



# Food Faddism in a Sample from Al-Balqa Governorate in Jordan

Ala'a Al-Bakheit

PhD in Nutrition, Department of Nutrition and Food Processing, Faculty of Agricultural Technology, Al-Balqa Applied University, Jordan

ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Research Paper</p>	<p><b>Introduction:</b> Obesity is a worldwide health concern, which has been on an alarming trend in Jordan. Obesity leads to several chronic disorders and adversely affects the figure. Furthermore, it is considered to be a severe health threat during adolescence and early adulthood. People in Jordan tend to consume the foods that are rapidly prepared, and such dietary habits are referred to as fad diets. Fad diets are defined as those lacking scientific evidence and promoting rapid weight loss within a short period. The present study aimed to assess the frequency of fad diets in the students and employees in Al-Balqa Applied University in Jordan and compare them with healthy diets.</p> <p><b>Methods:</b> This cross-sectional study was conducted on 386 healthy students and employees aged 18-55 years, who were selected randomly. Data were collected using a questionnaire to determine the frequency of fad diets. In addition, food menus were analyzed using the food exchange system and Super Tracker.</p> <p><b>Results:</b> In total, 229 respondents (60.1%) followed a specific diet, 173 of whom (75.5%) were female, and 56 (24.5%) were male. Regardless of gender, 10 respondents (4.5%) adhered to a healthy diet, while 214 cases (95.5%) followed fad diets. The three most common fad diets were the high-protein diet (n=70; 31.3%), fruits and vegetables diets (n=49; 21.9%), and liquid diets (n=41; 18.3%). In terms of physical activity, 104 respondents (45.4%) who followed fad diets had physical activity, while 69 of the participants (30%) who followed a healthy diet had no physical activity. Moreover, the majority of the respondents (n=104; 45.6%) decided their diets by enquiring their family and friends, and 16 participants who adhered to diets (7.5%) used weight loss pills in addition to their diet.</p> <p><b>Conclusion:</b> According to the results, the majority of the participants adhered to fad diets in order to lose weight. However, those who were unable to adopt such lifestyle modifications due to physical or economic constraints were inclined to use simple and rapid approaches for weight loss.</p>
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## Introduction

Obesity is a severe, developing medical issue, which has not received sufficient attention from primary care professionals since economic development is the main limelight in today's world. Obesity has become a worldwide pandemic. According to the World Health Organization (WHO), obesity is a universal health issue, and one billion adults are recognized as overweight, while 300 million are diagnosed with obesity across the world (1). Obesity is prevalent in developed and

developing countries (2), and women are at a higher risk of this condition compared to men (3, 4).

Jordan was ranked fifth in the world in term of the prevalence of obesity in 2016, and 34.3% of the population in this country were considered to be overweight. According to the US Gazette Review, this rate was higher than the United Arab Emirates, South Africa, Qatar, Mexico, and the United States, and Jordan was only preceded by Egypt, Belize, Saudi Arabia,

\* Corresponding author: Ala'a Al-Bakheit, PhD in Nutrition, Department of Nutrition and Food Processing, Faculty of Agricultural Technology, Al-Balqa Applied University, Al-Salt-19117, Jordan. Tel: 00962790245021; Email: alaa.al-bakheit@bau.edu.jo

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and Kuwait in this regard (5). Furthermore, government welfare reports have indicated that approximately 40% of Jordanian adults are overweight, while the prevalence of obesity in children has been estimated at 50%.

Obesity leads to more than 30 medical conditions, such as diabetes, osteoarthritis, coronary heart disease, respiratory disorders, and hypertension (6). According to the International Diabetes Federation, there were 374,100 new reports of diabetes diagnosis in Jordan in 2015, and the majority of these cases were associated with obesity (7).

There is an urgent need to find alternative methods to reduce excessive body weight. Following routine diets is reliably the most ideal approach to lose weight. The most viable choice in this regard is adherence to a healthy diet and physical exercise, which contribute to the burning of fats and extra calories.

Fad diets refer to the techniques that claim for rigorous weight loss and lead to fast outcomes within a short period (8). Currently, a wide range of dietary regimens is available. Fad diets are available in books and magazines, as well as on the web and television. These approaches guarantee preferable cure over the other techniques with considerable weight reduction within a short period. Fad diets claim for rapid weight loss with minimal effort and no physical exercise (9).

