

Evaluating the effectiveness of 16/8 intermittent fasting strategy and developing general guidelines

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Abstract:

With the increasing incidence of obesity and related cardiometabolic disorders, dietary interventions have become a related research hotspot. The 16/8 intermittent fasting (IF) strategy, as one of the several dietary interventions, has attracted widespread attention for its potential benefits in weight management and cardiometabolic health. This study aims to evaluate the effectiveness of the 16/8 IF strategy in promoting weight loss and improving cardiometabolic health, while developing practical guidelines for the general population. The research used a mixed-methods approach, combining secondary research through a comprehensive review of existing literature on the 16/8 IF strategy with primary research from a food diary survey and a reflection questionnaire administered to volunteer participants. The results suggest that the 16/8 IF strategy is effective in reducing calorie intake and supporting weight loss. However, its effects on cardiometabolic markers such as insulin sensitivity, blood glucose levels, lipid profiles and blood pressure were inconsistent across studies. Primary research has shown variable adherence and highlighted common challenges such as unplanned snacking. While the 16/8 IF strategy is a viable alternative to continuous calorie restriction, its success depends on structured eating, individualized adherence strategies, and a balanced diet within the meal window. This project delivered guidelines for the general population to effectively implement the 16/8 IF strategy.

Keywords: 16/8 intermittent fasting, weight loss, cardiometabolic health, general guidelines

1. Introduction

In recent years, there has been a growing global quest for healthier lifestyles as individuals strive to manage their weight and improve their overall health. This trend is particularly relevant given the alarming rise in global obesity rates. According to the World Health Organization (WHO), the prevalence of obesity has more than doubled globally since 1990, with 2.5 billion adults classified as overweight by 2022, including over 890 million who were obese (World Health Organization, 2024). Obesity is a major risk factor for a range of serious health conditions, including type 2 diabetes, cardiovascular disease, and certain cancers, making effective weight management strategies more important than ever (Blüher, 2019; Chooi, Ding & Magkos, 2019).

One of the main approaches to weight management is dietary intervention, which has been shown to significantly influence body weight and metabolic health (Chair et al., 2022; Sukkriang & Buranapin, 2024; Dýnka, Paziewska, & Kowalcze, 2023). Among the various dietary strategies, intermittent fasting (IF) has gained widespread popularity, especially the 16/8 method. This strategy consists of an 8-hour eating window followed by a 16-hour fasting window and is often touted as an effective and sustainable method of weight loss. The underlying principle of intermittent fasting is to create a calorie deficit during the fasting window while allowing the body to enter a state of ketosis, which promotes fat burning.

Despite the growing adoption of the 16/8 IF strategy, there still remains a lack of understanding of its long-term effects and potential health risks. The widespread promotion of IF on social media often ignores these potential risks, leading many to adopt the strategy without fully understanding its implications. This gap in knowledge can lead to inappropriate implementation, reducing potential benefits and even posing health risks (Carter, Clifton & Keogh, 2018; Wilhelmi de Toledo et al., 2019).

Recognizing this knowledge gap, the purpose of this study is to evaluate the effectiveness of the 16/8 IF strategy not only in terms of weight loss, but also in markers of cardiometabolic health, such as blood glucose control, insulin sensitivity, cholesterol levels, and blood pressure. The study will use both primary and secondary research methods to develop practical guidelines for effective implementation of the 16/8 IF strategy. The primary research will involve data collection and analysis from a small group of volunteer participants who will maintain a food diary and complete a reflection questionnaire. The secondary research will include a comprehensive review of the existing literature on intermittent fasting and related health outcomes.

2. Literature Review

2.1 Concept of Weight Loss and Common Weight Loss Strategies

When energy expenditure exceeds intake, resulting in a negative energy balance, weight loss is achieved primarily by reducing body mass, especially fat stores (Casanova et al., 2019). Metabolic rate, physical activity, and dietary habits are important variables that affect this process. Reducing calorie intake isn't the only focus of sustainable weight loss, maintaining a good balance of nutrients is essential to support overall wellness.

Calorie restriction is a common weight loss strategy that entails maintaining a balanced diet

while reducing daily calorie intake (Rynders et al., 2019). Physical activity and dietary intervention are frequently combined to increase energy expenditure and support overall metabolic health (Swift et al., 2018). The 16/8 method of intermittent fasting (IF), which alternates between periods of eating and fasting, has recently gained attention as an alternative approach (Erdem et al., 2022). These methods are typically tailored to individual needs to optimize weight loss outcomes.

