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# The influence of social media food marketing on body mass index among college students: public health and media perspectives

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**Background:** Social media marketing (SMM) has become a powerful tool for influencing food-related decisions among young people. By actively engaging users with targeted, interactive food content, it shapes individual preferences and consumption patterns. This study examines the impact of SMM on obesity development within a sample of college students, highlighting how these marketing strategies may contribute to dietary choices that affect long-term health outcomes.

**Methods:** This study used a cross-sectional design and recruited students from different colleges in a large university in the UAE. An online survey was conducted to gather participants' sociodemographic information and included an 18-item questionnaire to explore the influence of SM on students' food consumption behaviors. Obesity was measured through body mass index (BMI).

**Results:** In total, 448 students from different colleges participated in this study; 127 (35%) were male and 291 (65%) were female. The mean BMI was  $28.86 \pm 5.73$  kg/m<sup>2</sup> and more than half of the participants ( $n = 255$ , 56.9%) were classified as obese. The three most commonly used SM platforms were TikTok (41.1%), Instagram (16.3%), and WhatsApp (11.4%). Most participants ( $n = 427$ , 95%) reported that the SM platform impacted their food consumption decisions. Two-thirds (65.8%) believed that food or dishes that received more likes/shares on SM were healthier and 49% followed about and consumed the food or dishes that celebrities/influencers shared on SM. Compared with the non-obese group, obese/overweight participants were more likely to be in their first year of college, reported habitually using SM for daily decision-making, had a screen time of >4 h, and reported that SM impacted their food-related decisions ( $p \leq 0.05$ ).

**Conclusion:** Awareness campaigns should therefore focus on utilizing SM as a positive marketing tool to promote healthy dietary behaviors, provide accurate nutritional knowledge, and support healthy lifestyle choices in the student/young adult population.

## KEYWORDS

obesity, body mass index, digital marketing, social media, food consumption behavior, college students, public health and media, UAE

## Introduction

Marketing through social media (SM) plays a critical role in shaping people's daily decisions and lifestyle choices. SM offers easily accessible platforms that foster social interaction, sharing, and exchange of information, all of which can impact health-related decisions and behaviors (Razzak et al., 2023). The food-related industry has relied on SM to market their products and impact people's food choices. SM related to food and eating refers to promotional activities, advertisements, and content on SM platforms that aim to influence users' choices, preferences, and food purchasing decisions (Ashley and Tuten, 2015). This digital context offers novel and persuasive advertising designs that attract the attention of users and impact their food choices and preferences (Meléndez-Illanes et al., 2022).

Engagement with SM has been reported to influence negative dietary decisions, which may potentially lead to negative long-term health consequences including overweight and obesity (Tatlow-Golden and Garde, 2020). Obesity is a global public health problem that affects populations of all ages. The World Health Organization (WHO) reported a threefold increase in the global prevalence of obesity since 1975 (WHO Obesity Atlas, 2024). The WHO Obesity Atlas (2024) further highlighted that a high BMI is responsible for over 120 million adult person-years lost annually due to obesity-related cardiovascular and metabolic diseases. In the population aged 5–19 years, the prevalence of obesity (Body mass index (BMI) more than 25) is expected to rise from 22% (around 430 million) to over 39% (770 million) by 2035 (WHO Obesity Atlas, 2024).

Through promoting a sedentary lifestyle and influencing unhealthy people's food choices, research -evidence showed that SM engagement can lead to increased obesity in the young adult population (Jane et al., 2018). There is conflicting evidence regarding the relationship between obesity and SM engagement with food-related content. For example, people may interact with, follow, and share unhealthy food-related SM content, which may increase the risk of developing unhealthy food choices and development of the long-term impact of obesity (Allman-Farinelli and Nour, 2021; Vassallo et al., 2018). Conversely, SM engagement could be a powerful voice to talk to young adults about obesity and can be utilized as a tool for raising awareness of healthy diets, providing support, and encouraging healthier lifestyles (Indra et al., 2023; Ismail et al., 2024; Jane et al., 2018).

