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ISLAMIC FASTING AND THE TRENDING INTERMITTENT FASTING DIET

[1]Dr. Nowar Nizar Alani
Associate professor of Arabic and Islamic studies, RAK Medical & Health Sciences University
[2]Dr. Omnia Ibrahim Mohamed
Assistant Professor of English, RAK Medical & Health Sciences University & Faculty of Languages and Translation Sadat Academy for Management Sciences

ABSTRACT: *The study discusses the intermittent fasting diet that is trending nowadays as one of the successful dieting methods that enhances metabolism and helps in weight loss and Islamic fasting that Allah imposed on Muslims more than 1400 years ago. The researcher compares both diets by reviewing several studies that tackled fasting, whether it is for weight loss or as a religious ritual. The studies discussed were from 2010 until 2021. Publications indexed in Scopus, PubMed, Web of Science, Google Scholar, and other renowned databases were covered. The review highlights and discusses the benefits as well as the side effects of both types of fasting. The conclusion of the review indicates that the miracle of the Quran to impose fasting on Muslims is not only to be emphatic with the poor but also because fasting is one of the healthiest food regimes that everyone should follow and adopt as a style of life.*

KEY WORDS: Intermittent fasting (IF), Ramadan fasting (RF), Islamic fasting, fasting-mimicking diets (FMDs), Caloric restriction (CR)

INTRODUCTION

Islamic Fasting and the Intermittent Fasting diet are two topics that have become intermingled nowadays. The reason for the connection appeared recently when a certain losing weight regime inspired by Islamic fasting has become very popular. This diet is recommended by many nutritionists all over the world as an effective way to lose weight and enhance metabolism. The term "intermittent fasting" is used to describe this diet in which eating behaviours include frequent periods of fasting during which extremely few or no calories are consumed.

Islamic Fasting was commanded by Allah in the Holy Quran in the verses "O you who have believed, decreed upon you is fasting as it was decreed upon those before you that you may become righteous" (2:183). During Ramadan, the ninth lunar month, Muslims, all over the world, fast from sunrise to sunset. The fasting period ranges from 13 to 18 hours per day. Fasting entails abstaining from drinking all kinds of liquids and eating all kinds of foods. Many of the world's main religions encourage fasting periods, and Islamic fasting during the month of Ramadan is strictly performed by millions of Muslims around the world.

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Fasting is a religious obligation for all healthy adult Muslims. A complete month of intermittent fasting, from dawn to dark, every year is unique to Islam, and given that Islam has over one billion adherents worldwide, it is reasonable to infer that a few hundreds of millions of individuals fast during Ramadan each year. Fasting teaches Muslims self-discipline and self-restraint, as well as the ability to empathize with the less fortunate, the suffering, and the underprivileged. Fasting is not required for minors, menstruation women, the sick, or travellers. Pregnant and lactating women are likewise exempt and may postpone their fasting to a suitable period when it will not interfere with their maternal obligations (Azizi,2010). As cited in the Holy Quran: "Fasting is a limited number of days. So whoever among you is ill or on a journey should fast on other days. And upon those who are able to fast, but with hardship can feed instead a poor person [each day]. And whoever volunteers is better for him. But to fast is best for you, if you only knew."(2:184). The majority of Muslims eat two large meals during Ramadan, one shortly after sunset (Iftar) and the other shortly before dawn (suhoor). They are only permitted to eat and drink between sunset and daybreak. Because Islamic calendar is based on a lunar cycle, the Islamic year has 354 days, hence Ramadan moves back 11 days each year. Ramadan may occur during any of the four seasons, causing the length of daily fasting to fluctuate between 11 and 18 hours in northern and tropical regions. Ramadan is either 29 or 30 days long.