2.2 Definition of Cardiometabolic Health and the Key Markers Used to Measure it

Cardiometabolic health includes the interconnected risk factors that impact metabolic disorders, such as type 2 diseases and cardiovascular disease (CVD) (Schroder, 2021). This term refers to a group of vital health indicators that together assess an individual's risk of developing CVD and metabolic disease, including blood pressure, blood glucose, cholesterol levels, and insulin sensitivity (O'Hearn et al., 2022). These markers have predictive value for future health outcomes in addition to providing insights about an individual's current health conditions.

Preventing the emergence of cardiometabolic disease requires maintaining optimal levels of these indicators (Chair et al., 2022). To reduce long-term health concerns, early detection and intervention are essential. Regular monitoring and management of these markers can support this process. These markers offer a thorough evaluation of an individual's cardiometabolic health and are often employed in research and clinical contexts to assess the effectiveness of interventions meant to enhance health outcomes (Gabel et al., 2018; Moro et al., 2016). It is essential to comprehend and optimize these variables to lessen the impact of cardiometabolic disease on patients and healthcare systems.

2.3 Principles and Implementation Methods of

the 16/8 Intermittent Fasting Strategy

Fasting for 16 hours a day, followed by an 8-hour eating window, is the basic principle of 16/8 intermittent fasting (IF). Individuals abstain from all caloric foods and beverages during the fasting period, which promotes metabolic processes, including fat oxidation and autophagy, which contribute to weight loss and improves overall health (Domaszewski et al., 2023). The eating window helps to regulate total calorie intake without the need for strict calorie counting by permitting normal meals within a set time constraint.

Depending on personal preference, the 16/8 IF strategy can be implemented in various ways, but generally involves skipping either breakfast or dinner within the 8-hour eating window. By following the body's natural circadian rhythm, this approach can boost metabolic efficiency and lead to better overall health outcomes (McAllister et al., 2020). A balanced diet within the eating window is advised to optimize the benefits of fasting, although there are no strict dietary limitations. Moreover, the flexible eating schedule allows for social meals, which makes it easier to adhere to the 16/8 IF strategy (Liu et al., 2022).

2.4 Impact of the 16/8 IF Strategy on Metabolic Processes Related to Weight Loss and Cardiometabolic Health

Research has demonstrated that implementing the 16/8 IF strategy improves cardiometabolic health and aids in weight loss by positively affecting multiple metabolic processes (Chair et al., 2022; Moro et al., 2016). The body switches from relying on glucose as the primary energy source to using stored fat when the fasting period is extended to 16 hours, which increases fat oxidation and contributes to weight loss (Mattson et al., 2018). Furthermore, by lowering fasting insulin levels, the 16/8 IF strategy increases insulin sensitivity, which contributes to better glucose utilization and lowers the risk of insulin resistance and type 2 diabetes (Sukriang & Buranapin, 2024).

Additionally, the 16/8 IF strategy has been shown to improve lipid profiles, including lower triglycerides and LDL cholesterol, both of which are vital for cardiovascular health (Kord-Varkaneh et al., 2022). Fasting also supports overall cardiometabolic health by stimulating autophagy, a cellular process that eliminates damaged cells and reduces inflammation (Domaszewski et al., 2023). Although these benefits seem encouraging, the 16/8 IF strategy may cause different responses in different individuals, which emphasizes the significance of customizing the approach to each person's needs and tracking its effects over time.

2.5 Existing Studies on 16/8 IF Strategy

Numerous researchers have examined the effects of the 16/8 IF strategy on weight loss and cardiometabolic health in recent years, drawing significant attention to this approach (Chow et al., 2020; Gabel et al., 2018). The majority of existing studies have focused on the short-term effects of this dietary strategy, specifically on weight loss, insulin sensitivity, and overall metabolic well-being (Lowe et al., 2020; Dyńska, Paziewska & Kowalcze, 2023).

Concerns have been raised about the long-term effects of the 16/8 IF strategy on other aspects of health, although several studies have shown promising results for weight loss and cardiometabolic health (Herz et al., 2024). Although the short-term benefits have been noted, some researchers warn that even within the 16/8 framework, extended periods of fasting may pose health risks and challenges, including dizziness, palpitations, or difficulty following the regimen (Chair et al., 2022; Sukriang & Buranapin, 2024).

Moreover, the methods used in existing studies are often highly variable, with differences seen in participant demographics, fasting and eating windows, and mealtime dietary composition (Waldman et al., 2023; EL-SAYED et al., 2019). It is challenging to draw firm conclusions regarding the 16/8 IF strategy's overall effectiveness due to the variability in study design. In addition, a lack of knowledge exists on the long-term sustainability and health impacts of the 16/8 IF strategy due to the relatively short study duration of several of these studies (Domaszewski et al., 2023; McAllister et al., 2020).

