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Original Research Article

Awareness of obesity and the desire to change among adults in Abu Dhabi – United Arab Emirates 2024

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ABSTRACT

Background: Obesity is a growing epidemic worldwide. In recent years, obesity rates have risen rapidly, likely due to the widespread availability of online services and technologies that, while enhancing our lives, reduce physical activity. Although obesity is a preventable disease, prevention relies heavily on health education and the motivation to adopt lifestyle changes. This study aims to assess awareness of obesity and the desire to change among adults in Abu Dhabi, as of September 2024.
Methods: The minimum sample size was calculated considering a level of confidence 95%, expected prevalence of 50% and precision of 0.05, final sample size was 255 participants. Data was collected through an online questionnaire using Google forms. Data analysis was conducted using Microsoft Excel and the results were presented in graphs and tables.
Results: In this study, 255 adults participated. Around 40.8% reported being on a diet, with the most commonly followed diet being a low carbohydrate diet (51.9%), Participants were aware of the importance of exercise, with most exercising 1-2 times per week. Only a small proportion have undergone medical procedure. The majority had a normal body mass index (18.6-24.9). About 84.7% of participants attempted to lose weight, primarily inspired by personal decision. Overall, participants showed good knowledge and a strong motivation to manage their weight.
Conclusions: The study showed that awareness of obesity in the Abu Dhabi community has increased and individuals are taking steps to manage their weight. Therefore, health education can make a significant impact on promoting healthier lifestyles among adults.

Keywords: Body mass index, Health education, Humans, Lifestyle, Obesity, Weight loss

INTRODUCTION

According to the World Health Organization (WHO), overweight and obesity are defined as abnormal or excessive fat accumulation that poses a health risk. A body mass index (BMI) over 25 is considered overweight, while a BMI over 30 is classified as obese.[1] Obesity has become a growing epidemic worldwide, partly explained by increased exposure to phones, tablets and other portable devices, which has significantly changed our environments in recent decades. This shift coincides with a rise in obesity rates in many parts of the world.[2,3] Obesity is a multifactorial condition influenced by genetics, nutrition, physical inactivity and behavioural factors. It is associated with hypertension, diabetes, ischemic heart disease, respiratory and digestive disorders and certain malignancies.[4]

In 2017, the obesity rate among adults in the United Arab Emirates (UAE) was 27.8%, ranking the UAE 8th globally.[5] By 2024, the rate had increased to 29.02%, placing the UAE at 48th worldwide.[5] This increase may be driven by high incomes and a luxurious lifestyle in the UAE. However, in 2024, communities in Abu Dhabi have started taking steps toward weight loss and healthier lifestyles.[6] Various studies highlight the complex factors

and prevalence of obesity in different regions especially throughout the Arab world. For example, a 2017 study on obesity prevalence and risk factors across the seven Emirates of the UAE found obesity and overweight rates of 27% and 16%, respectively, with adult females more likely to be obese than males.[4] Another study from Sharjah, UAE, conducted in July 2017, focused on weight awareness among parents and healthcare providers, reporting that 18% of children in the study were overweight or obese, with weight counselling provided to 35.5% of obese children.[7]

Another study on obesity in Gulf countries found that rapid economic growth and development have led to lifestyle changes. The rise of international fast-food chains, easy access to cars and the increased popularity of processed foods have contributed to a dramatic increase in obesity. Additionally, excessive consumption of fatty, salty and processed foods, along with reduced physical activity, are significant contributing factors.[8] In Saudi Arabia, a 2015 study found one of the highest obesity rates globally, driven by a mix of traditional and modern lifestyles and economic prosperity.

Overweight and obesity rates were higher among Saudi women than men.[9] Lastly, a study from Iraq recommended a multicomponent approach for managing obesity, as one-third of Iraqi adults are overweight and another third are obese. This study highlighted the importance of BMI and waist circumference in diagnosis and advocated for dietary changes, increased physical activity, behavioral modification, pharmacotherapy and bariatric surgery as treatment options.[10]

Interventions targeting obesity include lifestyle management, pharmacotherapy and surgery.[6] Lifestyle interventions, such as diet and exercise, qualify as first-line therapies. Dietary options include low-fat, low-calorie, low-carbohydrate, high-protein and low-glycemic-index diets, each capable of significantly impacting weight loss.[6] Pharmacotherapy is generally considered in later stages, while surgery is reserved for individuals with severe obesity.[6] Obesity is a preventable condition, with prevention guided by health education and a commitment to lifestyle changes. The general objective of this study is to assess awareness of obesity and the desire for lifestyle changes among adults in Abu Dhabi, UAE, in 2024. The specific objectives are to identify weight-loss methods, assess attempted dietary modifications, examine medical procedures used, determine the importance of exercise and understand motivations for change.

