

Review

Religious and Traditional Fasting May Be an Alternative Method to Tackle Global Health Threats and the Epidemic of Obesity

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Academic Editors: Sok Cheon Pak and Soo Liang Ooi

Special Issue: [Evidence-based Practice in Complementary Medicine](#)

OBM Integrative and Complementary Medicine
2024, volume 9, issue 3
doi:10.21926/obm.icm.2403055

Received: June 01, 2024

Accepted: September 19, 2024

Published: September 24, 2024

Abstract

Intermittent fasting practices, recommended as a potential nutritional approach against obesity and metabolic diseases, have become increasingly widespread in recent years. Although convincing data on the anti-obesity and cardio-metabolic benefits of intermittent fasting are obtained mostly from experimental studies, religious and traditional fasting practices have been among the treatment methods applied for human health for centuries. Both intermittent fasting and religious fasting may be a promising strategy for weight loss and improving metabolic health as well as combating the obesity pandemic. In this context, in addition to proven experimental and clinical studies, this review suggested that fasting can be one of the important cornerstones of an integrative treatment approach, as it is a religious, traditional, and widely known method worldwide. It also claims that it can be a useful and sustainable method in the fight against both obesity and factors that threaten planetary health.



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Keywords

Intermittent fasting; obesity; religious fasting; planetary health; non-communicable diseases; integrative and complementary medicine

1. Introduction

The twentieth century was a period of two world wars and great advances in science and industry. The 21st century, with dizzying technological advances beyond the last century, will also face many different challenges and potential risks, highlighted in the current literature, that threaten the future of humanity and planetary security (Table 1A) [1]. Climate change, rapid and unplanned urbanization, biodiversity loss, stratospheric ozone depletion, chemical pollution, ocean acidification and freshwater depletion are some of the factors threatening human health and future. With experience from past crises, the global community must work together to develop policies to manage potential risks to ensure safe and sustainable planetary health for current and future generations [1, 2]. Despite advances in medicine and technology, the world also faces many health challenges. Among the many challenges are outbreaks of vaccine-preventable diseases (measles and diphtheria), the growing rates of obesity and physical inactivity, environmental pollution, and the health impacts of climate change (Table 1B) [3]. In the 1990s, 25% of adults aged 18 years and over (the average world population) were overweight, increasing linearly to 43% in 2022. While the increase is significant worldwide, the prevalence of overweight people varies by region (31% in Southeast Asia and Africa, 67% in the USA) [4].

Table 1 Current global issues that threaten human health and planetary health.

| A) The current most important global problems | B) Top ten health challenges in 2019 WHO report | |
|---|---|----------------------------|
| ● Climate change, environmental degradation/fragility | - Air pollution and climate change | - Antimicrobial resistance |
| ● Population growth and migration | - Non-communicable diseases (NCD)* | - Vaccine hesitancy |
| ● Health pandemics and infectious diseases | - Global influenza pandemic | - Dengue |
| ● Extreme poverty and inequality | - Fragile and vulnerable settings | - HIV |
| ● Increased resource scarcity and food crises | - Weak primary health care | |
| ● Rapid and unplanned urbanisation, rising youth population and social discontent | - Ebola and other high-threat pathogens | |

*Obesity is one of the four basic metabolic risk factors that increase the risk of NCD and is also associated with other factors.

On the other hand, according to the World Health Organization, non-communicable diseases (NCDs) such as diabetes, cancer, and heart disease are responsible for more than 70% of all deaths worldwide (41 million people) [3]. The latest COVID-19 pandemic is not only a health problem that has killed millions of people but has also led to a global crisis that has an impact worldwide and in every field [5]. Moreover, climate change has the potential to deeply affect human and public health, health policies, and the global economy, as experienced in the recent COVID-19 epidemic [6]. It is argued that integrative and complementary medicine (ICM) as part of an integrated approach to healthcare has much to offer to global health and public health [7]. Religious fasting (RF) is a universally widespread, historical, traditional form of alternative and preventive treatment. Fasting worship is one of the five pillars of Islam, which is practiced differently in many religious faiths, from monotheistic religions to other religions. Both RF and calorie-restricted diets or intermittent fasting (IF) are known to have positive effects on human health [8].