2.6 Gaps in Existing Research

Yet, substantial gaps in knowledge that prevent a thorough understanding of the effectiveness and safety of the 16/8 IF strategy still remain despite the increasing amount of literature on the subject. The absence of comprehensive reviews that synthesize existing evidence and assess the overall effectiveness and safety of the 16/8 IF strategy is a critical gap that should be addressed. The current literature lacks a cohesive analysis that takes into account the different demographics, methodologies, and study outcomes, solely focusing on examining its benefits and potential risks. Such a review would serve to clarify the strategy's long-term impacts and identify areas where further research is needed.

Another obvious gap is the lack of general guidelines suited to healthy individuals who wish to adopt this strategy. There is a clear need for guidelines that are applicable to the broader population, as much research has focused on certain populations, such as those with obesity or metabolic syndrome. By following these guidelines, the 16/8

IF strategy could be safely and effectively incorporated into daily routines without adverse effects.

Addressing these gaps is imperative to advancing the understanding of the 16/8 IF strategy, particularly as it relates to developing comprehensive guidelines that maximize its potential benefits for weight loss and cardiometabolic health. Through a review of existing literature and offering recommendations that are broadly applicable to the general population, this study aims to support these efforts.

3. Methodology

3.1 Overview

This research used a combination of primary and secondary research methods. The secondary research involved a thorough review of existing literature, clinical trials, and scientific studies focusing on the 16/8 intermittent fasting (IF) strategy and its impact on both weight loss and cardiometabolic health outcomes. The primary research was conducted through a one-week food diary survey among a selected group of volunteer participants using convenience sampling. These participants were asked to complete a reflection questionnaire to assess their eating patterns and their willingness to adopt the 16/8 IF strategy after finishing their food diaries. The combination of both research methods allows for a comprehensive analysis of the 16/8 IF strategy, supported by both theoretical and practical data.

3.2 Secondary Research

The secondary research of this study aimed to gather both qualitative and quantitative data on the effectiveness of the 16/8 IF strategy in promoting weight loss, with a particular focus on calorie reduction and fat loss. In addition, this research sought to examine the impact of the strategy on key markers of cardiometabolic health, including blood glucose levels, cholesterol levels, blood pressure, and insulin sensitivity, while identifying potential risks and challenges associated with its implementation.

To achieve these objectives, the author conducted extensive searches in several academic databases, including Google Scholar, PubMed, and MDPI. Specific keywords such as “intermittent fasting”, “time-restricted feeding”, “weight loss”, and “cardiometabolic health”, along with their synonyms and related terms, were used to ensure a comprehensive and thorough literature search.

The literature included in this review was selected based on strict inclusion and exclusion criteria. Studies were included if they focused on human subjects, were peer-

viewed, and provided empirical data on the effects of the 16/8 IF strategy on weight loss or cardiometabolic health markers. Conversely, studies were excluded if they were outdated (published before 2014), lacked empirical evidence, or focused on fasting strategies other than the 16/8 method.

The CRAAP (Currency, Relevance, Authority, Accuracy, and Purpose) test was used to assess the reliability and relevance of the sources. This assessment ensured that the selected literature was current, authoritative, and directly relevant to the research questions. All selected articles and studies were meticulously documented in a reading log, which forms the basis of the literature review and supports the overall quality of the dissertation.

3.3 Primary Research

The primary research of this study was designed to identify patterns in participants' eating behavior, meal timing, and nutrient intake. Participants' reflections on their eating habits during the food diary period were evaluated to assess their openness to adopting the 16/8 intermittent fasting (IF) strategy and to identify any common concerns or perceived benefits. The primary data collected from food diaries and reflection questionnaires were then compared with secondary data from the literature review to validate findings and provide a comprehensive analysis.

3.3.1 Recruitment and Ethical Considerations

A small but diverse group of participants were recruited for this study, including the author's peers, family members, and some friends and colleagues of the author's parents, which ensured a range of ages, genders, and dietary habits were represented. Ethical considerations were carefully addressed by obtaining signed consent forms (see Appendix I) from all participants before the food diary survey.

3.3.2 Food Diary Survey

To analyze dietary patterns and nutrient intakes, the NHS food diary template (see Appendix II) was used to allow participants to standardize the recording of all foods and beverages consumed over a one-week period, including meal times, portion sizes, and any relevant notes regarding feelings of hunger or satiety. The food diary template facilitated consistent collection of dietary information, which is critical for data analysis.

Depending on participant preference, the food diaries were distributed in both electronic and paper format and were collected at the end of the one-week period. Of the 35 food diaries distributed, 28 were completed and returned. The data acquired was sufficiently representative of the sample group due to the high response rate of 80%.

