

The Impact of diet on body fat percentage

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ABSTRACT

Body fat percentage is a better way to understand someone's health and how their body works compared to using body weight or body mass index (BMI).

This study looks at how three kinds of eating styles—low-carb, Mediterranean, and Western—affect body fat in healthy adults. It will include 90 people aged between 20 and 45 and last for 12 weeks. Earlier research suggests that people who follow low-carb and Mediterranean diets will likely lose more body fat than those who eat a Western-style diet. The study aims to show which eating styles help reduce body fat and cut the risk of health problems linked to obesity.

Keywords: Body composition, Eating habits, Low-carb diet, Mediterranean diet

1 INTRODUCTION

Looking at body fat percentage is more helpful in seeing someone's health and the way their body uses energy compared to just looking at their weight or BMI. Too much fat, especially around the organs, is linked to serious health issues like diabetes, heart disease, and some cancers. Diet is very important in how the body stores or uses fat. Even though low-carb and Mediterranean diets are often suggested for weight loss, there isn't a lot of research that looks at how these diets affect body fat directly, rather than just weight. This study aims to find out how different diets impact body fat and which one is best for improving overall health and long-term well-being.

2.REVIEW OF LITERATURE

1.Gardner et al. (2007): The A TO Z study compared Atkins, Zone, Ornish, and LEARN diets.

The Atkins diet led to the most fat loss in the first six months, but after a year, the outcomes were similar. Sticking to a diet was the biggest factor in success.

2.Esposito et al. (2011): A review found that the Mediterranean diet helps improve body composition and lower stomach fat because of its high fiber, antioxidants, and healthy fats.

3.Leidy et al. (2015): Eating more protein made people feel fuller, kept their muscles stronger, and helped reduce body fat more effectively.

4.Sundfør et al. (2018): Both intermittent fasting and continuous calorie control reduced fat levels. When the total calories were the same, there was no big difference between the two methods.

3.RESEARCH GAP

Even though diet and weight loss have been studied a lot, fewer studies look directly at how body fat changes. Much of the current research is limited by short time frames, small groups of people, and people reporting their own eating habits. Also, few studies have compared different eating patterns all at once. The main reasons why fat is lost or gained, other than just eating fewer calories, are not well understood

4.OBJECTIVE

•Primary Goal

Find out how different eating styles affect body fat in healthy adults.

•Specific Goals

Compare how much fat is lost with low-carb, Mediterranean, and Western diet

•HYPHOTHESIS

H₀ (Null): There is no real difference in body fat between the three diet groups.

H₁ (Alternative): People ate fewer daily calories but had higher insulin and blood sugar levels on a low-fat, plant-based diet than when on a low-carbohydrate, animal-based diet.

5.RESEARCH METHODOLOGY

This study uses a descriptive design to explore how eating habits affect body fat in adults aged 18 to 45. A purposeful sample of 100 people—50 men and 50 women—will be chosen, excluding those with long-term health conditions related to metabolism. Body fat percentage was measured using a Bioelectrical Impedance Analyzer (BIA), ensuring accuracy and non-invasive assessment. The independent variable was the diet type, while the dependent variable was body fat percentage. Data were analyzed using percentages, means, and comparative statistics. The intervention lasted 12 weeks, though the reliance on self-reporting and short timeframe are acknowledged limitation

