

Role of Diet on BMI in Muslim Population of Jamia Nagar, New Delhi

Priyanka Verma*

Abstract

The aim of this study was to see the effect of diet mainly non-vegetarian on Muslim population on basal metabolic rate, that is, BMR. It has been found that BMR increases with the consumption of non-vegetarian diet. The study found that the average BMR level in the group exceeded 30, placing them in the obese category. This suggests a significant link between diet, particularly a non-vegetarian one, and increased BMR. Given this correlation, it becomes clear that adopting a vegetarian diet could be beneficial for weight management. A vegetarian diet generally contains less saturated fat and more essential nutrients, which can support healthier weight management. By managing weight more effectively, one can also achieve a better BMR, which is crucial for overall metabolic health. The growing trend of people shifting towards vegetarianism is likely driven by the desire to improve health, reduce the risk of chronic diseases, and ultimately enhance longevity. A balanced vegetarian diet, rich in plant-based nutrients, supports not only weight management but also overall well-being. This shift in dietary patterns reflects a broader awareness of the long-term health benefits associated with plant-based eating. As more people recognize the connection between diet and health outcomes, the move toward vegetarianism is gaining momentum as a proactive choice for living a healthier and longer life.

Keywords: non-vegetarian, weight, height, BMI, Muslim population, chronic disease prevention, metabolic health

INTRODUCTION

Basal metabolic rate (BMR) refers to the amount of energy expended by the body while at complete rest, which includes being in a comfortable environment with stable temperature and humidity, remaining awake, and sitting in a relaxed position for 10–12 hours after eating [1]. This rate represents the minimal energy needed to sustain essential functions such as heart rate, respiration, and kidney activity. On the other hand, Body Mass Index (BMI) is calculated by dividing an individual's weight in kilograms by the square of their height in meters.

$$\text{BMI} = \text{weight}/(\text{height})^2 = \text{kg}/\text{m}^2$$

*Author for Correspondence

Priyanka Verma

E-mail: biochemistpriyanka@gmail.com

Research Officer, Department of Biochemistry, Regional Research Institute of Unani Medicine, D-11, Abul Fazal Enclave, Jamia Nagar, New Delhi, India.

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A high BMI often suggests increased body fat. While BMI helps categorize weight into ranges that might be linked to health issues, it does not measure body fat or overall health directly [1]. For a more accurate health evaluation, a qualified healthcare professional should conduct a comprehensive assessment. Here's a breakdown of BMI categories: a BMI below 18.5 is considered underweight; a BMI between 18.5 and 24.9 is classified as a healthy weight; a BMI from 25 to 29.9 is labeled overweight; and a BMI of 30 or more falls into the obese category (Table 1) [2].

Table 1. BMI categories and their health implications.

S.N.	BMI range	Category
1.	Less than 18.5	Underweight
2.	18.5–24.9	Healthy
3.	25–29.9	Overweight
4.	Higher than 30	Obese

While BMI is strongly linked to body fat, it doesn't tell the whole story about fitness. Two people with the same BMI can have very different body fat levels. Generally, women have more body fat than men at the same BMI. Additionally, the amount of body fat can vary by racial or ethnic group [3]. Factors like age and physical fitness also play a role: older adults usually have more body fat compared to younger adults with the same BMI. This is because as people age, they typically lose muscle mass and gain fat, even if their weight and BMI remain constant. On the other hand, athletes with the same BMI as non-athletes generally have lower body fat. This is because muscle mass, which weighs more than fat, occupies less space in the body [4].

BMI is a more accurate measure of body fat in individuals with higher BMI levels, where the link between BMI and body fat is more pronounced. However, while a high BMI often indicates a high level of body fat, it can also be the result of a high lean body mass, which includes muscle and bone. For this reason, BMI alone may not be a sufficient measure of health or body composition [5]. A qualified healthcare professional should conduct further health evaluations to get a more comprehensive understanding of an individual's overall health and potential risks. These assessments might include measurements of waist circumference, body fat percentage, or other indicators that provide a more comprehensive picture of an individual's health [6].