In recent years, suggested that the increasing prevalence of NCDs may also be related to globalization and climate change [9]. In this context, the need for a social movement that aims to transform current living and working practices at all levels (i.e. individual, community, societal, national, regional, and global) in response to both threats to human health and well-being and threats to planetary health is emphasized [10, 11]. Indeed, current data support the claim that global warming is largely anthropogenic [12]. It has been suggested that RF, among other religious health benefits, can facilitate and support societal transformations and changes by providing opportunities at the individual, population, environmental and planetary levels [13]. In addition, RF is traditionally followed by people of all faiths around the world and is recognized as a healthy dietary pattern that can be adopted by individuals. It is therefore suggested that RF can help not only human health but also help solve some environmental problems [14]. Given the current pressure of the obesity epidemic on public health outcomes, effective alternative approaches to weight control are also needed. The aim of this review is to draw attention to the impact of fasting, one of the TCIM practices, on human health at individual, societal and global levels and its potential to prevent diseases, with a focus on 'combating obesity'. The review addresses fasting as well as potential environmental and planetary health factors in Islamic teachings, emphasizing the importance of a holistic approach to threats to health, environment and planetary health.

1.1 Background: The Relationship between COVID-19 Experience and Fasting

Ramadan fasting is a religious practice is a style of worship and spiritual discipline that involves Muslims abstaining from food, drink, and sexual activity from dawn to sunset during a month [8, 14]. Research conducted on Ramadan intermittent fasting (RIF) and other forms of IF supports numerous health benefits, including positive effects on the immune system, microbiome, body weight, and body composition [15]. Moreover, it is important to emphasize that Ramadan is more than just fasting, the whole life changes during this month, including an increase in prayers that require cleanliness and regular washing of hands and other parts of the body [16]. In terms of immunological improvements, it has been shown that RIF has no impact on the immune system [17]. On the contrary, a growing body of evidence suggests that fasting during Ramadan can help the immune system fight infections [18]. It is known that during the COVID-19 epidemic, Muslim communities experienced the months of Ramadan slightly differently due to quarantine conditions [19]. However, during the COVID-19 pandemic, some researchers have suggested that

healthy adult Muslims will reap the benefits of fasting and improve body health and the performance of the immune system. In other words, they argued that fasting could accelerate the recovery process of COVID-19 patients, as an effective factor in the fight against COVID-19 [20]. In addition, suggested that there is no evidence that healthy people who have been able to fast in previous years without harm are at any additional risk from fasting during Ramadan in the context of COVID-19, as confirmed by the World Health Organisation's interim guidelines [21]. Climate change and the increase in zoonose epidemics such as COVID-19 are directly related to human intervention in natural environments [22]. Today, all countries face various global problems such as climate change, epidemics, NCDs, and socioeconomic inequality. Although it is not known what will happen in the future, it can be predicted. Therefore, if the experiences gained in combating the COVID-19 epidemic, the new information learned, and the potential risks of existing problems are considered together, it may be easier to be successful in combating global problems (Figure 1) [23].

