits excessive behavior, as stated in Surah Al-A'raf, verse 31. These teachings demonstrate that dietary behavior from an Islamic perspective is not merely intended to fulfill biological needs but also reflects spiritual responsibility and ethical considerations in maintaining health. Islamic dietary principles also encompass regular eating patterns, recommended voluntary fasting, and proper dietary etiquette, which promote awareness, simplicity, and self-control in food consumption. Accordingly, an Islamic diet can be understood as an approach to dietary behavior that integrates religious values, health considerations, and character development.

Several previous studies have examined the relationship between Islamic teachings, dietary patterns, and health. Kusumawardani and Yuliana (2020), through a correlational study employing a cross-sectional design, investigated the relationship between healthy eating patterns based on Islamic principles and obesity prevention among residents of Kampung Gebang. Their study provided insights into the implementation of healthy dietary practices from an Islamic perspective; however, it did not comprehensively incorporate metabolic biomarker examinations to assess respondents' health conditions. Ria (2022), through a literature review on healthy lifestyles according to the Qur'an, explained that the Islamic concept of health encompasses both physical and spiritual dimensions. Meanwhile,

Amaliah and Muhajirin (2023) examined the relevance of the Prophet Muhammad's dietary practices to modern dietary principles and identified similarities between Islamic dietary values and contemporary healthy eating concepts. Although these studies provide important conceptual foundations, they have not fully explained the relationship between the implementation of Islamic dietary principles, metabolic health conditions based on clinical examinations, and the factors influencing dietary behavior in everyday life.

Based on the development of previous research, a research gap remains in integrating Islamic dietary principles with the measurement of metabolic health indicators and an in-depth exploration of dietary behavior. Research on Islamic diets should not be limited to explaining the compatibility between religious teachings and modern nutritional concepts but should also examine how these principles are implemented in people's daily lives and how their implementation is associated with clinically measurable health conditions. Furthermore, the inconsistent implementation of several Islamic dietary principles, particularly dietary moderation, regular eating patterns, and voluntary fasting, raises questions regarding the religious, knowledge-related, behavioral, and social factors influencing these practices. Therefore, a research approach is needed that not only provides quantitative findings on dietary practices and metabolic parameters but also explores individuals' experiences, understanding, and the underlying factors shaping their eating behaviors.

To address this research gap, this study employs a mixed methods approach using an explanatory sequential design, beginning with the collection and analysis of quantitative data, followed by qualitative exploration to further examine and explain the quantitative findings. The quantitative phase involves assessing the implementation of Islamic dietary principles through questionnaires and examining metabolic health parameters, including blood pressure, cholesterol, uric acid, and blood glucose levels. Subsequently, the qualitative phase explores respondents' experiences, perceptions, religious understanding, and the factors influencing the implementation of Islamic dietary principles in their daily lives. This study aims to analyze the relationship between Islamic dietary practices and metabolic health indicators, as well as to explore the factors influencing their implementation. By integrating both research approaches, this study is expected to provide a more comprehensive understanding of Islamic dietary practices as an approach to healthy lifestyle behavior and serve as a foundation for developing health education strategies grounded in Islamic values within Muslim communities.

2. Methods

This study employed an explanatory sequential mixed methods design, in which quantitative data were collected and analyzed first, followed by qualitative data collection to explain the quantitative findings (Creswell & Plano Clark, 2018). The study was conducted at one modern Islamic boarding school (pesantren modern) in Sidoarjo, Indonesia. A total of 20 respondents were recruited using a purposive sampling technique. Participants were selected based on the following criteria: (1) registered students or members of the pesantren

community; (2) willing to participate in the study; (3) able to complete the research questionnaire; and (4) willing to undergo the required clinical examinations. Purposive sampling was applied to select participants who met the research objectives and eligibility criteria (Etikan et al., 2016).

The quantitative data were collected through structured questionnaires and clinical examinations. The questionnaire assessed six dimensions of Islamic dietary practices: (1) halal food consumption, (2) *thayyib* food and food hygiene, (3) dietary moderation, (4) Sunnah fasting (Monday-Thursday), (5) voluntary fasting, and (6) Islamic dietary etiquette. Clinical examinations measured blood pressure, total cholesterol, uric acid, and blood glucose levels.