5 of the returning food diaries, however, lacked enough details for further analysis. Consequently, these diaries were only included for validation processes in the reflection questionnaire. Content analysis was used to examine the remaining 23 food diaries, which had more comprehensive and detailed entries. The numerical data from these selected diaries was then utilized to identify patterns and behaviors that could affect the 16/8 IF strategy's adoption.

3.3.3 Reflection Questionnaire

A reflection questionnaire (see Appendix III) was developed using the online survey tool, Questionnaire Star, to gain deeper insights into the eating habits, health goals, and attitudes of participants toward the 16/8 IF strategy. The questionnaire consisted of 7 sections, each with a specific focus, and included 21 multiple-choice and 2 open-ended questions.

The reflection questionnaire was distributed on WeChat through a generated QR code after the food diaries were retrieved. Out of 28 given questionnaires, 26 were completed and returned. Thematic and cross-tabulation analysis of the responses allowed for the identification of eating habits and opinions of the 16/8 IF strategy.

4. Results

4.1 Secondary research

4.1.1 The Effectiveness of the 16/8 Intermittent Fasting Strategy in Promoting Weight Loss

The effectiveness of the 16/8 intermittent fasting (IF) strategy in promoting weight loss has been reported in a number of studies, primarily achieved through calorie reduction and fat loss, even without the need for continuous calorie counting during the meal window. This pattern has been observed in diverse populations, including obese individuals, people with type 2 diabetes, and physically active and healthy individuals.

Gabel et al. (2018) reported that obese adults following a 16/8 time-restricted feeding (TRF) protocol for 12 weeks experienced significant reductions in body weight ($-2.6\% \pm 0.5$) and energy intake (-341 ± 53 kcal/d) compared to a non-intervention historical control group, highlighting the effectiveness of this fasting method in inducing a calorie deficit. Similarly, Moro et al. (2016) found an improvement in lean mass-to-fat ratio in resistance-trained males following an 8-week 16/8 TRF regimen, with fat mass reduced by 16.4% compared to 2.8% in the normal diet group, while lean mass was maintained ($+0.86$ vs. $+0.64\%$), suggesting benefits beyond simple weight loss.

Moreover, a 6-week TRE intervention in overweight older adults aged 65-74 years also resulted in significant weight loss in both men (-1.8 kg) and women (-1.3 kg) in a study conducted by Domaszewski et al (2023), suggesting that TRE may be a feasible and effective dietary strategy for improving body composition and reducing body weight in overweight older adults.

However, while the 16/8 IF strategy is effective, it does not appear to be superior to continuous calorie or energy restriction (CER) in terms of weight loss outcomes. Rynders et al (2019) conducted a review of randomized trials and found that intermittent energy restriction regimens, including 16/8 IF, generally resulted in weight loss and fat loss comparable to continuous energy restriction approaches, with 9 of 11 studies showing no significant differences between the two dietary methods. Liu et al (2022) also evaluated the long-term efficacy of time-restricted eating (TRE) combined with calorie restriction compared with daily calorie restriction alone in patients with obesity over a 12-month period. The study found no significant difference in weight loss between the two groups (net difference, -1.8 kg; 95% CI, -4.0 to 0.4 ; $P=0.11$), further emphasizing that 16/8 IF may not offer substantial advantages over continuous calorie restriction alone. In addition, Lowe et al (2020) examined the effects of a 16/8 IF regimen compared to consistent meal timing on weight loss and metabolic parameters in overweight and obese individuals. No significant difference in weight loss was observed between the IF and consistent meal timing groups (-0.26 kg; 95% CI, -1.30 to 0.78 ; $P = .63$) during the 12-week intervention, suggesting that 16/8 IF is comparable to, but not necessarily superior to, other structured dietary approaches.

4.1.2 The Effects of the 16/8 Intermittent Fasting Strategy on Cardiometabolic Health Outcomes

The 16/8 intermittent fasting (IF) strategy has been extensively studied for its potential effects on several markers of cardiometabolic health, including insulin sensitivity, blood glucose levels, lipid profiles, and blood pressure. Improvements in these indicators were found in some research, while other studies suggested that the 16/8 IF strategy could not yield different results from other dietary treatments without fasting interventions. This conflicting evidence led to the remaining mixed effects.