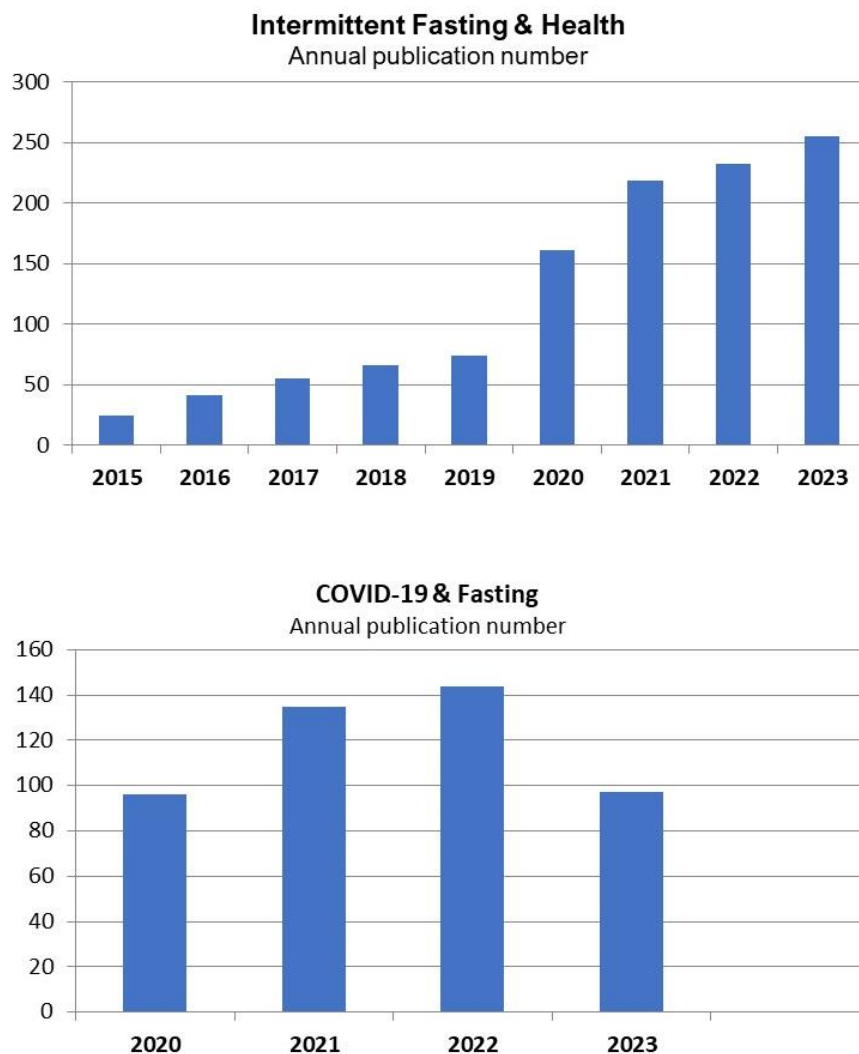


Figure 1 The linear increase in the number of annual publications, obtained by using the keywords "Intermittent fasting and health". Annual number of publications during the pandemic period obtained using the keywords "COVID-19 and fasting". Data was obtained from PubMed on May 22, 2024.

2. The Impact of Fasting on Human Health

Over the last quarter century, many studies have reported positive effects of both RF and IF fasting and dietary practices on health, aging and the disease process [24-26]. RF is practiced by people of all faiths, including Christianity, Islam, Buddhism, Jainism, Hinduism, Judaism and Taoism (Table 2). In addition to its benefits for human health, RF can offer opportunities at the individual, societal, environmental, and planetary levels, facilitating and supporting social transformation and change, such as the adoption of a healthier, more equitable approach and sustainable lifestyle [13, 14]. RF as a time of spiritual growth and transformation can also be a time of great improvement in one's physical health, although in many religions it manifests itself in the form of special fasting periods [24]. It has been suggested that fasting may be a valid method for treating some diseases, such as type 2 diabetes (T2D) as well as a common approach to weight loss [27].

Table 2 Summary of different fasting practices in monotheistic religions and other belief systems, and modern fasting protocols.

| Monotheist (*) & Other Religions | The Type of Fasting and Characteristic Features |
|-----------------------------------|---|
| Islam* | The fasting of Ramadan month (29/30 days, obligatory) – Other common (not compulsory) fasting days for Muslims the first 10 days of Dhu al-Hijjah (12th month) Mondays and Thursdays of every week and the middle 3 days of every lunar month (13-15). |
| Christianity* | Catholic Christians practice fast-like practices during the 6-week period before Easter (Lent), also on Ash Wednesday and Good Friday, the first day of Lent (not eating meat, etc.). Some Protestants observe Lent by abstaining from certain favourite foods or habits. A similar method of fasting is the 'Daniel fast' which lasts 21 days. In the Eastern Orthodox Church, there are different fasting periods besides Lent, such as the Nativity fast, the Apostle's Fast and the Dormition Fast. |
| Judaism* | Fasting days in Judaism; Yom Kippur, Tisha B'Av, the fast of Gedaliah, the tenth fast of Tevet, the 17th of Tammuz and the fast of Esther. These are the only days (except Yom Kippur and Tisha B'Av) on which Jews abstain from eating and drinking anything by mouth (including water) for 24 hours (from sunset to sunset). |
| Other Faith/Religions Hinduism | The most common fast in Hinduism is Ekadasi, which occurs twice a month. In addition, many Hindus fast during the month of Shraavan. There are different forms of fasting, such as abstaining from meat, drinking only water and milk, or eating fruits and vegetables (abstaining from food and drink for 24 hours). |
| Buddhism | Buddhists fast (abstaining from meat, processed foods, etc.) two or more times a month. Some Buddhists do not eat every day in the afternoon. |
| Sikhism & Jainism | Sikhism does not encourage fasting except for medical reasons. |
| Baha'i | During the Baha'i month of A'la, with complete abstinence from food and drink from sunrise to sunset. |
| ● Modern Fasting Protocols | The Buchinger- Wilhelmi Example The common form of IF - Time-Restricted Eating - Modified Fasting Regimens - Alternate day fasting - Fasting mimicking diet |