Few years back, several nutritionists have adopted a diet to lose weight inspired by Islamic fasting. Islamic fasting offers a one-of-a-kind model of daily intermittent fasting for one month. It differs from typical voluntary or experimental fasting in that the fasting person does not drink throughout the fasting hours. Ramadan fasting not only disciplines the body to refrain from eating and drinking water, but it also entails restricting every part of one's physical body, including the mouth and ears, from gossip and cursing; all sexual thoughts and behaviours are also prohibited during fasting hours. As a result, a Muslim uses his or her entire body to physically observe the Ramadan fast. The eyes, ears, tongue, and even intimate parts are all required to be controlled. As a result, one could expect physiological changes during Islamic fasting to differ from those reported during an experimental fast. (Azizi, 2010). The same idea was voiced in the following Hadith of the Prophet (PBUH): "Whoever is not able to marry should fast, as fasting diminishes his sexual urge."(Al-Bukhari) Another Hadith was recited that mentions Muslims' behaviour during Ramadan that says: "Whoever does not give up forged speech and evil actions, Allah is not in need of his leaving his food and drink (i.e. Allah will not accept his fasting." (Al-Bukhari).

The purpose of this study is to examine some of the health benefits of fasting during Ramadan and how it is implemented in healthy diets like the trending "Intermittent Fasting diet" that has become popular nowadays as a method of losing weight and enhancing metabolism. The study will determine the impact of both on the human body and the lifestyle of people. It reviews studies related to both types of fasting to check the differences and similarities to prove that many Islamic treatments mentioned in the Quran were employed and recommended by modern scientists and fasting is one of them. The Holy Quran mentioned natural and healthy treatments for many diseases long before science discovered these treatments.

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In this study, several related abstracts were retrieved from Islamic and non-Islamic nations and many articles satisfying the criteria for paper selection were thoroughly analysed to determine details of referenced resources. The literature discussed will be from 2010 onwards and the questions that this research answers will be the following:

What is the difference between Islamic fasting and intermittent diet?
What are the health benefits of Islamic fasting and intermittent diet?
What are the health risks or side effects related to fasting, if any?
What are the rates of success of the intermittent diet?
How do Islamic fasting and intermittent fasting diet affect the health and lifestyle of people?
How did Quran predict what is useful for the human body in spite of the fact that it was descended more than 1400 years?

LITERATURE REVIEW

Many studies discussed Islamic fasting as well as the intermittent fasting diet. Several studies discussed each of them individually and some discussed both. Literature that discussed intermittent diet, as a lifestyle and regime. were mainly articles related to nutrition or medicine. Whereas articles that tackled Islamic fasting were mainly religious books from Arabian or non-Arabian countries. Yet, some literature discussed both with the purpose of reference or comparison.

Azizi (2010) reviewed health-related aspects of Ramadan fasting. She reviewed related abstracts from 1960 to 2009 obtained from Medline and local journals in Islamic countries. One hundred and thirteen articles meeting the criteria for paper selection were reviewed in-depth to identify details of related materials. The results reached were that there are no adverse effects of Ramadan fasting on the heart, lung, liver, kidney, eyes, hematologic profile, endocrine and neuropsychiatric functions. Moreover, well-controlled type 2 diabetics may observe Ramadan fasting, but fasting is not recommended for type 1. Therefore, after reviewing all the related articles, the conclusion was that Ramadan fasting is safe for all healthy individuals, but those with various diseases should consult their physicians and follow scientific recommendations.

Ismail et.al. (2020) examined patients with chronic conditions who are eligible for exemption but sometimes insist on fasting without seeking medical advice. Neurologists usually refrain from advising patients with Myasthenia Gravis (MG) to fast because of the lack of evidence-based knowledge regarding its safety. The group of researchers studied the clinical outcomes in patients with MG to estimate outcome risk. This prospective cohort study was conducted in the main tertiary neurology center at Ibn Sina Hospital in Kuwait in Ramadan. Patients with MG who were willing to fast were evaluated through 3 clinical visits: 1 month before Ramadan, during the last week of Ramadan, and 1 month after Ramadan. Outcomes were classified as stable, worsened, or improved disease according to changes in patients. Patients were instructed to break their fasting in case of worsening. Ramadan fasting appears to be safe and well tolerated for most patients with MG in the cohort. Only 15% showed worsening of their symptoms; however, no patient developed any

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respiratory problems and only 2 patients developed severe weakness of limb and axial muscles. This is in line with previous studies showing that 10% to 15% of patients with MG will have worsening disease status despite conventional treatment regimens.