Several studies have reported beneficial effects of the 16/8 IF strategy on blood glucose control and insulin sensitivity. For example, Moro et al (2016) found that resistance-trained males experienced significant reductions in fasting glucose levels and improvements in insulin sensitivity following an 8-week 16/8 IF regimen compared to an unrestricted control group. Similarly, a significant

decrease in glucose concentrations compared to baseline measurements was observed in middle-aged male cyclists following a 4-week 16/8 time-restricted eating (TRE) intervention (Waldman et al., 2023). In contrast, Gabel et al. (2018) found no significant differences in fasting glucose levels or insulin sensitivity between obese adults practicing 16/8 IF and those following a continuous eating pattern over a 12-week period, suggesting variability in the effectiveness of the strategy in different populations.

The effects of the 16/8 IF strategy on blood pressure are also inconclusive. McAllister et al (2020) reported reductions in systolic and diastolic blood pressure in physically active college-aged men following a 16/8 IF regimen for 6 weeks. Conversely, Schroder et al (2021) found no notable differences in blood pressure outcomes between obese IF participants and those on a standard diet after 8 weeks. In addition, Liu et al (2022) observed similar reductions in systolic and diastolic blood pressure in both groups of obese patients in a trial comparing time-restricted eating and daily calorie restriction over 12 months, highlighting the variability of outcomes in different study populations and settings.

Similar inconsistencies exist in the 16/8 IF strategy's effects on lipid profiles. Following a 3-week 16/8 IF intervention, decreases in triglycerides and LDL cholesterol in overweight and obese persons with prediabetes were reported (Chair et al, 2022). Similarly, Sukkriang and Buranapin (2024) observed that in obese individuals who fasted three days a week for three months, total cholesterol and LDL levels reduced significantly from baseline only in the 16/8 IF groups and more than in the control group. However, Lowe et al. (2020) conducted a 12-week randomized clinical trial and observed no significant differences in lipid levels between overweight or obese individuals who adhered to the 16/8 regimen and those who followed a conventional diet. These discrepancies imply that individual factors, including adherence and baseline health status, may influence how 16/8 IF affects lipid profiles.

Overall, while the 16/8 IF strategy may offer some cardiometabolic benefits, the mixed results across studies indicate that these effects may not be universally observed in all populations or settings.

4.2 Primary research

4.2.1 Analysis of Food Diaries (see Appendix IV for detailed analysis)

Nearly half of the participants (43%) adhered to a 10-hour eating window. A smaller subset (22%) maintained a more restricted eating window of 8 hours or less. Among those with an 8-hour eating window, all participants (100%)

skipped either one or two meals, favoring a high-carbohydrate, high-protein diet with low snacking frequency and good hydration levels.

Snacking was common among participants, with 74% reporting snacking in the afternoon, followed by 61% in the evening and 52% at night. Morning snacking was less common, reported by 26% of participants. A significant proportion of participants (57%) reported snacking every day of the week, while a smaller group (13%) reported no snacking at all. Interestingly, only 22% of participants had a set time for snacking, suggesting that most snacking was spontaneous rather than planned. In addition, a minority (17%) reported having flexible meal times, indicating a deviation from structured eating patterns.

Physical activity was reported by the majority of participants, with 74% exercising at least three days per week. However, 22% did not report or record any exercise during the food diary period. Notably, among those with an 8-hour eating window, there was variability in exercise behavior: 2 of the 5 participants reported no exercise during the week, while the other 3 were highly active, with 1 participant exercising 5 times per week and the other 2 exercising almost every day.

4.2.2 Reflection Questionnaire Results

Of the 26 participants who completed the questionnaire, 50% were female and 50% were male. Participants ranged in age from under 18 years to over 65 years. More than 92% of the participants reported no chronic diseases such as diabetes or hypertension.

The majority of participants (65%) reported eating three main meals per day, and 85% reported having fixed meal times. Snacking between meals was common, with 69% of participants reporting regular snacking. In addition, 73% of participants reported eating within a 10-hour window.

Better overall health was cited by 77% of participants as their primary health goal, while 38% wanted to lose weight. Most participants (73%) reported exercising as a method of achieving their health goals, and 65% said they had tried specific diets.

Approximately 54% of participants had heard of intermittent fasting, while 79% of these were specifically familiar with the 16/8 method. Among the 27% of participants who had tried intermittent fasting, a few reported feeling hungry during the fasting window.

Most participants (92%) said they were interested in learning more about the 16/8 IF strategy in particular. Participants identified potential benefits of the 16/8 IF strategy, such as weight loss (69%), improved metabolism (65%), and improved concentration (19%). The most common concerns were conflicting social situations (46%),

difficulty with hunger during fasting periods (42%), and decreased energy levels (31%).

The majority of participants (73%) expressed a willingness to try the 16/8 IF strategy, especially if they received instructions on meal planning (77%) and guidelines from health professionals (54%).

Many participants reported that keeping a food diary helped them more easily and directly identify their eating patterns, including nutritional balance and meal timing.