2.1 The Effects of Intermittent Fasting on Obesity and Weight Loss

In general, various IF regimens include alternate-day fasting (24 h of fasting followed by 24 h of eating), the 5:2 diet (fasting for two days and eating normally for the other five days), and time-restricted fasting (fasting for 14 h and eating within a 10 h window) [8, 28]. In recent years, the popularity of IF has greatly increased due to its ability to achieve clinically significant weight loss and protect against metabolic diseases [29]. The IF strategy involves fasting for an extended period of time, usually 16-48 hours, with little or no calorie intake, followed by periods of normal eating. Any form of IF results in mild to moderate weight loss (3-8% loss from baseline) in 8-12 weeks [30]. The dietary or calorie restriction also reduces biomarkers associated with aging and promotes metabolic and molecular health in non-obese people [31]. Stekovic and colleagues found that alternate-day fasting in the clinic led to marked improvements in cardiovascular parameters and body composition; they claimed that alternate-day fasting was safe and beneficial in healthy, non-obese people [32]. A randomized controlled trial in patients with obesity found that both a time-restricted diet and daily calorie restriction led to significant weight loss [33]. However, the results of another randomized trial reported that fasting-mimicking dieting did not lead to greater weight loss or reduction in waist circumference compared with continuous energy restriction [34]. Meanwhile, another meta-analysis limited to obese people reported that both alternative diet fasting and time-restricted eating were equivalent to continuous energy restriction [35]. Nonetheless, a recent meta-analysis of randomized controlled trials concluded that intermittent fasting is not more effective in weight loss in obese individuals compared to controls [36].

It has been suggested that IF has a wide range of benefits for many diseases, including obesity, diabetes, and insulin resistance. For example, a review study indicated that practices of IF reduce both body weight and diabetes parameters such as fasting glucose, insulin, HOMA-IR index, and HbA1c [37]. Likewise, the results of a recent meta-analysis reported that IF compared to continuous energy restriction in overweight or obese adults had beneficial effects on several health outcomes, in particular, reduced waist circumference and fat mass [38]. Indeed, IF practices can help with weight management and loss and therefore obesity management. Since obesity and excess body weight are also associated with sleep disorders, research suggests that losing weight through IF may help improve sleep quality in individuals with weight-related sleep problems [39]. Furthermore, research also supports that IF is a dietary pattern with the potential to positively influence human health by interacting with gut microbiota and ameliorating the effects of obesity [40]. Intermittent fasting initiates cellular autophagy through various signalling pathways to initiate stem cell differentiation into mature neurons, promote myocyte regeneration and delay ageing. Potential mechanisms of IF include not only reorganising the gut microbiota, but also reorganising the circadian rhythm to prevent obesity [41]. Meanwhile, it is accepted that IF, which is contraindicated in children under 12 years of age, a pregnant or breastfeeding women, can be recommended as a treatment option or preventive method for adolescents with severe obesity, normal, overweight, or obese adults [30]. Considering all this, current findings suggest that weight loss can be achieved with IF applications in obese patients.