METHODS

Study design

This research is a descriptive cross-sectional study conducted in Abu Dhabi city, United Arab Emirates, through a period of one month, September-2024.

Study population and sample

The population of Abu Dhabi city constitutes approximately 65.9% of the total population of the Emirate of Abu Dhabi. Adults account for 82.7% of this population.[11] This study included all adults aged 18 years and above residing in Abu Dhabi city who agreed to participate. Individuals under 18, those living outside Abu Dhabi and those who declined to participate were excluded from the study. The minimum sample size was calculated based on a 95% confidence level, an expected prevalence of 50% and a precision of 0.05. The final sample size was determined to be 255 participants.

Data collection

Data were collected through a structured, pre-designed online questionnaire the platform used to administer the questionnaire was Google Forms, A link was then formulated and sent to the study participants.

Study tool

The questionnaire was divided into four sections.

Sociodemographic information

Collected data on age and gender.

Diet

Assessed dietary habits, including current and previous diet control measures.

Exercise

Examined participants' exercise frequency and types of physical activities.

Medical procedures

Gathered information on any medical procedures, such as injections or surgeries, related to weight management. The questionnaire was specifically designed to fulfill the study objectives, comprising closed-ended questions, multiple-choice questions and yes-or-no responses.

Study Variables

The study variables included the following.

Sociodemographic

Age and gender.

Body mass information

Height, weight and body mass index (BMI).

Diet

Type of diet currently followed and any history of diet control.

Exercise

Frequency of exercise per week.

Medical procedures

Use of injections and history of surgeries for weight management.

Desire to change

Attempts to change weight and motivations for change.

Statistical analysis

Data were analyzed using Microsoft Excel Office 16. Results were presented in tables with percentages and illustrated using graphs.

Ethical approval

All participants were fully informed about the objectives and procedures of the study. The confidentiality of the collected data was assured and it was emphasized that the data would be used only for the purposes of this research. Verbal informed consent was obtained from all participants prior to their involvement in the study.

RESULTS

A total of 255 participants completed the study, Data from all respondents were included in the analysis.

Sociodemographic data

All participants were residents of Abu Dhabi. Of these, 52.7% were female and 47.3% were male. The largest age group represented was between 18 and 28 years old, accounting for 40.4% of the participants, with a mean age of 23 years (Table 1).

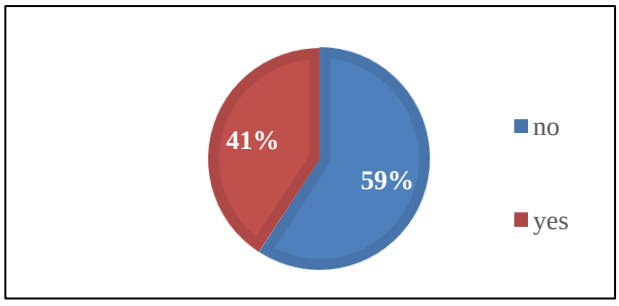

Figure 1: Are participants following that specific diet now (n=255).

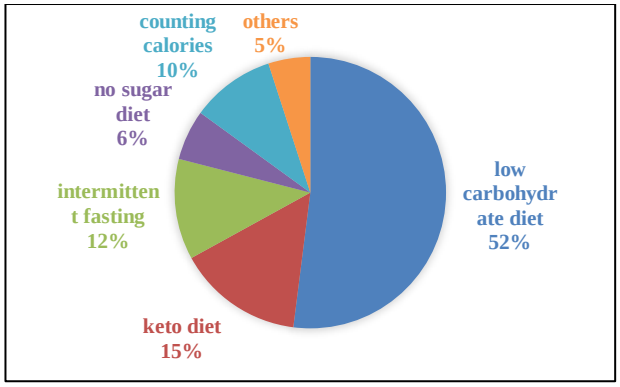

Figure 2: Types of diet the participants attempted.

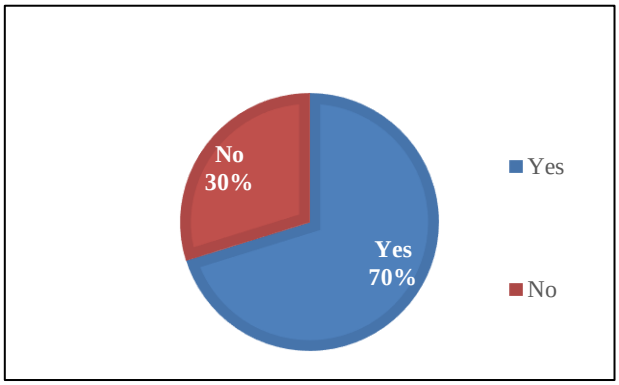

Figure 3: Does the participants usually exercise? (n=255).