In 2018, Maideen and others conducted a study that aimed to review the benefits of Islamic fasting. The review was conducted by searching in databases like Medline, PubMed, PMC, Google Scholar, ScienceDirect, and reference lists of relevant articles using keywords like health benefits, Islamic fasting, intermittent fasting, alternate-day fasting, time-restricted feeding, and Ramadan intermittent fasting. Results showed that Islamic fasting could be considered intermittent fasting dieting as it is similar to alternate-day fasting and time-restricted feeding. Intermittent fasting is associated with numerous health benefits. According to this review, some of the main health benefits of Islamic fasting include weight loss, attenuation of metabolic markers (e.g., insulin resistance, blood glucose, and blood pressure), improved lipid profile, prevention of chronic problems (e.g., obesity, diabetes, cardiovascular diseases, and cancer), protection against neurodegeneration, and diminished inflammation.

Lesan & Ali (2019) discussed the Intermittent fasting (IF) that has been gaining popularity as a means of losing weight and Ramadan fasting (RF) practiced by Muslims every year. It entails a major shift from normal eating patterns to exclusive nocturnal eating. RF is a state of intermittent liver glycogen depletion and repletion. The earlier (morning) part of the fasting day is marked by the dominance of carbohydrates as the main fuel, but lipid becomes more important towards the afternoon and as the time for breaking the fast at sunset (iftar) gets closer. The practice of observing Ramadan fasting is accompanied by changes in sleeping and activity patterns, as well as circadian rhythms of hormones including cortisol, insulin, leptin, ghrelin, growth hormone, prolactin, sex hormones, and adiponectin.

Moreover, few studies have investigated energy expenditure in the context of RF including resting metabolic rate (RMR) and total energy expenditure (TEE) and found no significant changes with RF. Changes in activity and sleeping patterns however do occur and are different from non-Ramadan days. Weight changes in the context of Ramadan fast are variable and typically modest with a wise inter-individual variation. As well as its direct relevance to many religious observers, understanding intermittent fasting may have implications on weight loss strategies with even broader potential implications. This review examines current knowledge on different aspects of energy balance in RF, as a common model to learn from and map out strategies for healthier outcomes in such settings.

Zouhal, et.al (2020) stated that both traditional and modern healthcare systems recommend fasting as a therapeutic intervention for the management of several chronic, non-infectious diseases. Exercising during a fasting state increases lipolysis in adipose tissue while also stimulating peripheral fat oxidation, resulting in increased fat utilization and weight loss. A key focus of this review is to assess whether endurance training performed while fasting induces specific training adaptations, where increased fat oxidation improves long-term endurance levels. Fasting decreases body weight, lean body and fat content in both trained and untrained individuals. Several studies indicate a broader impact of fasting on

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metabolism, with effects on protein and glucose metabolism in sedentary and untrained subjects.

However, there are conflicting data regarding the effects of fasting on glucose metabolism in highly trained athletes. The effects of fasting on physical performance indicators also remain unclear, with some reporting a decreased performance, while others found no significant effects. Differences in experimental design, the severity of calorie restriction, duration, and participant characteristics could explain such discordant findings. The review suggests that there is little evidence to support the notion of endurance training and fasting-mediated increases in fat oxidation, and it is recommended that endurance athletes should avoid high-intensity training while fasting.

There are also several papers, researches and articles written in Arabic about both types of fasting. An example of these articles is an article by Salah (2020), in which she explored twelve health benefits of fasting. She also explored the psychological benefits on the person who is fasting. She mentioned metabolism and detoxification and added enhancing the immune system and significantly improving the performance and efficiency of the heart. It also helps in avoiding premature aging symptoms and she adds weight loss as one of the most important health benefits of fasting and regulating the functioning of the digestive system. In addition, Salah mentioned the psychological factors, like enhancing patience and strengthening will. Also helping to promote feelings of cooperation and altruism among people is one of the most important psychological benefits of fasting.