The cross-tabulation analysis between the hours of the eating window (Q10) and the number of meals consumed (Q6) revealed a clear relationship between the duration of

the eating window and meal frequency. As shown in the table, participants with shorter eating windows tended to consume fewer meals.

For example, participants with the shortest eating windows (less than 6 hours) either consumed a single meal or condensed their meals into a smaller time frame. As the eating window increased to 6-10 hours, there was a trend toward consuming more structured meals, typically two to three meals. The consistency of consuming three meals within a 10-14-hour window suggests that participants with longer eating windows maintained traditional meal patterns, but spread them out over a longer period of time.

Table 1. Cross-Tabulation of Eating Window Duration and Number of Meals Consumed

Eating Window Duration \ Number of Meals Consumed	1	2	3	4+	sub-to-tal
Less than 6 hours	1	0	2	0	3
6-8 hours	0	4	2	0	6
8-10 hours	0	3	6	1	10
10-12 hours	0	0	1	0	6
12-14 hours	0	0	1	0	1
More than 14 hours	0	0	0	0	0

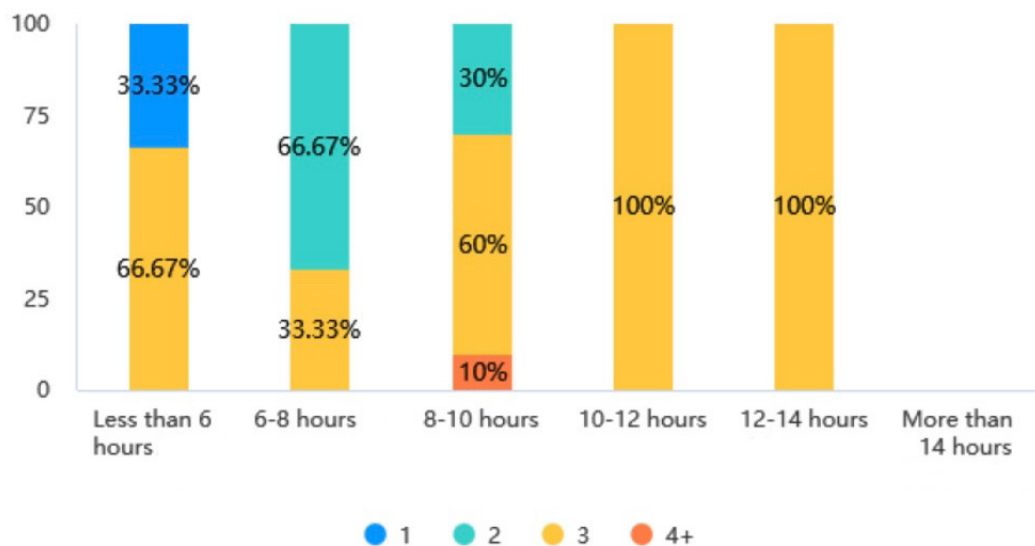


Figure 1 Histogram of Number of Meals Consumed by Eating Window Duration

The cross-tabulation analysis between the duration of the eating window (Q10) and snacking behavior (Q8) revealed a clear relationship between the length of the eating window and the frequency of snacking between meals. The analysis indicates that participants with shorter eating windows (less than 8 hours) were generally less likely to snack frequently compared to those with longer eating windows.

For example, in the group with eating windows of less than 6 hours, the majority (66.67%) reported that they "sometimes" snacked, with no participants reporting that they "always" snacked. Conversely, among those with 8-10 hour meal windows, 6 reported "sometimes" snacking and 1 reported "usually" snacking. Although the sample size for windows longer than 12 hours was small, this pattern persisted with slightly longer eating windows, during

which snacking grew more common.

Table 2. Cross-Tabulation of Eating Window Duration and Snacking Frequency

Eating Window Duration \ Snacking Frequency	Always	Usually	Sometimes	Rarely	Never	sub-total
Less than 6 hours	0	1	2	0	0	3
6-8 hours	0	1	2	3	0	6
8-10 hours	0	1	6	3	0	10
10-12 hours	1	0	3	2	0	6
12-14 hours	0	1	0	0	0	1
More than 14 hours	0	0	0	0	0	0