Quantitative data were analyzed using descriptive statistics to describe respondents' dietary practices and metabolic health indicators. Spearman's rank correlation was used to explore the relationships between Islamic dietary practices and metabolic health indicators, particularly when the data were ordinal or did not meet the assumptions of parametric analysis. The qualitative phase involved in-depth interviews with selected respondents based on the quantitative findings. Participants were purposively selected to represent relevant patterns in dietary practices and metabolic health indicators. The interviews explored respondents' understanding and experiences of Islamic dietary principles, food selection, eating habits, voluntary fasting, and factors influencing their dietary practices. Interview data were analyzed thematically by identifying recurring patterns and themes (Braun & Clarke, 2006).

Finally, the quantitative and qualitative findings were integrated to provide a more comprehensive understanding of Islamic dietary practices in relation to metabolic health. Ethical principles were maintained throughout the research process.

3. Results and Discussion

Islam emphasizes the principles of balance and purity in diet, which not only aim to meet physiological needs but also serve as a manifestation of faith and devotion to God. This concept is summarized in four main principles: halal (lawful), *thayyib* (good, clean, beneficial), moderation (not excessive), and regularity, as taught in the Qur'an and the Sunnah of the Prophet Muhammad (peace be upon him) (Ali et al., 2024).

The principle of halal relates to the halalness of food according to Islamic law, which is free from haram elements such as pork, alcohol, or carrion. However, halalness is insufficient without considering the *thayyib* aspect, which means food must be of good quality, hygienic, nutritious, and safe to consume. This aligns with Allah's word in Surah Al-Māidah: 87,*"O you who believe, do not forbid the good things that God has made lawful for you, and do not transgress the limits..."* This verse emphasizes that maintaining balance and moderation in consumption is a crucial principle in Islam. Non-halal foods—such as fastfood high in sugar and trans fats—can be harmful to the body and contradict Islamic values that prioritize the welfare and protection of life (Rahman et al., 2021).

In addition, Islam emphasizes moderation or not excessiveness (*israf*) in eating.

Prophet Muhammad SAW said, *"There is no worse vessel filled by a human being than his stomach. A few mouthfuls are enough for the son of Adam to keep his back straight. If he must eat more, then one-third for food, one-third for drink, and one-third for air (breathing)."*(Narrated by Tirmidhi). This hadith forms the basis for the principle of proportional food portioning, which is also recognized in modern principles of balanced nutrition. Contemporary studies show that overeating, particularly the consumption of high-calorie and ultra-processed foods, is a major risk factor for various metabolic diseases such as obesity, type 2 diabetes, and hypertension (Mariam, 2018; Chazelas et al., 2020).

Furthermore, Islam also emphasizes proper meal timings, including through the teaching of obligatory fasting (such as Ramadan) and recommended fasting (such as Monday-Thursday). In practice, fasting not only fosters spiritual self-control but also significantly impacts the body's metabolic system. A study by Faris et al. (2020) showed that Ramadan fasting, which is similar to the *intermittent fasting*, contributing to weight loss, improved lipid profiles, reduced blood glucose levels, and increased insulin sensitivity. Disciplined meal timing—meals that involve only eating at dawn and breaking the fast—can help synchronize the body's circadian rhythm, which is crucial for maintaining metabolic and hormonal health (Longo & Panda, 2016).

These four pillars—halal, *thayyib*, moderation, and regular mealtimes—reflect an Islamic dietary system that is not only compatible with, but often more advanced than, modern dietary approaches. Islam not only teaches *What* consumed, but also *How* and *When* the food is consumed. Healthy eating patterns The Islamic perspective emphasizes the individual's moral responsibility towards his or her body as a trust, as well as the close relationship between physical and spiritual health.

Thus, the Islamic diet provides an integrative approach to health, not only preventing physical illness, but also fostering spiritual and mental discipline that ultimately impacts the overall quality of life.

3.1 Results

This study examines the implementation of a healthy diet from an Islamic perspective and its impact on respondents' metabolic health. Data obtained through questionnaires and metabolic biomarker testing will be analyzed to reveal the relationship between halal, *thayyib*, and moderate eating behaviors, as well as regular mealtimes, and health indicators such as blood glucose, cholesterol, uric acid, and blood pressure levels.

The questionnaire data covered various aspects, such as respondents' daily eating habits, frequency of voluntary fasting, regular mealtimes, and the extent to which halal and *thayyib* principles were applied in their diets. Collecting this data through the questionnaire provides a preliminary overview of respondents' level of adherence to healthy eating patterns recommended by Islamic teachings.