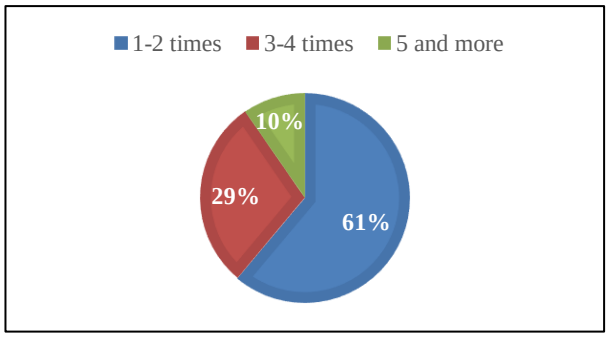

Figure 4: How many times does the participant exercise per week? (n=179).

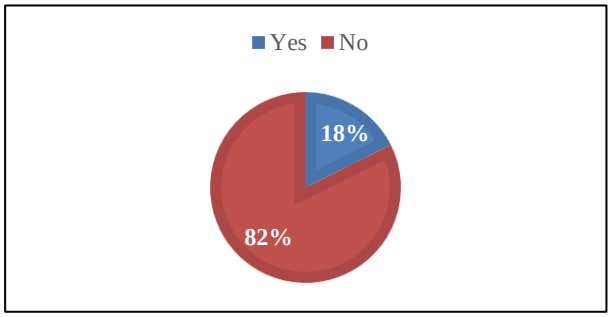

Figure 5: Did you undergo any medical procedure to lose weight (n=255).

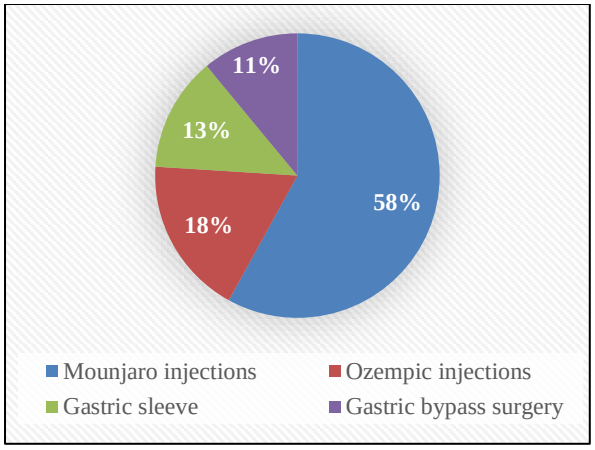

Figure 6 : Type of medical procedure that was used to lose weight (n=45).

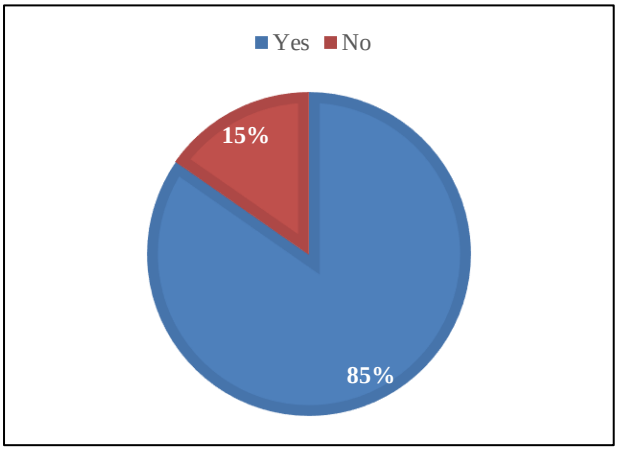

Figure 7: Attempt to change weight (n=255).

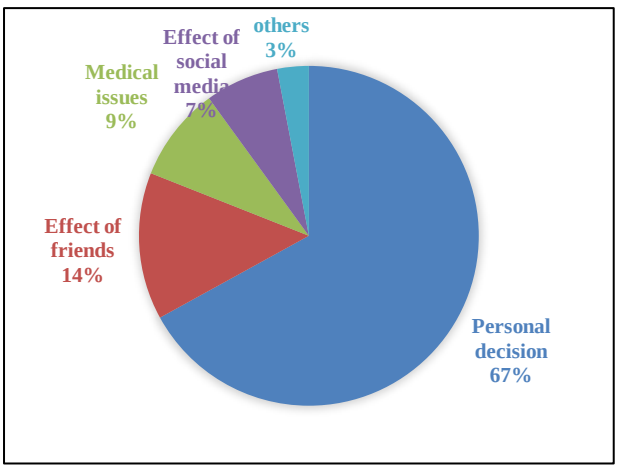

Figure 8: The inspiration to change (n=255).