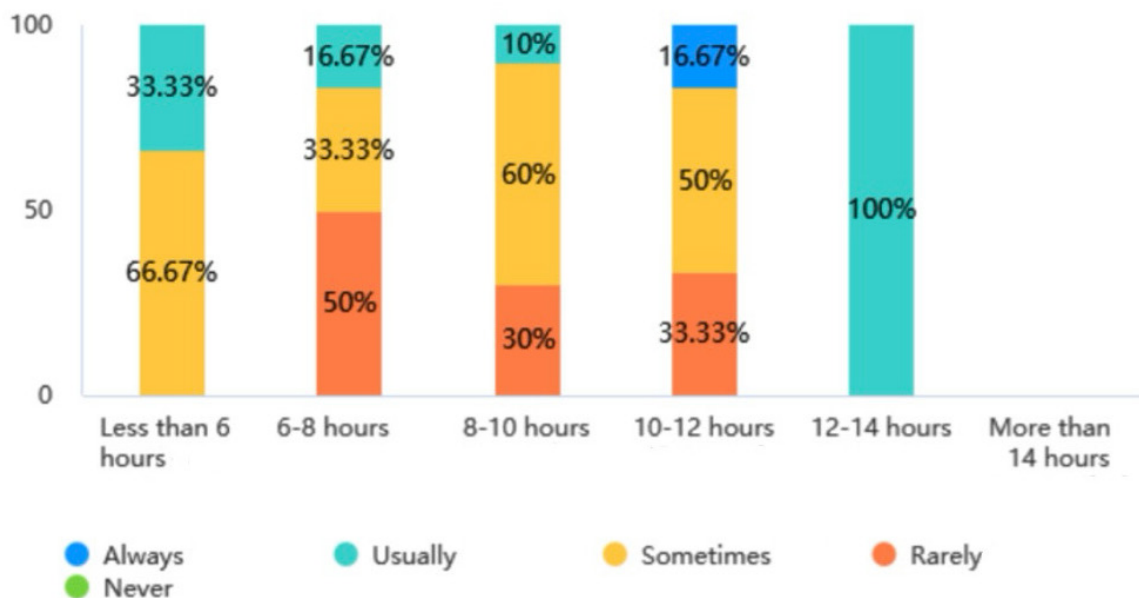


Figure 2 Histogram of Snacking Frequency by Eating Window Duration

5. Discussion

5.1 Timing and Awareness of Eating Habits

After analyzing the food diaries and reflection questionnaires, it was revealed that most participants lacked awareness of their actual eating times. The mismatch between participants' reported eating times and their observed snacking behavior is particularly evident, especially in the afternoon and evening. These findings suggest that unplanned snacking may undermine participants' perceptions of their eating habits, leading to unintended calorie intake and potentially hindering weight loss efforts.

The cross-tabulation analysis showed that participants with shorter eating windows snacked less frequently, suggesting that a structured approach such as the 16/8 IF strategy can effectively reduce spontaneous eating. This

reduction in snacking may help to create a calorie deficit, a critical factor in weight loss as supported by numerous studies (Gabel et al., 2018; Liu et al., 2022).

Suggestion: For those interested in weight loss, adopting the 16/8 IF strategy may help minimize unplanned snacking and control overall calorie intake. By shortening the eating window and providing a clear structure to meal times, individuals may find it easier to reduce unintentional snacking, which is a major contributor to excess calorie consumption. It is recommended to establish a consistent eating schedule within the 8-hour window and to be mindful of meal content to further support weight loss goals.

5.2 Adherence Challenges Among Diverse Populations

The general population and those participating in clinical trials or studies of highly motivated populations, including

overweight and obese individuals, adhere to the 16/8 IF strategy differently. Concerns about hunger and difficulties incorporating the fasting schedule into daily routines were reported as challenges by the author's research subjects, who represented a wide range of the general population. This contrasts with the higher adherence rates often observed in clinical trials, where participants receive detailed meal plans, monitoring, and ongoing support - elements that are often lacking in everyday settings (Domaszewski et al., 2023; Chair et al., 2022).

Moreover, existing studies of 16/8 IF have largely focused on overweight or obese individuals who urgently need to lose weight to improve their health (Schroder et al., 2021; Chow et al., 2020; Sukkriang & Buranapin, 2024). This inherent motivation likely contributes to their higher adherence rates, as they may be driven by the prospect of significant health improvements, such as better management of diabetes or a reduction in cardiovascular risk factors. In contrast, the healthy general population may not have the same level of urgency or motivation to strictly adhere to the fasting regimen, which may explain the lower adherence observed in the author's participant group.

Suggestion: To improve adherence to the 16/8 IF strategy among the general population, it is important to implement practical and manageable strategies that fit into everyday life. Staying hydrated, increasing fiber intake, and including more protein-rich foods can help manage hunger during fasting periods. Exercise has also been suggested as a way to suppress subjective feelings of appetite, making it easier to adhere to the fasting regimen. In addition, clear, accessible resources or guides that outline these strategies can enable individuals to better understand how to implement and maintain the 16/8 IF strategy in their daily lives, potentially achieving benefits and improving adherence rates even in less motivated populations.