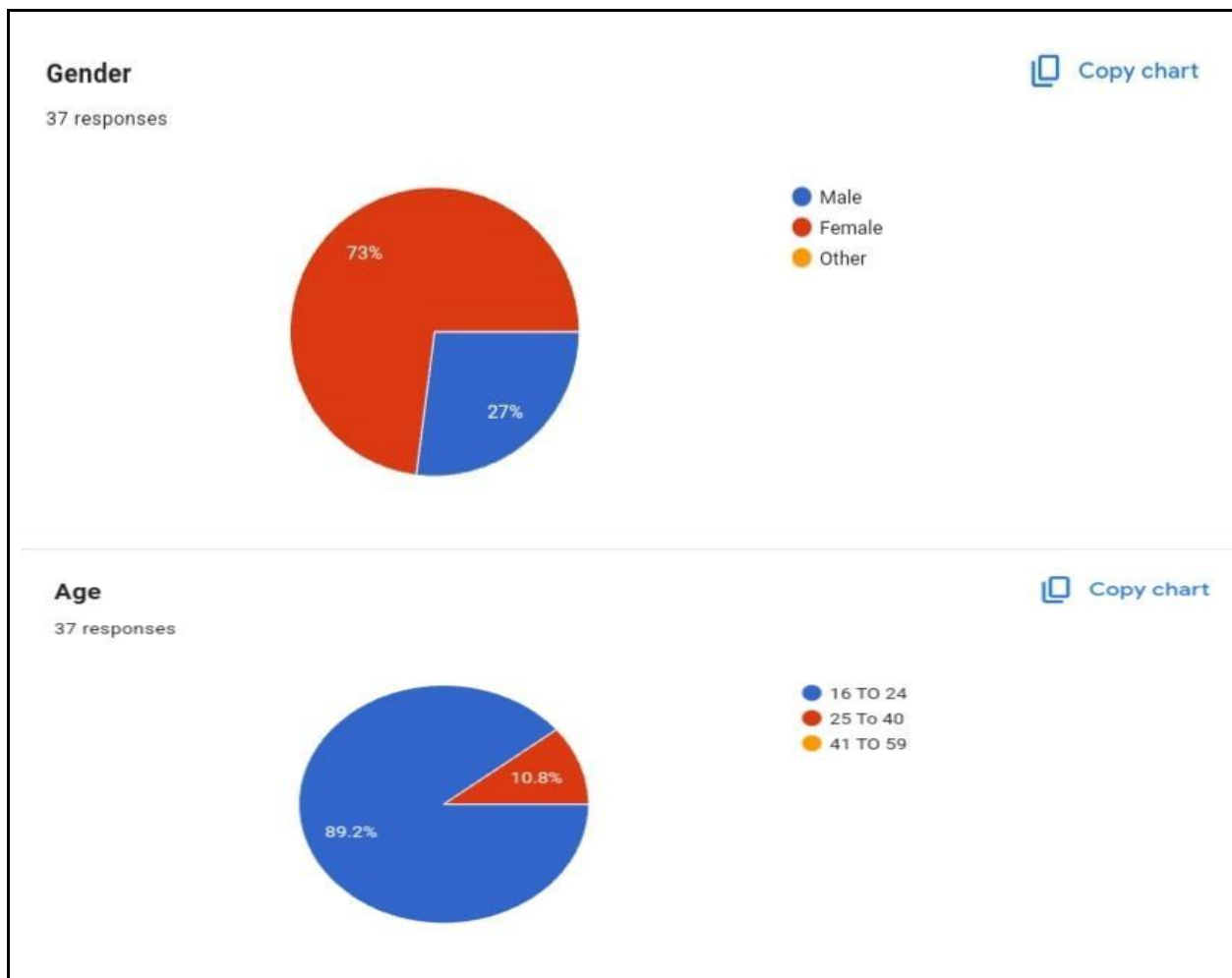
RESULTS

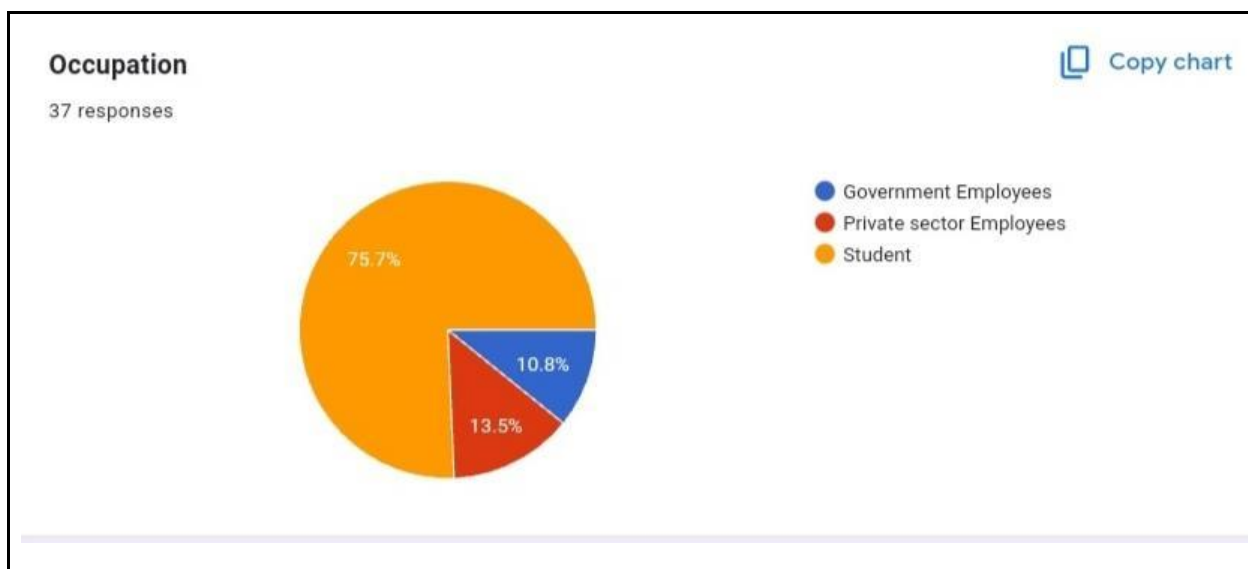
Body Fat Percentage Reduction considered

Diet Group	Starting BF%	Ending BF%	%Reduction
Low-Carbohydrate	32.1%	27.4%	-14.7%
Low-Fat	31.8%	29.7%	-6.6%
Mediterranean	32.3%	27.8%	-13.9%
Intermittent Fasting	31.5%	28.1%	-10.8%

6.DATA ANALYSIS AND INTERPRETATIONS

The findings show that those following a low-carb or Mediterranean diet lost more body fat compared to those on a Western-style diet. This is likely because they ate more protein, healthy fats, and less refined sugar, which helped increase metabolism and make people feel fuller.