Body mass information

Regarding body mass, the majority of participants (39.2%) reported heights between 160–169 cm. The most common weight ranges were 60–69 kg and 80–89 kg, with only a slight difference in frequency between these groups.

Approximately 44% of the participants had a normal BMI (18.6–24.9), as shown in Table 2.

Dietary habits

Among the participants, 40.8% were currently following a diet (Figure 1). Of those, the most popular diet was low-carbohydrate (51.9%), followed by the keto diet (15.4%).

Other diets, including intermittent fasting, no-sugar diets and calorie counting, were followed by smaller percentages of participants (Figure 2). Of the participants not currently on a diet (59.2%), a significant portion (63.4%) had previously tried dieting, while 36.6% had never attempted any diet.

Exercise patterns

A majority of participants (70.2%) reported engaging in regular exercise (Figure 3). Most of these participants exercised one to two times per week (61.1%), followed by three to four times per week (29.3%), with a smaller group (9.6%) exercising five or more times per week (Figure 4).

Medical procedures for weight management

Most participants (82.4%) reported not having undergone any medical procedures for weight management. However, 17.6% had used medical interventions (Figure 5).

Among these, the majority (58%) used Mounjaro injections, followed by Ozempic injections (18%). A smaller percentage had undergone surgical procedures, with 14% having a gastric sleeve and 9% a gastric bypass (Figure 6).

Desire to change weight

Eighty percent of participants expressed a desire to lose weight (Figure 7). The primary motivation for this desire was personal decision-making, cited by 67% of respondents. Other motivations included influence from friends (14%), social media (7%) and medical issues (9%), with a few participants mentioning other factors (Figure 8).

Table 1: Sociodemographic data (n=255).

Characteristic	Category	Frequency	%
Gender	Female	134	52.7
	Male	121	47.3
Age (in years)	18–28	103	40.4
	29–38	61	23.9
	39–48	36	14.1
	49–58	29	11.4
	59–68	26	10.2

(y: years old)

Table 2: Body mass information (n=255).

Characteristic	Category	Frequency	%
Height (cm)	less than 150	3	1.17
	150- 159	58	22.7
	160-169	100	39.2
	170-179	53	20.7
	180-189	34	13.3
	190-199	7	2.7
Weight (kg)	less than 50	21	8.2
	50- 59	34	13.3
	60-69	51	20
	70-79	43	16.8
	80-89	54	21.2
	90-99	31	12.15
	100 and more	21	8.2
Body mass index	Under weight (Below 18.5)	9	3.5
	Normal (18.6-24.9)	113	44
	Over Weight (25-29.9)	74	29
	Obese (30 and above)	59	23

(cm: centimetre) (kg: kilogram)

DISCUSSION

This study assessed awareness about obesity and the desire to change among adults in Abu Dhabi, United Arab Emirates.

The findings reveal that 44% of respondents have a normal body mass index (BMI) (18.5–24.9), indicating some success in weight management efforts. This contrasts with a study conducted in Iraq, where one-third of the community was classified as overweight and another third as obese, reflecting potentially varied regional approaches and awareness regarding weight management practice.[10]

Dietary interventions are a common approach among participants, with 40.8% currently on a diet. The most popular choice is the low-carbohydrate diet (51.9%). Low-carbohydrate diets are recommended as a therapeutic dietary approach, with increasing evidence supporting their potential application in the management of obesity, diabetes, cardiovascular diseases, gastrointestinal disorders, lung diseases and certain types of neoplasms.[12]

Evidence indicates that dietary interventions can lead to an average weight loss of around 4.8 kg, though results can vary from -0.7 to 16 kg depending on individual adherence and lifestyle factors.[13] However, a large portion (63.4%) of those who were previously on a diet no longer maintain it, suggesting challenges in sustaining dietary changes. This highlights a need for greater support, potentially through dietary counselling, to improve adherence to weight management programs.