Food faddism originally refers to the idiosyncratic diets and dietary patterns that promote short-term weight loss with no concern for long-term weight maintenance. It is a term mostly used to depict a specific food or food category that is overly consumed in the standard eating routine to easily reduce weight gain. In general, fad diets are the attractive dietary regimens that mostly contain a single food or food group, such as high-protein diets, liquid diets, and raw food diets (9). Such diets could conceivably result in several accompanying adverse conditions. Consuming fewer calories than required by the body, rapid weight loss, irregular eating habits or patterns, decreased energy and fatigue, misinformation regarding nutrition, possible diseases due to the lack of important nutrients (carbohydrates, fats, protein, minerals, vitamins, and water) are among the complications that are associated with the unsupervised adherence to fad diets

(10).

According to a study conducted by Petra University (Jordan), there are 22 fad diets in Jordan that are commonly adhered to for weight management (11). However, the mentioned study did not analyze the types of these fad diets. To date, few studies have been focused on the frequency and effects of fad diets in Jordan. The present study aimed to assess the frequency of food faddism in the students and employees in Al-Balqa Applied University (BAU) in Jordan and compare them with healthy diets. It is essential to determine the prevalence of food faddism within communities so as to develop awareness programs for individuals.

## Material and methods

This cross-sectional study was conducted at BAU, Al-Salt, Jordan in October 2014 on the students and employees at BAU. Healthy participants aged 18-55 years were enrolled in the study, and those with acute and chronic diseases and age of less than 18 years were excluded. Data were collected using a predesigned questionnaire to assess the dietary habits and other demographic data of the participants. The questionnaires were distributed personally.

Initially, 407 participants were enrolled in the study, and based on the exclusion criteria, 21 participants with chronic diseases were excluded. The final sample size was determined to be 386. The required permit to conduct the study was obtained from the Committee of Scientific Research at BAU.

## Research Instrument

A cross-sectional dietary survey was carried out to evaluate various types of dietary habits in a random sample of healthy adult students and employees at BAU. The survey consisted of questions to determine the socio demographic data of the participants, including age, gender, education level, marital status, disease history, and smoking habits. In addition, types of the diets followed by the participants, their duration, and sources of the diets were recorded. Among the other collected data were weight (kg), height (cm), and use of dietary supplements.

The participants were asked to estimate the frequency of meal consumption per day and

their preferred meal (breakfast, lunch or dinner), as well as the frequency of fast food consumption. Moreover, data on the type and duration of physical activity and water intake were collected. The composition of each diet followed by the participants was analyzed in terms of the macronutrient content (percentage) based on the USDA food database (USDA, 2007), Super Tracker (USDA, 2018), and food exchange system

### Statistical Analysis

Data analysis was performed in SPSS version 21, and the data were expressed as mean, SD, frequency, and percentage. Descriptive statistics were also used, and Chi-square and Fisher's exact test were performed wherever applicable to compare the categorical variables (frequencies) between different groups. In all the statistical analyses, P-value of  $\leq 0.05$  was

considered significant.

## Results

### Participants

Based on the inclusion and exclusion criteria of the study, 386 participants were enrolled in the research. Table 1 shows the demographic characteristics and responses to the questionnaires. Among 386 participants, 83 (21.5%) were male, and 303 (78.5%) were female. The number of the female participants was significantly higher than the male participants ( $P < 0.001$ ). Moreover, a significantly higher proportion of the participants (350/386; 90.7%) were aged 18-35 years ( $P < 0.001$ ). In total, 276 participants (71.5%) consumed fast food regularly ( $P < 0.05$ ), and less than half of the participants ( $n = 163$ ; 42.3%) performed regular physical exercise ( $P = 0.003$ ).

**Table 1.** Demographic Data and Responses of Participants Based on Chi-square Test for Group Comparison ( $P \leq 0.05$ )