There are many advantages and disadvantages of vegetarian diet, advantages include diet with less protein, so individuals don't suffer from high protein related problems as well as they have high level of antioxidants which includes vitamin E and C as well less amount of saturated fats, while it has been found that vegetarians have deficiency of vitamin B12 as well as protein along with iron and zinc. Along with this protein deficiency causes slowing in metabolism, loss of body muscles, difficulty in gaining or losing weight, permanent fatigue, increase in time of healing of wounds, joint pain, major change in blood sugar, as well as weak immune system.

On the other hand, there are many disadvantages of non-vegetarian food, which includes increasing circulatory strain and increasing load on heart, it has been found that cholesterol present in non-vegetarian food blocks the veins, which further increase pulse and causes danger to heart, it also causes many stomach related issues as well and processing of this type of food is really difficult for the stomach, which further can be connected to weight gain therefore it is suggested to shift to vegetarian food. It has been found that people eating non-vegetarian diet have shorter life span compared to vegetarian diet [7]. There are many other issues that are linked with nonveg diets, which include ethical concern which is mainly associated with animal rights and welfare. It has been found that consumption of plant-based products like fruits, vegetables, dried beans, whole grains, and nuts can boost person's health. Here, we are investigating the effect of non-vegetarian diet on BMI. In this study our aim to access the relation between non-vegetarian diets in Muslim female population, Jamia Nagar, New Delhi [8].

METHODS

For this study, a health camp was organized at the Regional Research Institute of Unani Medicine in New Delhi, coinciding with the celebration of Unani Day. The camp primarily attracted Muslim females from the local community. During the event, each participant's basic demographic and physical information, including age, sex, weight, and height, was carefully recorded. Blood samples were taken from participants to provide a thorough health evaluation. Additionally, the BMI for each

person was calculated based on their recorded height and weight. This method allowed the researchers to analyze the relationship between diet and BMI within this specific population, providing valuable insights into the impact of dietary habits on health [9–12].

RESULTS

As shown in Table 2, in this study around 85 subjects participated in the study that consists of mainly female population. It has been found that among the study population 31.76 % of the individuals fall in the age group of 31–40 years while 20% falls in 41–50 age group. The age-wise distribution (Table 1) can be seen in the table mentioned below.

Table 2. Age wise distribution.

S.N.	Age	Percentage
1.	11–20	2.35%
2.	21–30	18.82%
3.	31–40	31.76%
4.	41–50	20.00%
5.	51–60	18.82%
6.	61–70	4.70%
7.	71–80	2.35%
8.	81–90	1.176%

In Figure 1, accordingly, height and weight of the subjects were also recorded, and it has been seen that the mean BMI value was 35.938, which was found to be higher than 30 in the study population (Table 2). This shows that the people enrolled in this study were overweight or obese. This can be because of non-vegetarian diet pattern found in the study population.