5.3 Optimizing Meal Frequency and Nutritional Quality

Primary and secondary research have highlighted a divergence in meal frequency and nutritional quality between controlled clinical settings and real-world applications of the 16/8 IF strategy. Clinical trials often emphasized the importance of structured meals within the eating window to ensure that participants receive a balanced diet (Moro et al., 2016; Liu et al., 2022). In contrast, participants in the author's study often skipped meals to fit the meal window, potentially compromising nutritional quality and overall health.

This discrepancy highlights the need for better meal planning within the 8-hour window, focusing not only on the duration of the fast but also on what is consumed during

the eating period. A balanced diet that includes a variety of nutrients from all food groups is critical to optimizing the health benefits of intermittent fasting while avoiding potential nutritional deficiencies.

Suggestion: Individuals following the 16/8 IF strategy should prioritize meal planning to ensure a balanced intake of nutrients within the eating window. This approach should include a focus on the quality of the foods consumed, rather than just adherence to the fasting schedule. Using resources such as credible nutrition websites or consulting with healthcare professionals to plan meals can help maintain a balanced diet that supports overall health and well-being.

5.4 Comparing Calorie Restriction to the 16/8 IF Strategy

Comparing the adherence and sustainability of traditional calorie restriction with the 16/8 IF strategy provides several insights into why individuals may prefer the latter. Traditional calorie restriction often requires meticulous tracking of daily caloric intake, which can be burdensome and impractical, especially for individuals with time constraints. The 16/8 IF strategy, on the other hand, simplifies the process by eliminating the need for daily calorie counting and instead focusing on restricting food intake to a specific time window.

Studies suggest that adherence rates for intermittent fasting are generally higher than for continuous calorie restriction, likely due to the simplicity and flexibility of the fasting approach (Lowe et al., 2020; Liu et al., 2022). The appeal of not having to monitor the caloric content of each meal makes the 16/8 IF strategy more accessible and sustainable for many individuals, contributing to its popularity as a weight management tool.

Suggestion: For individuals who find daily calorie tracking impractical or burdensome, the 16/8 IF strategy offers a simpler alternative that may be easier to sustain over time. By focusing on when to eat rather than the exact number of calories in each meal, this strategy can help individuals achieve their weight management goals with less effort and greater adherence.

6. Evaluation

Strengths and limitations of this study should be recognized. The focus of this research on a generally healthy sample group provided new insights into the dietary habits and potential challenges among the general population in adopting the 16/8 IF strategy, addressing a gap in existing research that often targets overweight or obese populations. The comprehensive review of previous studies allowed for critically comparing the effects of the 16/8 IF

strategy among diverse demographics and settings.

However, limitations of the study include the use of convenience sampling and a small sample size, which limit the generalizability of the findings. The anonymous reflection questionnaire prevented direct comparison with individual food diaries, limiting the depth of analysis between self-reported and actual behaviors. In addition, the reliance on self-reported data may have led to inaccuracies, such as underreporting of caloric intake, which could affect the study's conclusions.

7. Conclusion

This study aimed to evaluate the effectiveness of the 16/8 intermittent fasting strategy for weight management and cardiometabolic health, and to develop general guidelines for the general population. The results confirmed that 16/8 IF is effective in reducing calorie intake and promoting structured eating patterns, which may support weight loss efforts. However, the effects on markers of cardiometabolic health were inconsistent, highlighting the need for further research to assess the long-term outcomes of this dietary approach.

The primary research provided valuable insights into the eating behaviors and challenges faced by a generally healthy population, as opposed to the more commonly studied groups of overweight or obese individuals. This has highlighted the need for practical guidelines that are accessible, easy to follow, and tailored to everyday life, with an emphasis on meal planning, hydration, and balanced nutrition within the eating window.

The results also suggest that while the 16/8 IF strategy offers a flexible and sustainable alternative to traditional calorie restriction, its success depends on structured eating and individualized adherence strategies. However, participants from the primary research demonstrated a lack of awareness of their actual eating window due to unplanned snacking habits, particularly in the afternoon and evening, which can undermine the effectiveness of the 16/8 IF approach. Addressing these habits through increased awareness and better meal planning can help optimize the benefits of intermittent fasting.

Overall, this study contributes to the growing body of literature on intermittent fasting by providing a nuanced evaluation of the 16/8 IF strategy, highlighting both its potential and its limitations. The guidelines developed from this research are intended to help the general population make informed decisions about adopting the 16/8 IF strategy in a way that aligns with their health and lifestyle goals. Further research is needed to explore the long-term effects of this dietary approach and to refine guidelines that can be tailored to different populations.

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