Questions	Responses	N (%)	$\chi^2$	P-value
Gender (n=386)	Male	83 (21.55)	125.39	<0.001
	Female	303 (78.5)		
Age Range (year; n=386)	18-35	350 (90.7)	255.43	<0.001
	36-55	36 (9.3)		
Education Level (n=386)	High School	22 (5.7)	862.21	<0.001
	Diploma	38 (9.8)		
	Bachelor's Degree	307 (79.5)		
	Master's Degree	11 (2.8)		
Marital Status (n=386)	Single	295 (76.4)	343.25	<0.001
	Married	82 (21.2)		
	Other (Widowed/Divorced)	9 (2.3)		
Smoking Habits (n=386)	Yes	100 (42)	89.63	<0.001
	No	286 (74.1)		
Satisfaction with Current Nutritional and Medical Status (n=386)	Yes	162 (42)	9.96	0.002
	No	224 (58)		
Number of Meals per Day (n=386)	1-2	218 (56.5)	178.16	<0.001
	3-5	158 (40.9)		
	>5	10 (2.6)		
Preferred Meal (n=386)	Breakfast	68 (17.6)	225.17	<0.001
	Lunch	220 (57)		
	Dinner	25 (6.5)		
Fast Food Consumption (n=386)	All	73 (18.9)	71.39	<0.001
	Yes	276 (71.5)		
Water intake per Day (cups/day) (n=386)	No	110 (28.5)	50.29	<0.001
	<2	101 (26.2)		
	2-4	148 (38.3)		
	4-6	86 (22.3)		
Physical Activity (n=385)	6-8	51 (13.2)	9.04	0.003
	Yes	163 (42.3)		
	No	222 (57.7)		
Followed Dietary Plan (n=381)	Yes	229 (60.1)	15.12	<0.001
	No	152 (39.9)		

### Fad Diets

The participants were asked whether they

followed any dietary plans for weight loss, and 381 participants responded to the question.

Among these respondents, 229 cases (60.1%) followed a dietary plan for weight loss (Table 2).

**Table 2.** Demographic Data and Responses of Participants Following Dietary Plans for Weight Loss Based on Chi-square Test for Group Comparison ( $P \leq 0.05$ )

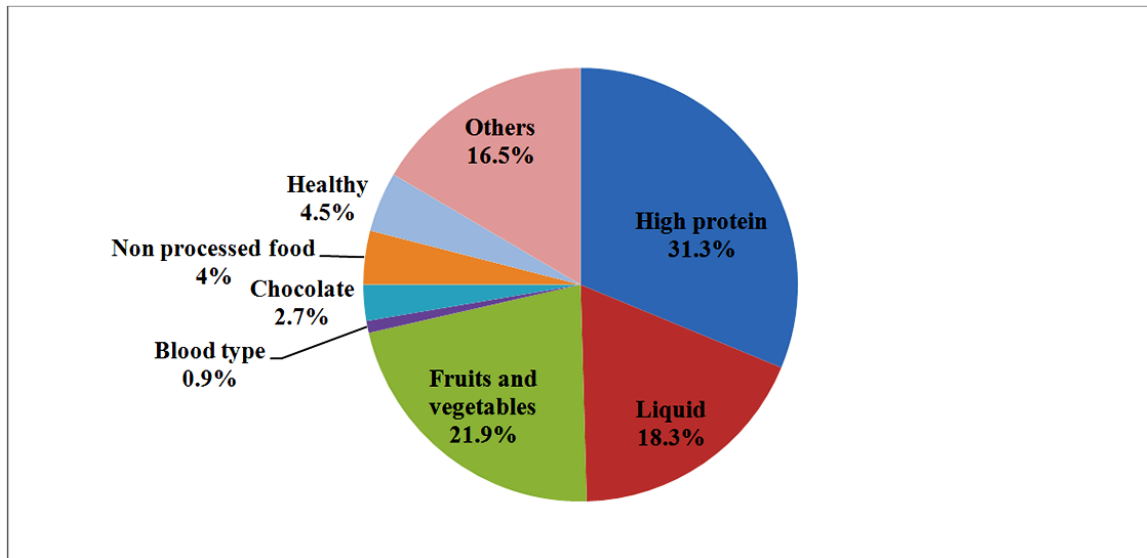
Questions	Responses	N (%)	$\chi^2$	P-value
Gender (n=229)	Male	56 (24.5)	125.39	<0.001
	Female	173 (75.5)		
Age Range (year; n=229)	18-35	198 (86.5)	255.43	<0.001
	36-55	31 (13.5)		
Education Level (n=229)	High School	12 (5.2)	862.21	<0.001
	Diploma	25 (10.9)		
	Bachelor's Degree	176 (76.9)		
	Master's Degree	8 (3.5)		
	PhD	8 (3.5)		
Marital Status (n=229)	Single	160 (69.9)	343.25	<0.001
	Married	65 (28.4)		
	Other (Widowed/Divorced)	4 (1.7)		
Smoking Habits (n=229)	Yes	57 (24.9)	89.63	<0.001
	No	172 (75.1)		
Satisfaction with Current Nutritional and Medical Status (n=229)	Yes	66 (28.8)	9.96	0.002
	No	163 (71.2)		
Meals per Day (n=229)	1-2	125 (54.6)	178.16	<0.001
	3-5	100 (43.7)		
	>5	4 (1.7)		
Preferred Meal (n=229)	Breakfast	48 (21)	225.17	<0.001
	Lunch	124 (54.1)		
	Dinner	12 (5.2)		
	All	45 (19.7)		
Fast Food Consumption (n=229)	Yes	150 (65.5)	71.39	<0.001
	No	79 (34.5)		
Water intake per Day (cups/day) (n=229)	<2	62 (27.1)	50.29	<0.001
	2-4	82 (35.8)		
	4-6	50 (21.8)		
	6-8	35 (15.3)		
Physical Activity (n=229)	Yes	104 (45.4)	9.04	0.003
	No	125 (54.6)		
Side-effects of Diets (n=226)	Yes	99 (43.8)	3.47	0.06
	No	127 (56.2)		
Source of Diets (n=228)	Family and Friends	104 (45.6)	91.19	<0.001
	Internet	69 (30.3)		
	Physicians	4 (1.8)		
	Dietitians	51 (22.4)		
Consumption of Weight Loss Pills (n=213)	Yes	16 (7.5)	153.81	<0.001