Based on questionnaire data related to Islamic dietary indicators, the majority of respondents always ensure that the food they consume is halal, with 18 people stating that they always do so and only 2 people sometimes do it. In terms of choosing *thayyib* (clean

and nutritious) food, 17 respondents always pay attention to this aspect, while 3 respondents do it sometimes. Regarding moderation in eating according to the sunnah, 10 respondents always try not to overdo it, 6 people sometimes do it, 3 people rarely, and 1 person never. In terms of regularity of meal times, 9 people eat regularly every day, 5 people do it sometimes, 5 people rarely, and 1 person never does it. Regarding voluntary fasting (Monday-Thursday), only 3 respondents always observed it, 5 sometimes, 6 rarely, and 6 never. Meanwhile, regarding Islamic table manners, such as reciting prayers and sitting while eating, 15 respondents always observed them, 4 sometimes, and 1 rarely.

Table 1. Questionnaire results on Islamic eating patterns

Pattern Indicator	Islamic Eating Questionnaire Statements	Always	Sometimes	Rarely	Never
Halal	I always make sure the food I consume is halal	18	2	0	0
Thayyib (clean & nutritious)	I choose clean and nutritious food	17	3	0	0
Moderation (not excessive)	I try not to overeat	10	6	3	1
Regularity of meal times	I try not to eat excessively	9	5	5	1
Sunnah fasting (Monday-Thursday)	I regularly carry out sunnah fasting as part of my diet.	3	5	6	6
Eating etiquette	I eat by applying Islamic manners such as reciting prayers and sitting while eating.	15	4	1	0

In addition to questionnaire data, researchers also conducted baseline health examinations, including measurements of several important metabolic biomarkers: blood glucose, total cholesterol, uric acid, and blood pressure. These examinations were performed on all respondents before the healthy eating intervention began to obtain a baseline metabolic profile. This biomarker data is crucial for assessing whether there are significant changes following the implementation of an Islamic-based healthy eating pattern during the intervention period.

Table 2. Results of health examination of respondents

Parameter	Category	Number of Respondents
Blood Pressure	Normal	7
	Pre-Hypertension	4
	Hypertension	9
Cholesterol	Normal	8
	Height	12
Uric Acid	Normal	8
	Height	12
Blood Glucose	Normal	14
	Pre-Diabetes	6
	Diabetes	0

Based on the results of measurements of several health parameters in respondents, it was found that in terms of blood pressure, 7 people were in the normal category, 4 people had pre-hypertension, and 9 people were included in the hypertension category. For cholesterol levels, 8 respondents had normal cholesterol levels, while 12 people showed high cholesterol levels. In the uric acid parameter, there were 8 respondents with normal uric acid levels, and 12 others had high levels. Meanwhile, in the blood glucose examination, the majority of respondents, namely 14 people, were in the normal category, 6 people were in pre-diabetes, and no respondents were detected with diabetes.

The collected data will be analyzed in more depth using qualitative methods to examine the relationship between healthy eating behaviors based on Islamic teachings and changes in the body's metabolic state. Furthermore, qualitative analysis will be conducted to explore the motivations and barriers experienced by respondents in adopting this healthy eating pattern.

Therefore, these preliminary findings represent a crucial initial stage of the research, ensuring the validity and reliability of the data before drawing final conclusions. This research will continue with further data collection and comprehensive analysis to provide an accurate and in-depth picture of the impact of a healthy diet from an Islamic perspective on improving respondents' metabolic health.

3.2 Discussion

Islamic Diet as a Determining Factor of Health

Questionnaire data shows that the majority of respondents consistently implement several important aspects of an Islamic diet, particularly the halal aspects of food (18 respondents always ensure halal food) and cleanliness and nutrition (*thayyib*) (17 respondents always pay attention). These are the main foundations of an Islamic diet, which is expected to maintain health and quality of food consumption. In classic Islamic jurisprudence books such as *Al Mughni i*n the work of Ibn Qudamah, it is stated that the halal and cleanliness of food is not only related to legal aspects, but also plays an important role in maintaining the physical and spiritual health of a Muslim (Ibn Qudamah, 1997).

Furthermore, Islamic table manners were also quite high, with 15 respondents consistently following them, reflecting spiritual and psychological awareness in food consumption, which can indirectly support digestion and mental health. *Al-Adab Al-Mufrad* In Imam Bukhari's work, table manners such as reciting prayers before eating and eating with the right hand are taught as part of the sunnah which brings blessings and inner peace (Bukhari, 1990).