2.2 The Benefits of Religious Fasting on Obesity and Weight Loss

Fasting is seen as a means of healing the body and soul in both Islam and other religions and beliefs such as Christianity, Judaism, and Buddhism. Although religious fasts are a common practice around the world, it is observed that there are more publications about RIF in the literature [8, 18]. RIF, a mandatory spiritual practice for Muslims that involves abstaining from eating, drinking, sexual intercourse and, other activities from sunrise to sunset, is more often the subject of research and study in the scientific literature, as is IF [17]. In addition to its spiritual effects, Islamic fasting can also be a useful tool for improving health. Above all, fasting leads to lower blood sugar and clinically important improvements in HDL and total cholesterol levels. It also reduces body weight, body mass index, and waist-hip ratio in normal and obese people, regardless of gender [42]. RIF has been reported to be associated with significant weight loss in healthy men and women [43, 44]. A meta-analysis on the effects of RIF reported that weight and fat mass loss in healthy Muslims, particularly those who were overweight or obese [45]. Another meta-analysis reported that RIF yielded a significant, but small reduction in body mass and waist circumference. According to authors, RIF is one of the most extensively studied types of RF, with a vast number of original research, systematic reviews, and meta-analyses demonstrating that fasting is associated with variable changes in body weight, body composition, and fat mass [46]. An observational study results, conducted among the general population of Muslims in London during Ramadan 2019, RF is associated with reductions in weight, BMI, waist, and hip circumferences [47]. Conducted by Correia and colleagues a meta-analyses study reported that both RIF and IF were also effective in reducing body weight, although non-Ramadan IF appears to be more effective in improving overall body composition [48]. Although weight loss after Ramadan was highlighted by the majority of the studies, modulation of lifestyle is essential to maintain the beneficial effects of fasting. This could be achieved by eating healthy food and maintaining physical activities during the month of Ramadan and the rest of the year. Therefore, fasting could be used as a means to lose weight for people with obesity or at risk of obesity. In this context, it is thought may be beneficial in weight loss, and suggested as an effective treatment intervention option in obesity [30, 49]. There is evidence that not only Islamic fasting regimes but also Christian practices lead to significant reductions in body weight and composition. For example, the practice of fasting, common among Ethiopian Orthodox followers, is thought to prevent the increasing burden of overweight, obesity, and related NCDs [50]. Therefore, RF may be an appropriate starting point for combating obesity, but it is also important to develop strategies that can sustain its beneficial effects beyond the fasting period.

3. The Other Beneficial Effects of Religious Fasting

Findings from previous and recent meta-analyses indicate that RIF has significant beneficial effects on metabolic syndrome (MetS) and its components, which is closely linked to overweight/obesity [42, 51]. The most important benefit of fasting during Ramadan to a healthy life is that it leads to weight loss if it is sustainable [45, 47]. The results of a recent meta-analysis study support the beneficial effects of Ramadan fasting in reducing body weight and waist circumference [52]. Essentially, RIF is an important worship in the Islamic faith that has both physical and psychosocial benefits. It requires complete abstinence from food and drink from sunrise to sunset, which can lead to reduced overall levels of stress [13]. Studies have found that