The majority of the participants who adhered to a dietary plan for weight loss were women aged 18-35 years with a bachelor's degree. In addition, 160 out of the mentioned 229 respondents (69.9%) were single (Table 2).

Among 229 participants who followed a dietary plan, 150 cases (65.5%) consumed fast

food regularly, and less than half of the participants who followed a dietary plan (104/229; 45.4%) performed regular physical exercise (Table 2).

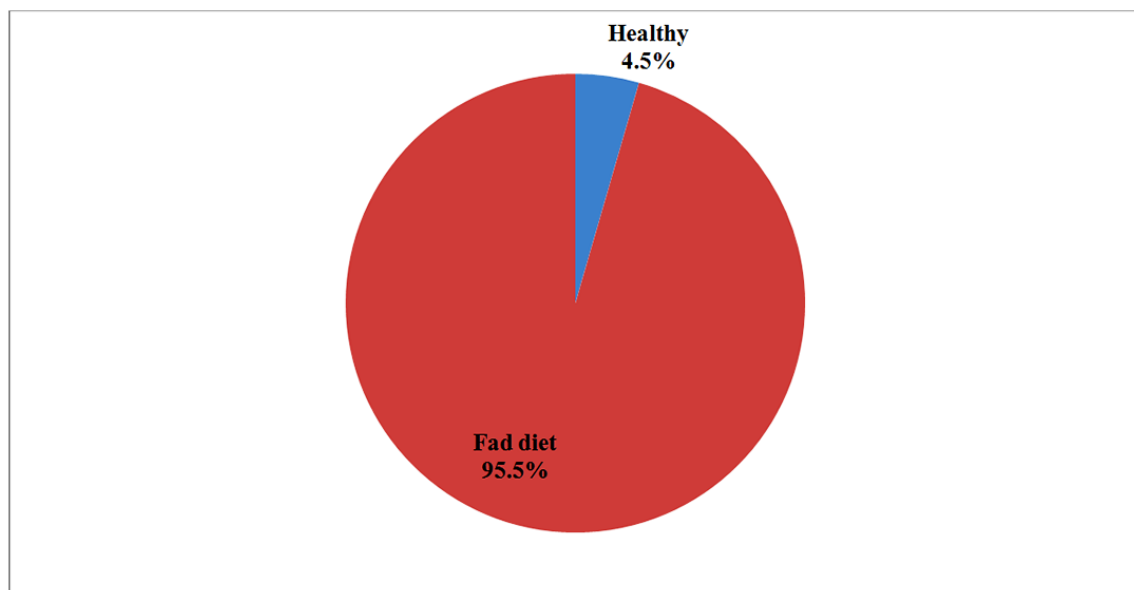
According to the findings, eight types of diets were followed by the participants who adhered to dietary plans for weight loss (Figure 1).