Physical activity awareness among participants is high, with 70.2% engaging in regular exercise, primarily one to two times per week. While this level of activity demonstrates a commitment to fitness, it provides numerous health benefits, including increased insulin sensitivity, reduced fat mass, improved lipid profile, enhanced fibrinolysis and lowered arterial pressure, all of which contribute to better cardiorespiratory fitness. Over time, these effects are suspected to reduce vascular morbidity.[14] Moreover, increasing the frequency or intensity of physical activity could lead to even greater health benefits.

Only a small proportion (17.6%) have undergone medical procedures for weight loss, with most opting for injections such as Mounjaro.

Mounjaro is the brand name of Tirzepatide, the only dual glucagon-like peptide-1 (GLP-1) and glucose-dependent insulinotropic peptide (GIP) receptor agonist. It can significantly reduce glycemic levels, improve insulin sensitivity, lower body weight by more than 20% and enhance lipid metabolism. Mounjaro is administered as a subcutaneous injection once a week, which aligns with its half-life of approximately five days. It offers therapeutic options for managing both diabetes and obesity.[15]

This limited reliance on medical interventions aligns with global recommendations, where lifestyle changes are preferred over pharmacological or surgical options, except in cases of severe obesity.

A significant portion of participants (84.7%) reported attempts to lose weight, largely motivated by personal choice. This self-driven motivation suggests a strong sense of personal responsibility for health and wellness. However, the increasing obesity rates in Abu Dhabi could partly be explained by participant demographics, as most respondents are females of reproductive age, whose weight can be affected by physiological changes linked to pregnancy that consider as an important factor as women gain 4.5 kg or more in one year postpartum, due to a combination of factors such as gestational weight gain, decreased physical activity and increased food intake.[8,16] This finding is consistent with previous research in the UAE, which shows a higher prevalence of obesity in women.[4] Similar patterns are observed in Saudi Arabia, where cultural and lifestyle factors contribute to a higher obesity rate among women.[9]

Obesity also has implications for reproductive health, as excess weight can cause hormonal imbalances and ovulatory dysfunction, potentially leading to infertility. For obese women facing fertility challenges, weight loss is often recommended as a primary and cost-effective intervention.[17] Additional factors contributing to weight gain include genetics, negative attitudes toward dietary habits, lifestyle choices, sociocultural pressures and poor diet adherence. As the study indicates, only 36.6% of participants have successfully maintained a diet,

underscoring the need for continuous support. Counselling from family medicine and dietary specialists could be crucial in improving long-term adherence to weight management plans. Previous studies in the UAE emphasize the importance of ongoing education and support.[7] Effective counselling should involve regular follow-up with the family medicine department to assess the impact of dietary changes on the body by monitoring levels of vitamins, haemoglobin and conducting general investigations.[18] Additionally, dietitians can play a key role by tailoring nutrition plans to meet individual needs, which not only encourages participants to maintain compliance but also addresses any negative attitudes toward dietary changes that may hinder their progress.[19]

In contrast to previous research in Gulf countries, the community in Abu Dhabi is well-educated and informed about health and the dangers of excess body weight. This high level of awareness has led to lifestyle modifications, including the use of various weight-loss methods, different diet attempts and an increased emphasis on exercise to prevent obesity, despite technological conveniences like cars, elevators, escalators and remotes.[8]

Moreover, Abu Dhabi's residents appear to be generally well-informed about the health risks of obesity. This heightened awareness has influenced the adoption of healthier behaviours, including dietary modifications and increased physical activity, helping to mitigate obesity rates to an extent.

One limitation of this study is its small coverage area as it covers the city of Abu Dhabi alone, Future research should consider expanding the coverage area to include the entire Abu Dhabi Emirate to improve the generalizability of the findings.

Additionally, the study design is cross-sectional, which limits the ability to assess the relationships between weight loss methods and outcomes. While the study highlights various weight loss attempts, it does not examine the effectiveness or success rates of each method, which could provide valuable insights.

Another limitation is the lack of consideration of factors that may influence weight loss, such as lifestyle habits, pregnancy and medical conditions that could interfere with weight management. Future studies should aim to include these variables to provide a more comprehensive understanding of the factors affecting weight loss.

CONCLUSION

Ultimately, the study's findings show that there has been a significant increase in obesity awareness among Abu Dhabi's community. Participants expressed a willingness to try various weight loss treatments and lifestyle changes, indicating that they recognize the necessity of controlling their health. However, in order to maximize these efforts, comprehensive health education and information distribution measures must be used. Such activities can promote good attitudes and practices, resulting in more effective obesity prevention and control. By providing individuals with the knowledge and assistance they need to sustain healthy habits, we can contribute to a healthier community and counteract the rising prevalence of obesity.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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