levels of stress hormones, such as cortisol and norepinephrine, which can increase blood pressure, are lower during Ramadan fasting [53]. Another recent meta-analysis reported that RIF had no adverse effects on metabolic markers, sexual hormones, thyroid hormones, calcium, phosphorus, and PTH and was a safe practice [54]. The results of a research point to beneficial and clinically relevant effects of fasting and intensified lifestyle modification on quality of life and psychological parameters in patients with MetS [55]. Interestingly, there are repeated fasting rituals in almost all religions, such as Lent before Easter (in Christianity) and Ramadan fasting (in Islam) is two examples. A systematic review showed that faith-based interventions targeting both church- and individual-level changes will have a greater impact on weight loss and related behaviours than interventions targeting single-level changes [56]. Indeed, Ramadan is a holy month of fasting, spiritual reflection, and worship for Muslims worldwide. Ramadan month is a period of self-discipline, self-control, and spirituality, which has shown benefits in physical, mental, and social well-being [57]. Moreover, both the RIF and this holy month are generally seen by Muslims as a good chance to make meaningful changes to their lifestyles, enabling them to live happier and healthier lives with their loved ones, taking lifelong impacts [58]. In addition to RIF, Muslims are encouraged to voluntarily fast (Sunnah fast) in the same manner on other days (e.g., Monday and Thursday each week). Therefore, the health benefits of the RIF model may potentially be experienced year-round [59, 60]. Furthermore, similar to the study results mentioned above, it has been reported that the 'fast of Dawood' reduces anxiety in pre-elderly and elderly people, thus providing psychosocial benefits [59]. Similarly, Bahá'í fasting has been suggested to increase participants' mindfulness and well-being as well as reduce stress levels and fatigue [61]. Indeed, fasting therapy is a cornerstone of traditional European naturopathy and complementary medicine. Fasting therapy is also a safe dietary intervention and is effective in increasing lifestyle change and behavioural modification of eating habits [62]. Meanwhile, both Ayurveda and Naturopathy consider fasting to be a reliable remedy against various diseases, while therapeutic fasting is used as a method of treatment in naturopathic hospitals [63]. Since religious worship as a psychosocial motivational factor not only provides goals in life but also guides by providing direction, motivation, and strength to achieve life goals, RIF can make it easy to overcome lifestyle difficulties (Table 3).

Table 3 The examples of spiritual gain and satisfaction that fasting provides to a person.

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- Fasting quiets the inner "self" in the individual
 - Fasting helps to grow gratitude
 - Through fasting one gains power over one's physical desires
 - Fasting develops a sense of giving and sharing
 - Fasting gives strength to accomplish hard things
 - Fasting empties anyone and prepares spiritually for a sense of happiness and accomplishment
-

4. The Linkage among Religious Fasting, Human Health and Planetary Health

Humanity is intertwined with and dependent on the living biosphere. Nonetheless, humanity has become a global force shaping the functioning and future of the biosphere and the wider Earth system, as climate change and biodiversity loss demonstrate [64]. Notably, the COVID-19

pandemic has exposed an interconnected and tightly coupled globalized world in rapid change. Both climate change and the increasing prevalence of obesity are among the problems of today's people, two fundamental problems that require urgent intervention [65]. Although global food calorie production is keeping pace with population growth, millions of people are undernourished and many more are consuming low-quality diets. It is an urgent imperative that local and global sustainable food systems provide equitable and healthy diets to all countries and communities in need [66]. On the other hand, food system changes that reduce greenhouse gas emissions are also directly or indirectly associated with reduced prevalence of NCDs such as obesity, diabetes, heart disease, and premature mortality [67]. Remarkably, in a Lancet report published in 2019, scientists recommend reducing red meat consumption by at least 77% to protect public health [65]. Indeed, the human body is better adapted to cope with under-nutrition than over-nutrition. The increase in metabolic disorders with the increase in human life span makes this painful reality felt. In other words, everyone needs to understand that the latest scientific discoveries cannot overcome sedentary habits and over-nutrition [68]. Furthermore, instead of accepting the inevitable progression of diabetes or waiting for the miracle cure pill for T2D, obese and overweight individuals need to find intuitive lifestyle solutions to reduce food consumption, increase activity levels, and eat healthy. In this sense, it is imperative to consider all methods that can be useful, including religious and traditional practices on a global scale, as well as individual and community-based struggles. Indeed, there is ample evidence that meat consumption has negative impacts not only on the health of the individual but also on the environment [69, 70]. Islamic fasting has also another important potential to help combat the negative effects of meat and excessive food consumption. In addition to the obligatory fast of Ramadan and some special fasts (e.g., al-ayyam al-beed, the 13-15th days of lunar months), the Prophet Muhammad fasted two days a week, on Mondays and Thursdays. The Prophet Muhammad and his companions were not advocates of daily meat consumption; likewise, historically Muslims ate very little meat and were mostly vegetarian [71]. A similar type of the al-ayyam al-beed fast is known as the "Ekadashi fast" (11th day of the month) and is practiced in India [72].