Michalsen (2010), in his article "Prolonged fasting as a method of mood enhancement in chronic pain syndromes," reached the conclusion that prolonged fasting has also been associated with positive effects on mood due to the alteration in physiology at a cellular level via increases in the availability of central endogenous neurotransmitters, endogenous opioids and endocannabinoids. Other cancer studies demonstrated that fasting and fasting-mimicking diets (FMDs) positively promote differential effects in both normal and malignant cells via the reduction in insulin-like growth factor (IGF-1), insulin and glucose with paralleled increases in ketone bodies (Nematy, et.al.2012).

In another article by Michalsen (2013) entitled "Fasting therapy for treating and preventing disease—Current state of evidence", he concluded that Caloric restriction (CR) has also been shown to prevent several chronic degenerative and inflammatory diseases and he recommended fasting therapy as one of the methods of (CR). Similarly, Omodei & Fontana (2011) also mentioned caloric restriction as a preventive method for age-associated chronic disease and mentioned fasting as one of the methods for caloric restriction. They also mentioned fasting as a method to prolong life in more primitive species including Escherichia coli and yeast. In 2014, Willcox discussed the same topic as he conducted a study on the Okinawan population from the Kyushu Island in Japan and concluded that in humans, the evidence on the positive effects of CR on longevity is indirect; for example, the increased life expectancy in the Okinawan population has been attributed at least in part to low calorie intake.

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In 2018, Sundfør, Svendsen & Tonstad compared the effects of intermittent versus continuous energy restriction on weight loss. They concluded that both intermittent and continuous energy restriction resulted in similar weight loss, maintenance and improvements in cardiovascular risk factors after one year. However, feelings of hunger may be more pronounced during intermittent energy restriction. The fasting groups reported higher hunger scores than those who consumed a low-calorie diet with continuous calorie restriction.

Yet, Islamic fasting is different from any other type of fasting, whether it be for the sake of weight loss or any other purposes. Athar (2014) discussed the religious and medical aspects of Islamic fasting. According to Islamic Laws, children below the age of 12, sick patients, travellers, and women who are menstruating or nursing a baby are exempt from fasting. In addition to staying away from food or water for the whole day, they are asked to stay away from sex, smoking, or misconduct during the period of fast. He also mentioned the health benefits of fasting and who should not fast in certain medical conditions. He added that In the hypothalamus part of the brain there is a center called "lipostat" which controls the body mass. When severe and rapid weight loss is achieved by a starvation diet, the center does not recognize this as normal and, therefore re-programs itself to cause weight gain rapidly once the person goes off the starvation diet. So the only effective way of losing weight is slow, self-controlled, and gradual weight loss by modifying our behaviour, and attitude about eating while eliminating excess food. Ramadan is a month of self-regulation and self-training in terms of food intake thereby causing hopefully, a permanent change in lipostat reading.

Hossain (2012) provided an analytical justification about how important fasting is for humankind. It is a theoretical paper, discussing the benefits that can be achieved from fasting. The results of the paper disclose some significant reasons that fasting can be considered as a wellbeing program to acquire patience, strong will, righteousness, sincerity, good manners, discipline, and a better sense of prestige, better dieting habits, and many other physical and spiritual benefits of human being in to establish peace, prosperity and sustainable development of the society. Therefore, fasting is not only useful to the physical health of humans, but it is also useful for their mental and psychological health. There is a feeling of serenity and peace inside the person who fasts. As Prophet Mohamed mentioned, “If one slanders you or aggresses against you, tell him I am fasting.” (Al-Bukhari).