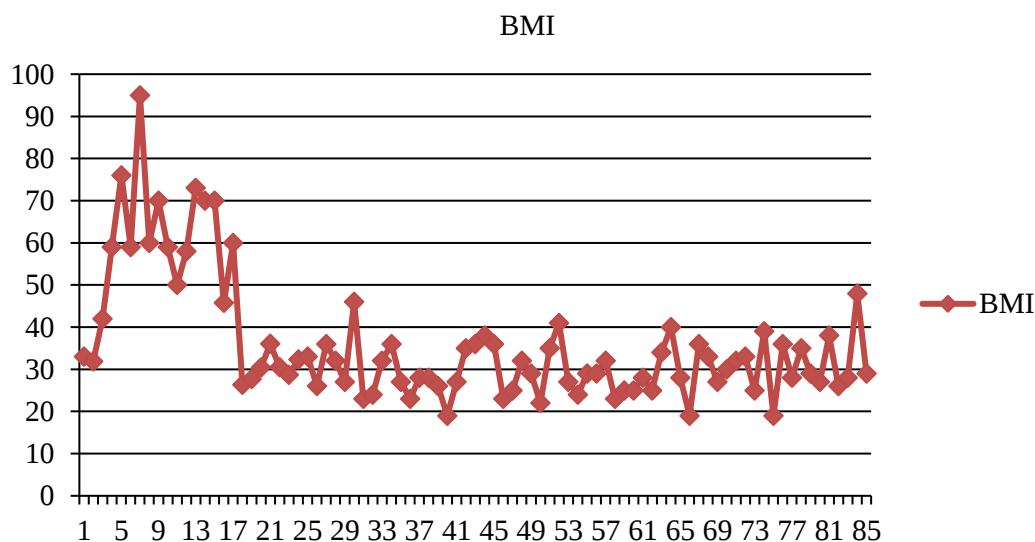


Figure 1. Mean BMI value in the study population.

DISCUSSION

This study highlights a clear connection between a non-vegetarian diet and elevated BMI among the Muslim female population of Jamia Nagar, New Delhi. The average BMI of over 30 places most participants in the obese category, suggesting that their dietary habits may be contributing to excessive weight gain. Non-vegetarian diets, particularly those rich in fatty meats, tend to be calorie-dense and may lead to higher fat accumulation, resulting in obesity.

Obesity is a recognized risk factor for several chronic conditions, including type 2 diabetes, heart disease, and high blood pressure. The study indicates that adopting a vegetarian diet, which is generally lower in calories and saturated fats while being rich in nutrients, could help individuals better manage their weight and reduce these health risks. However, vegetarian diets also come with challenges, such as possible deficiencies in vitamin B12, iron, and protein that need to be managed carefully.

The findings indicate that adopting a more plant-based diet could be advantageous for this group. Nevertheless, conducting additional research with a larger and more varied sample would offer a deeper insight into how dietary choices affect BMI and overall health. In conclusion, promoting a balanced, nutrient-rich vegetarian diet could help reduce obesity and improve health outcomes in this community.

CONCLUSION

The study was performed on the patients who visited the institute for health camp, in this patient enrolled were non-vegetarian. Their height and weight were recorded and their basal metabolic index, that is, BMI was calculated accordingly. It has been seen that BMI values were elevated or raised, which correspond to obese persons. Therefore, it can be said that non-vegetarian food should be excluded in the diet and vegetarian diet should be encouraged for the population to bypass different ailments and to stay healthy. It should also be encouraged to stay vegetarian for proper balance in the ecosystem.

There are many disadvantages of vegetarian population, which includes deficiency in vitamin B12 [2] as well as lack of iron and protein along with iron and zinc. Vegetarians also have many problems, which includes sluggishness, loss of body muscles, trouble in gaining weight, persistent fatigue, pain in joints, as well as longer healing time of wounds and they have a weaker immune system while there are certain advantages also linked to this that vegetarians consume less protein and the patient does not suffer from higher protein-related problems as their diet is rich in antioxidants like vitamin E and C as well as they contain less amount of saturated fats.

It has been seen that when mean was calculated in the study population it was found to be higher than 30, that is, 35.938 which has direct correlation with obese population, this shows that people who were enrolled in the study were overweight which may be because of nonveg consumption. It has been suggested that switching to a vegetarian diet could help reduce fat content. This is important because obesity is linked to a higher risk of various health issues, including all-cause mortality, high blood pressure, and unhealthy cholesterol levels. Additionally, those with obesity are more prone to conditions such as type 2 diabetes, coronary heart disease, stroke, gallbladder issues, osteoarthritis, sleep apnea, chronic inflammation, and certain cancers (such as endometrial, breast, colon, kidney, gallbladder, and liver). Obesity can also lead to a lower quality of life, mental health problems like depression and anxiety, and physical discomfort or difficulties. So, it can be said that people should switch to vegetarian diet instead of non-vegetarian diet for healthy living for maintain proper weight and indirectly proper BMI.

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