It is observed that religions also play an increasing role in the fight against the environmental crisis. Because religious debate has enormous potential to shape the attitudes of followers of religions, environmentally focused debates can significantly change the majority attitudes towards the environment in communities [73]. According to Islamic teachings, protecting the environment is a religious duty. Islam has emphasized the importance of protecting not only the environment but also natural resources [74]. On the other hand, another problem that poses a threat on a global scale is food waste. Especially in developed countries, consumer behaviour pushes them to waste more food, but food waste affects the environment by releasing harmful gases into the atmosphere and reducing the quality of biodiversity [75]. Another important principle of Islam regarding the environment is that it prohibits waste and extravagance. Allah says in the Holy Quran "O Children of Adam! Wear your beautiful apparel at every time and place of prayer: eat and drink: But waste not by excess, for Allah loveth not the wasters" (Surah Al A'râf, verse 31) [76]. In Islam, man is considered to be God's caliph, protector, or representative on earth. This concept places a great responsibility on man to care for and maintain God's creation, including the universe. Certainly, the person appointed as caliph on earth must have good morals, both material and spiritual [77]. It also provides a deep philosophical, ethical, and moral basis for ensuring the sustainability of nature and regulating human interaction with the universe [78]. According to the

basic elements of Islamic education, efforts to protect, use, and preserve nature and the environment are part of the worship of Allah. Islam also emphasizes the urgency of maintaining a balance of physical and mental health. It is therefore argued that promoting pro-environmental advocacy among Muslims can provide a sociocultural background for global public health [79]. Briefly, in many religions, fasting is a fundamental practice with both spiritual and physical advantages [24]. As mentioned by Trabelsi and colleagues fasting can affect individual well-being as well as the well-being of society, and therefore the environment and the planet [13].

5. Discussion

Obesity has become an epidemic that is not equally distributed across the population. Long-time recognized as a risk factor for cardiovascular and metabolic diseases, obesity is now recognized as a chronic disease with significant impacts on overall health [80, 81]. In addition to priority recommendations on diet and physical activity, a holistic approach including medical treatment, both traditional and modern, also personalized treatment modalities may be alternative options in tackling the growing obesity epidemic [82, 83]. Lifestyle intervention remains the foundation of obesity management; however, its effectiveness is frequently limited by weight regain in the longer term. In reducing or combating obesity, there must first be a clear awareness of two concepts. First, although the goal is to reduce obesity, no one should be judged by their size. Second, it should be noted that preventing and treating obesity are different from each other [84]. Indeed obesity is caused by the type and availability of food and lack of physical activity, so it can be said that preventing obesity is a different concept. However, from bariatric surgery to low-carb diets [85], IF, and ultra-low-calorie diets [39], a variety of treatment interventions can successfully reverse both obesity and T2D. Behavioural weight loss is the first line of treatment for obesity. Behaviour therapy is an approach variously called behavioural treatment, comprehensive lifestyle modification, or intensive lifestyle intervention. In obesity, such behavioural approaches have been shown to lead to an average 5% to 10% reduction relative to baseline body weight within 6 to 12 months [86].

Several interventions related to spiritual belief include prayer, meditation, and fasting. A systematic review targeting changes at both the church and individual levels reported that faith-based approaches may be feasible strategies to address higher rates of obesity in African Americans [56]. Although religious beliefs provide support in diabetes self-management among Indian immigrants living in Australia, both positive and negative effects have been found regarding the impact of fasting on diabetes management [87]. Considered over the last decade as a new dietary modification for weight loss and obesity, IF is considered safe and beneficial for weight loss in overweight and obese adults with or without diabetes [88, 89]. A new study provides evidence that IF affects physiological systems that have implications for body weight management and showed that IF may also help fight NCDs such as T2D, obesity, and cancer [41]. Similarly, a recent observational clinical trial has shown that both 16-hours IF and RIF can reduce body weight over 1 month. The authors also suggest that RIF has more notable effects on reducing subcutaneous fat and fatty liver compared to IF and improves gastrointestinal motility [90].