Several studies discussed the disadvantages of fasting or some of the side effects of fasting which were headaches, feeling of hunger, insomnia, mood swings, constipation … etc. . For example, Torelli & Manzoni (2010) discussed headaches as a common side effect of intermittent fasting. They typically occur during the first few days of a fasting protocol. Interestingly, researchers have found that “fasting headaches” are usually located in the frontal region of the brain and that the pain is typically mild or moderate in intensity. In addition, people who commonly get headaches are more likely to experience headaches during fasting than those who do not. Researchers have suggested that low blood sugar and caffeine withdrawal may contribute to headaches during intermittent Islamic fasting.

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Mood changes and irritability because of fasting were discussed in a study that concluded that low blood sugar, or hypoglycemia, could occur during periods of calorie restriction or over periods of fasting. This can lead to irritability, anxiety, and poor concentration. They also mentioned that a study on 52 women found that participants were significantly more irritable during an 18-hour fasting period than they were during a non-fasting period. Interestingly, the researchers found that, although the women were more irritable, they also experienced a higher sense of achievement, pride, and self-control at the end of the fasting period than they reported at the start of fasting (Tinsley, et.al, 2019).

Studies suggest that hunger is a symptom that people typically experience during the first days of a fasting regimen. Yet a study that examined 1,422 people who participated in fasting regimens lasting 4–21 days concluded that they tended to experience hunger symptoms only during the first few days of the regimens (Wilhelmi de Toledo, et.al, 2019). Moreover, some studies discussed constipation as a side effect of fasting. The reduction in food intake that comes along with some intermittent fasting regimens may negatively affect digestion, causing constipation and other side effects. In addition, changes in diet associated with intermittent fasting programs may cause bloating and diarrhea. (Tinsley, et.al, 2019) They also added that dehydration, another common side effect related to intermittent fasting, can worsen constipation. For this reason, it is essential to stay properly hydrated while practicing intermittent fasting. Choosing nutrient-dense foods rich in fiber may also help prevent constipation.

According to research, some persons who practice various kinds of intermittent fasting feel weariness and poor energy levels. As previously mentioned, low blood sugar caused by intermittent fasting might lead to fatigue and weakness. However, some studies show that intermittent fasting can reduce fatigue, especially as your body becomes adapted to regular fasting periods (Nugraha, B., et.al, 2020). Fatigue may be more common in the initial days of an intermittent fasting regimen as your body excretes large amounts of salt and water through the urine. This can lead to dehydration and low salt levels, too (Phillips M. (2019). Another unpleasant side effect associated with intermittent fasting is bad breath. It can occur in some people during intermittent fasting. This is caused by a lack of salivary flow and the rise of acetone in the breath (Gonçalves, A., et.al, 2019). Moreover, fasting causes the body to use fat for fuel. Acetone is a by-product of fat metabolism, so it increases in your blood and breath during fasting (Anderson, 2015). Dehydration was another symptom associated with intermittent fasting that can cause dry mouth, which may lead to bad breath (Kapoor, et.al 2016). In Islamic fasting, this is not considered as an issue at all as The Prophet (PBUH) stated, "The fragrance of the mouth of a fasting man is more pleasant to Allah than the smell of musk". (Mishkat).

According to some studies, sleep difficulties, such as the inability to fall or stay asleep, are among the most common negative effects of intermittent fasting. For example, the above-mentioned study by Wilhelmi, et.al. (2019) that observed 1,422 people who participated in fasting regimens lasting 4–21 days found that 15% of participants reported sleep disturbances related to fasting. They reported this more frequently than other side effects.

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However, other studies have shown that intermittent fasting had no effect on sleep. Another 2021 study was conducted on 31 people with obesity who participated in an alternate day fasting regimen while also following a low-carb diet for 6 months. The study found that this regimen did not affect sleep quality or duration, or insomnia severity (Kalam, F. et.al, 2021). Another 2021 study had similar results. These findings suggest that fasting has no effect on sleep quality, duration, insomnia severity, or the risk of obstructive sleep apnea. (Cienfuegos, et.al 2021)

DISCUSSION & CONCLUSION

More than a thousand years ago, fasting in Ramadan has become an obligation to all Muslims. Fasting was not only to feel the need of the poor, but also a health benefit. Just nowadays, after all these years, scientists and nutritionists have realized the wisdom and the benefit behind fasting to the extent that it is recommended in many cases.