**Figure 1.** Distribution of Various Diets in Participants

Only 224 participants responded to the question about the type of diet. Correspondingly, the most common fad diets were high-protein diets, fruits and vegetables

diets, and liquid diets. Among the participants who adhered to a diet (n=224), 214 cases (95.5%) followed fad diets (Figure 2).



**Figure 2.** Distribution of Participants Based on Adherence to Healthy and Fad Diets

Among participants who had healthy food (n=10), three cases (30%) had no physical exercise, and among those who had fad diets (n=214), 117 cases (54.6%) followed only fad diets and had no physical exercise (Table 2). Compared to the participants who followed a healthy diet, a larger proportion of the

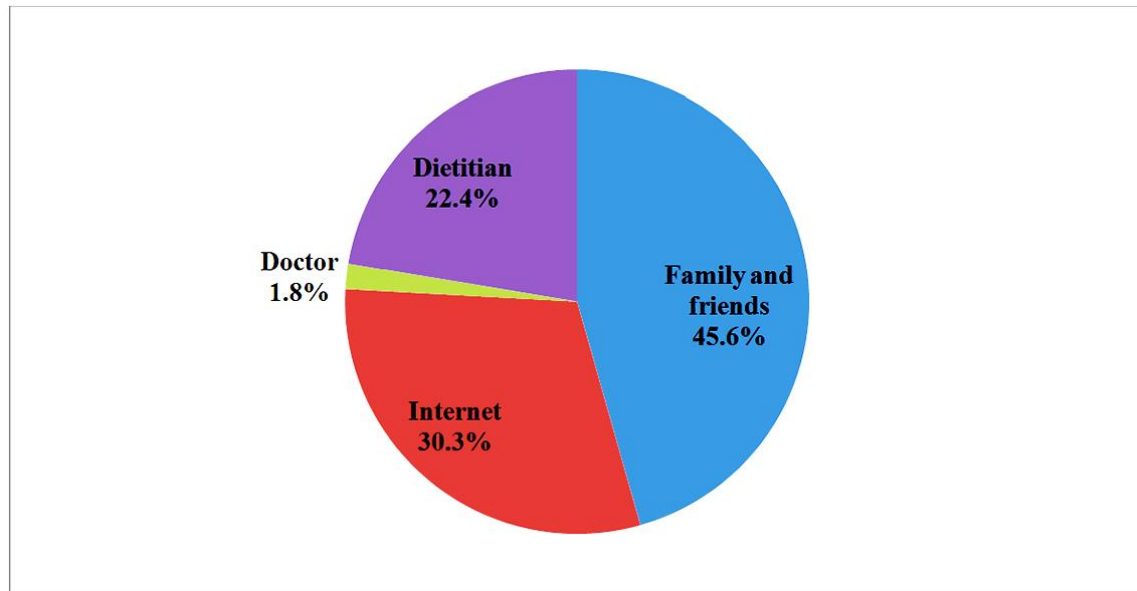
participants who followed a fad diet had no regular physical exercise, while the difference was not considered statistically significant (P=0.20).

Among 229 participants who followed a dietary plan, 226 responded to the question about the side-effects of dietary plans. In total,

99 out of 226 respondents (43.8%) stated that they developed side-effects after following these dietary plans.

Among 229 participants who followed a dietary plan, 228 responded to the question about the source of their dietary plans, and the

most commonly preferred sources of dietary plans were family and friends (104 out of 228; 45.6%) (Figure 3). It is also notable that only 16 out of 213 participants (7.5%) used weight loss pills along with dietary plans.



**Figure 3.** Common Sources of Diets in Participants

### **Estimated Energy Requirement (EER)**

Estimated energy requirement (EER) was calculated based Harris Benedict equation. Moreover, the required macronutrients were calculated based on the acceptable macronutrient distribution ranges (carbohydrates: 60%, protein: 15%, fat: 25%).

The mean EER in men was 2,500 kcal/day, which was distributed as carbohydrates (1500 kcal, 375 g), protein (375 kcal, 93.75 g), and fat (625 kcal, 69.5 g). The mean EER in women was 2,050 kcal/day, which was distributed carbohydrates (1230 kcal, 307.5 g), protein (307.5 kcal, 77 g) and fat (512.5 kcal, 57 g).