Intermittent and religious fasting appears to be an effective and safe way to achieve weight loss in obesity. In this context, fasting may be one of the important cornerstones of the integrative approach, as proven by existing experimental and clinical studies [30, 38]. More importantly, the

fact that it is a form of worship in all religions, is known historically and traditionally in non-religious beliefs, and therefore is known almost all over the world, makes it a different and distinguished alternative [14, 24]. In addition, the ease of individual and social implementation and the availability of alternative options make fasting attractive, thus providing a suitable potential tool for a mass struggle [8]. Although varies in terms of practices, underlying philosophies, and intentions, mostly, religious and traditional fasting have in common potential benefits for well-being. Religions share common goals of well-being, body-mind integration, and spiritual attainment. It is also known and appreciated historically that periods of fasting have a transformative power. Indeed, fasting has been a common element of the various religious and spiritual practices of the world for millennia [91]. In Christianity, it is one of the seven ancient practices or disciplines, historically rooted in Judaism traditionally practiced during Lent in preparation for the celebration of Easter. There are fasting practices among Eastern religions such as Buddhism and Hinduism [13, 91]. In Islam, fasting during the month of Ramadan is one of the five pillars of faith, and it is an essential practice observed by adult Muslims all over the world. In addition, fasting is used or recommended in the prevention and treatment of several diseases in many cultures around the world [24, 92]. Given the proven data on IF and dietary modifications, promoting fasting practices, many of which originate from religious contexts, could not only lead to increased awareness across all societies, but could also provide significant benefits to both public health and planetary health. A recent study has called for collaboration between scholars from various disciplines and spiritual leaders to address ecological and planetary health challenges [93]. Notably, the role of religious leaders in shaping the social and environmental worldviews of their followers should not be underestimated, and it should not be overlooked that every religious faith and faith leader can contribute together to solving this common problem for the common good. On the other hand, the cost-effectiveness of management strategies must also be considered given the global obesity epidemic and the fact that obesity is an increasingly chronic disease requiring long-term management [94]. In this sense, it is an important advantages that IF and RF applications do not require additional costs. Ultimately, considering the available data, practices such as intermittent and religious fasting appear to have the potential to be used in routine care [95]. This conclusion is supported by both scientific recommendations for therapeutic practices [29] and the increasing popularity of wellness/rehab centres that provide medical advice for such fasting practices [62].

6. Conclusion

It is a known fact that obesity and the COVID-19 epidemic are the two main health problems faced by humanity in the millennium. The difference between these two epidemic situations is that COVID-19 is a contagious epidemic, while obesity is NCDs. In the last epidemic, the number of deaths due to Coronavirus is estimated to be over 7 million. There are currently close to 705 million confirmed cases in 229 countries and territories, and the death toll is still being evaluated [96]. Likewise, obesity has reached epidemic proportions globally, with at least 2.8 million people dying each year as a result of being overweight or obese [97]. Although the high prevalence of obesity worldwide implies that the problem is unsolvable [98], the findings and implementing solutions to the dramatically increasing prevalence of obesity worldwide may require potentially unprecedented change.

The potential future developments will also require greater involvement of partners outside traditional health sectors and multidisciplinary approaches that promote effective behaviour change and establish new social norms. Dealing with such big and complex challenges, it is inevitable to use every tool and opportunity, from religious beliefs to cultural, traditional, and social norms as well as scientific data and the latest technological facilities. Religious fasting, alongside other religious health assets, can provide several opportunities across multiple levels of scale, ranging from the individual to the community, population, environmental, and planetary levels, by facilitating and supporting societal transformations and changes.

In this sense, fasting is one of the "religious practices" most closely associated with being healthy; namely, the adoption of more equitable and sustainable lifestyles stands out as an act of engagement with interrelated or intertwined challenges that have enormous impacts on "whole health," from NCDs to the environmental and climate crisis [13]. Proven experimental and clinical studies show that IF and RIF may play a preventive role in combating obesity and threats to planetary health. Integrative and complementary medicine interventions can also contribute to the solution of these global problems that require urgent action. However, despite the potential of fasting to provide significant health benefits, it should be remembered that its effects may vary depending on the individual and their particular circumstances. A careful evaluation and guidance should be provided to ensure that it is a safe and effective practice for each individual.

Author Contributions

Ferah Armutcu: Conceptualization, methodology, software, writing – original draft, formal analysis, review and editing. Author has read and approved the published version of the manuscript.

Funding

This research received no external funding.

Competing Interests

The author has declared that no competing interests exist.

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