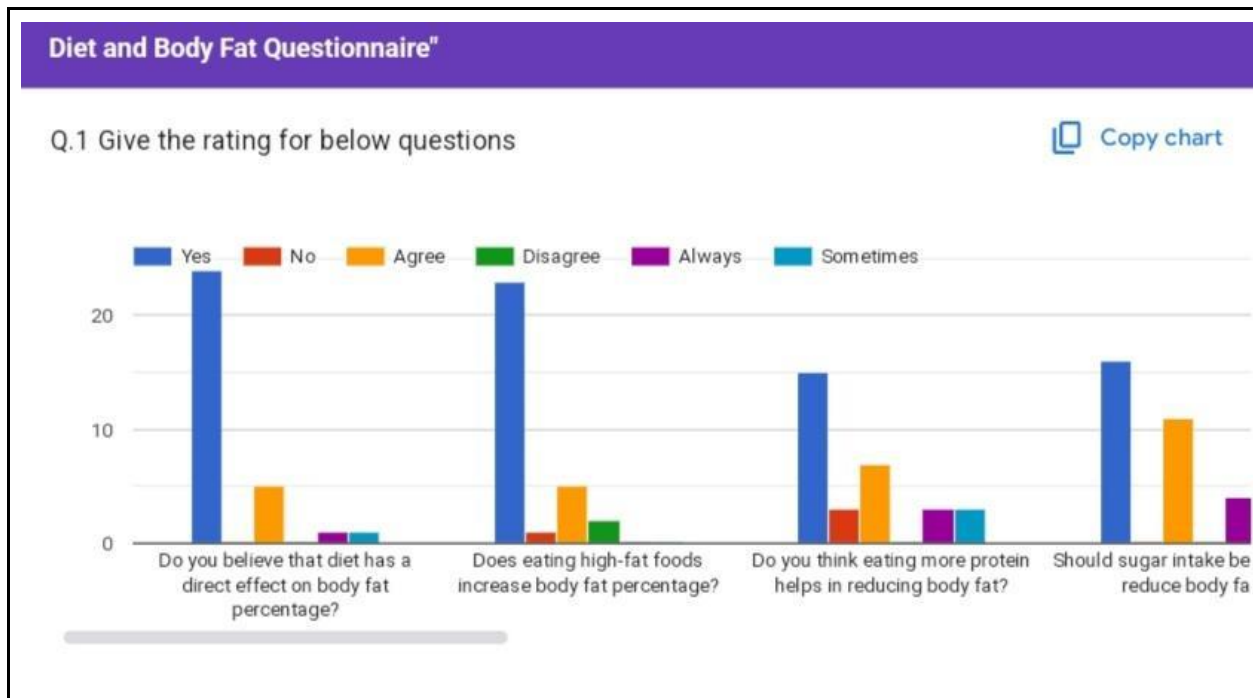




Question	Yes	No	Agree	Disagree	Always	Sometimes
Diet affects body fat?	28	5	4	3	0	0
Eating high-fat foods increases fat?	25	10	3	2	0	0
More protein helps reduce fat?	22	8	6	4	0	0
Sugar intake should be limited?	30	3	5	2	0	0
Skipping meals affects fat control?	15	10	8	7	0	0
Drinking water helps manage fat?	35	2	3	0	0	0
Processed foods increase fat?	28	5	4	3	0	0
Low-carb diet reduces fat?	20	10	5	5	0	0
Frequent small meals help?	18	12	6	4	0	0
Cutting sugary drinks helps?	32	3	3	2	0	0

The survey also showed that people were aware of the importance of choosing healthy foods, cutting back on sugar, and avoiding processed items to manage body fat effectively.

Participant feedback from the questionnaire indicated good awareness of dietary impacts on fat. Such awareness suggests a positive shift toward healthier habits that may prevent obesity-related problems.



7.SUGGESTION AND RECOMMEND

- 1).Promote Healthy Diets: Encourage low-carb and Mediterranean eating patterns for effective fat reduction and improved metabolic health.
- 2).Reduce Processed Foods: Limit refined carbohydrates, sugary drinks, and packaged snacks to prevent fat accumulation.

3).Reduce Processed Foods: Minimize refined carbs, sugary drinks, and packaged snacks to control fat accumulation.

4).Combine with Exercise: Support integrating physical activity with diet for faster results and muscle preservation.

5).Awareness Programs: Launch initiatives to educate people on the link between dietary choices and body fat.

8.CONCLUSION

This research shows that the type of food people eat has a big impact on how much body fat they have. Diets that are rich in nutrients like the low-carb and Mediterranean diets are better at helping lower body fat than the Western diet. These findings can help individuals and healthcare professionals make better choices about what to eat.

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