### **High-protein Diets**

The analysis of the sample menus indicated that high-protein diets could produce approximately 1000 kcal/day, which only provides 40% and 48.7% of the EER in males and females, respectively. Furthermore, the analysis of high-protein diets indicated the provision of 18% carbohydrates, 58% protein, and 24% fat, which corresponded to 45, 146, and 27 grams, respectively.

According to the Super Tracker, adherence to high-protein diets in men resulted in the intake of 2% of grains and starch, 3% of vegetables, 51% of fruits, 72% of dairy products, and 158% of meat and its products. On the other hand, adherence to high-protein diets in women resulted in the intake of 3% of grains and starch, 4% of vegetables, 51% of fruits, 72% of dairy products, and 187% of meat and its products.

### **Liquid Diets**

The analysis of the sample menus showed that liquid diets could produce approximately 873 kcal/day. Furthermore, the analysis of liquid diets indicated the provision of 67.8% carbohydrates, 26.7% protein, and 5.3% fat, which corresponded to 142, 56, and five grams, respectively.

According to the Super Tracker, adherence to liquid diets in men resulted in the intake of 128% of vegetables, 248% of fruits, 0% of dairy products, and 0% of meat and its products. On the other hand, adherence to liquid diets in women resulted in the intake of 0% of grains and starch, 128% of vegetables, 248% of fruits,

0% of dairy products, and 0% of meat and its products.

## Discussion

Recent studies have indicated that up to 1.7 billion individuals worldwide are overweight or obese, which make this issue a significant health concern faced by the general population (12). Moreover, approximately 115 million individuals have obesity-related problems in developing countries. Obesity is associated with severe health hazards, such as coronary disorders, hypertension, diabetes, and malignancy (6).

Dietary habits play a pivotal role in the health status of individuals and the community. Reports suggest that even in developed countries, eating certain foods is emphasized as a specific lifestyle, and such habits are more typical in developing countries (13).

Food faddism is a term commonly used to describe a specific food or food groups that exceed the dietary recommendations or are eliminated from the dietary routine with the aim of treating a particular disease or health condition (13). Some scientists have marked food faddism as a negative practice associated with dietary problems (14). The current research aimed to investigate the prevalence of various fad diets. According to the findings, 95.5% of the participants followed a fad diet, and the most common fad diet was high-protein diets. Further analysis indicated that these fad diets did not meet the essential requirements of macronutrients and should not be used indiscriminately.

Lack of knowledge or misinformation about food and the desire to gain financial profit are the major causes of developing fad diets with unrealistic promises (15). Adherence to fad diets has increased due to the willingness of customers to consult nutritionists and dieticians for the prescription of individualized and complete dietary plans encompassing the necessary nutritional values, especially as no single food is capable of meeting all the nutritional requirements, and it is rather a combination of foods that is mandatory for meeting the dietary and nutritional requirements of humans. The unwillingness of individuals to consult nutritionists and dieticians could be attributed to the high costs of

prescribed dietary plans and the fact that they are time-consuming to reach the needed body weight goals. Practicing food faddism without the prescription of dieticians increases the risk of malnutrition and nutritional deficiencies. In the present study, only 4.5% of the dieting participants followed a healthy dietary plan, 95.5% adhered to fad diets without a prescription. The most common sources of dietary plans were family and friends (45.6%) and the internet (30.3%). On the other hand, 22.4% of the participants followed a dietary plan after consulting a dietician, and only 1.8% preferred a dietary plan after consulting a general practitioner (Figure 3).

Food faddism is broadly practiced in the Jordanian community. Ignorance and other socio demographic factors are considered to be the underlying causes of this dietary habit. Therefore, it is essential to elaborate on the job of general practitioners in this regard. Large-scale, community-based awareness programs should be implemented to raise awareness regarding the adverse effects of food faddism and the role of dieticians in the management of obesity-related issues. The internet plays a key role in the growing trend of food faddism in communities. The wide use of social media networking and the internet has helped the spread of these unhealthy food habits, thereby leading to severe public health issues.

## Conclusion

According to the results, a major proportion of the study population adhered to fad diets in order to lose weight. Several lifestyle modifications could be beneficial in the management of obesity, such as physical exercise, meditation, and balanced diets (10). Healthy lifestyle remains the most viable option to medically manage obesity from the perspective of nutrition and health. However, individuals who are unable to adopt such lifestyle modifications due to physical or economic constraints are tempted to follow an easy and rapid approach to weight loss.

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