However, other aspects such as dietary moderation, regular mealtimes, and voluntary fasting are still implemented with varying degrees of variation, with fewer respondents consistently practicing them. Moderation in diet and regular mealtimes are important factors in maintaining a balanced calorie intake and body metabolism (WHO, 2020). This aligns with the recommendation in the Qur'an, Surah Al-A'raf, verse 31, which

emphasizes "...and do not be excessive..." as a guideline for moderation in eating. Voluntary fasting, as taught by the Prophet Muhammad (peace be upon him) in fasting on Mondays and Thursdays, is known to have detoxification benefits and improve metabolic health (Puchalska-Niedbał et al., 2020), as exemplified in the book of *Al-Muqaddimah Al-Hadramiyyah*.

Correlation with Health Parameters

Although most respondents paid attention to halal and food hygiene, health data showed that 9 respondents had hypertension and 4 pre-hypertension, meaning nearly half of the sample had above-normal blood pressure. This is likely related to the suboptimal implementation of dietary moderation and regular mealtimes, which were only consistently carried out by a small number of respondents (10 always moderated; 9 always ate regularly). Excessive intake, consumption of foods high in salt, and irregular eating patterns can trigger high blood pressure (Whelton et al., 2018). In Islamic jurisprudence, the concept of *i'tidal* (balance/moderation) also occurs in the context of eating and drinking to maintain physical health so that worship can run well (Ibnu Qudamah, 1997).

Twelve respondents had high cholesterol and 12 also had high uric acid levels. This is despite the fact that 17 respondents were already paying attention to clean and nutritious food (*thayyib*). This indicates that even though food choices are made consciously, the types of food consumed may still contain high levels of saturated fat or purines, or the portions may not be properly moderated. This further reinforces the importance of dietary moderation, which was consistently practiced by only 10 respondents (Mensink et al., 2016; Richette & Bardin, 2010). *Al-Majmu'* Imam Nawawi's work emphasizes the importance of keeping the body healthy as a mandate from Allah SWT so that a Muslim is obliged to pay attention to his food intake (Nawawi, 2005).

The majority of respondents (14 people) had normal blood glucose levels, with 6 people pre-diabetic and none diabetic. This could be positively correlated with the relatively good implementation of Islamic dietary practices in terms of halal and hygiene, as well as the majority of respondents' moderation in eating (although only partially). Inconsistent implementation of sunnah fasting could also be a factor in why more respondents did not show optimal glucose levels, as fasting can improve insulin sensitivity and metabolic health (Hartman et al., 2018). Fasting in Islam is not only a spiritual ritual but also a form of physical purification and maintaining health, as explained in *Al-Muwatta'* by Imam Malik (Anas, 2007).

Although most respondents paid attention to halal and food hygiene, nearly half experienced high or pre-hypertension, likely due to inadequate implementation of dietary moderation and regular meal patterns. Additionally, many respondents had high cholesterol and uric acid levels despite choosing clean and nutritious foods, highlighting the importance of proper portion control and food selection. On the other hand, the majority had normal blood glucose levels, possibly linked to partial adherence to Islamic dietary practices and

inconsistent observance of sunnah fasting. Overall, the narrative emphasizes the significance of moderation and balance in eating according to Islamic principles to maintain physical health as a part of fulfilling religious obligations.

4. Conclusion

A strong Islamic diet, which emphasizes the consumption of halal food and maintaining food hygiene, has been shown to have a positive impact on the health of respondents. This is evident in the majority of respondents who have blood sugar levels within normal limits, indicating that implementing the principles of a halal diet and food hygiene makes a significant contribution to maintaining a healthy balance. However, several challenges remain in consistently implementing a healthy diet, particularly related to portion control, meal timing, and voluntary fasting practices. Irregularity in maintaining a moderate diet and disciplined mealtimes was found to be a contributing factor to the high incidence of hypertension, high cholesterol, and increased uric acid levels in some respondents. This situation suggests that while spiritual aspects and good table manners can support awareness of the importance of a healthy diet, the practical aspects of daily diet management still require further attention and improvement. In other words, to achieve optimal health outcomes, a more comprehensive approach is needed that not only prioritizes religious values and spiritual awareness but also ensures consistent and planned implementation in daily dietary management. This improvement includes establishing a regular meal schedule, controlling portion sizes, and implementing appropriate fasting practices to support overall and sustainable health.

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