Fasting has become an instrument to enhance metabolism, to help in detoxification, to adjust the level of some hormones and many other benefits that are previously mentioned. It has been noticed lately that medicine and nutrition have started employing the treatments mentioned in the Holy Quran like using the black seed, honey, olives, figs, and other things that Allah recommended to cure many ailments. Recently fasting followed these treatments, which shows that many medical and nutritional elements can be found in the Holy book that needed years and years of research to discover. The importance of the Quran is not only as a religious book, but also as a book of science, medicine, astrology, law, sociology and many other sciences.

Fasting during Ramadan is an exercise of self-control. For those who are smokers, or those who are always craving food, or drink a lot of coffee. It is a good method to break the bad habits, hoping that the effect will last beyond the month. In Ramadan, we are not subjected to a diet of only certain foods during Islamic fasting (i.e. protein only, fruits only…etc.). An early breakfast is consumed before dawn, and the fast is broken at sunset with something sweet, such as dates, fruits, or juices, to warrant any hypoglycemia, followed by a regular dinner later on. In an intermittent fasting diet regime, dieting is almost close to the same number of hours of Ramadan fasting. It is divided into 16 fasting hours and 8 hours of eating. However, in this type of diet water is allowed as well as drinks like tea or coffee with no added sugar.

Following Ramadan iftar (breaking the fasting), Muslims go for additional prayers called Taraweeh. These prayers aid in the digestion of the food and burns calories due to the movement of the body. Generally, Islamic prayers engage all of the muscles and joints and can be classified as a light exercise in terms of caloric consumption. In an Intermittent fasting diet, regular exercising is recommended to keep the muscles toned during the weight loss process. Exercising also helps in enhancing the metabolic process with the dieting regime, thus giving better and quick results.

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Muslims fast Ramadan voluntarily during Ramadan. It is not medically prescribed or forced. It does not put the body in starvation mode, which increases weight instead of losing it. On the contrary, it is an effective way to lose weight slowly and gradually by changing eating habits and attitudes while eliminating excess food, which should result in weight loss. Fasting during Ramadan, unlike other diet plans, does not result in malnutrition or insufficient calorie intake because there are no restrictions on the type or amount of food consumed during Iftar or Suhoor (before dawn meal). Therefore, during fasting days of Ramadan, glucose homeostasis is maintained by meals eaten before dawn and liver glycogen stores. Changes in serum lipids are observed. Although Ramadan fasting is safe for all healthy people, those with certain conditions should visit their doctors and follow scientific advice. (Azizi, 2010).

According to several researches , Intermittent fasting has been related to a variety of health advantages, including weight loss, reduced risk factors for heart disease, reduced blood pressure, enhanced insulin sensitivity decreased oxidative stress indicators better blood sugar management. These findings have raised the popularity of intermittent fasting diets. Yet, several studies discussed the potential side effects related to intermittent fasting. All the above-mentioned side effects disappear after one or two days of fasting and the fasting person will not feel them again. But some side effects, like dehydration for example, does not apply to an intermittent fasting diet, as the dieter is allowed to drink water, tea, or coffee. Therefore, dehydration is not an option in these types of diets.

From the above review, it is clear that fasting is one of the best regimes for health in general. The side effects mentioned are easy to conquer and get used to, but it is not recommended for very few cases with major health issues. These cases have to consult their physicians before fasting to be on the safe side. Furthermore, it is clear from the review that the intermittent fasting diet regime, which is recommended by nutritionists nowadays, is not a new discovery, as Allah recommended it more than 1400 years ago. Finally, the Holy Quran is full of discoveries and treatments that are being highlighted nowadays through thorough reading and analyses of its beautiful and useful verses. These treatments as well as many discoveries and descriptions that were lately described by biologists, embryologists , astronomy scientists , pharmacologists, geologists …etc. proves that the Holy Quran is not an ordinary book written by a human ; it is a revealed and holy book that holds many secrets and rules of life .

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