Young adults, including college students, are considered extensive SM users and spend most of their time outside their homes with increased screen time and engagement with SM content (Astleitner and Schlick, 2024; Jamil et al., 2022). Excessive use of SM through smartphones, tablets, and laptops electronic devices can pose a risk for college students experiencing a “digital overdose” that negatively impacts their food consumption decisions, thereby placing them at high risk for obesity (Bozzola et al., 2022).

Young people today encounter exposure to food marketing through various forms of digital media, particularly on smartphones, tablets, and other non-TV screens. Rather than watching hours of

traditional television, they spend significant time on SM platforms like Instagram, YouTube, Facebook, Twitter, Snapchat, and WhatsApp (Twenge et al., 2018). Food marketers have adapted to these new media trends, leveraging SM as an interactive tool to promote their products. This includes company-sponsored websites, apps, influencer posts, YouTube videos, blogs, advergames, and other promotional content on SM platforms. Such strategies effectively engage young audiences and influence their food choices and preferences (Drummond et al., 2020; Fleming-Milici and Harris, 2020; Robinson et al., 2017). Experts have raised concerns regarding SM as a marketing tool because much of this content can be easily shared, offer personalized content, impacting perception and potentially promoting unhealthy food choices (Ismail et al., 2024; Kulshrestha et al., 2017). Additionally, this contemporary marketing approach often appears as entertainment or messages from friends and celebrities making it more appealing and persuasive and impacting food choices (Drummond et al., 2020).

Little is known about the correlation between engagement with SM food-related content and obesity among college students in the Arabic Region. Youth obesity represents a significant public health concern in the Arabian Gulf region. In the UAE, a recent report by the World Health Organization (2024) indicated that 29.1% of young women are obese while 36.7% of young men are obese (age 18–29 years old) (BMI > 25%). The financial burdens linked to treating obesity-related comorbid conditions like heart disease, stroke, diabetes, and cancer pose a significant challenge to the country's healthcare system (Statistics-and-Research-Center, 2023). As young adults transition to college, they are exposed to new eating habits and often increase their use of SM (Astleitner and Schlick, 2024). Therefore, this study aimed to investigate the association between exposure to SM food-related content and obesity in a sample of college students from the United Arab Emirates (UAE). Results of this study can be utilized by governments and public health policymakers to actively address this problem through proper health promotion campaigns that compete obesity, regulate SM usage, and advise on the proper use of SM to boost healthy behaviors among young adults. Specifically, we hypothesized that individuals who relied on SM to guide their food consumption decisions would be more likely to be obese compared with those who did not use SM for making food-related choices.

## Objectives of the study

### Specific objectives of the current study included

- 1 Investigate the association between exposure to social media (SM) food-related content and obesity among college students in the United Arab Emirates (UAE).
- 2 Explore the impact of digital marketing through social media on food consumption decisions and its potential contribution to obesity.

- 3 Recommend strategies to regulate social media usage, manage food-related marketing, and promote healthy behaviors among young adults.

## Methodology

### Study design, setting, and sampling strategy

This study used a cross-sectional design to clarify the relationship between obesity and the use of SM to guide food-related decisions and its correlation to obesity in a sample of college students at a large UAE university. This university is a governmental institution and offers diverse specialties (e.g., business, education, engineering, agriculture, veterinary medicine, humanities, and social sciences). Convenience sampling was used to recruit participants, with an invitation to participate emailed to the entire student population through the university's Information Technology Center. The target population included all students at the selected university across all educational levels (years). Data were collected over 3 months (August–October 2023). Students were sent monthly reminder emails to increase the response rate. The required sample size calculated for this study was 385 participants, based on a 95% confidence interval (CI), standard deviation of 0.5, and 5% margin of error (Alwafi et al., 2022).

### Instruments and tools: SM and food consumption questionnaire

We adopted an online survey based on previous research examining the influence of social media on food consumption decisions among college students (Alwafi et al., 2022; Keser et al., 2020). The first section of the survey collected sociodemographic details, including age, gender, education level, daily screen time, the most commonly used social media platforms (e.g., TikTok, Snapchat, Facebook, Instagram), and the frequency with which participants use social media to make daily decisions. We also asked participants to self-report their body weight (kg) and height (cm) to allow us to calculate their BMI ( $\text{kg/m}^2$ ). Body mass index (BMI) was calculated from reported weight and height by dividing the weight (kg) by the height ( $\text{m}^2$ ), and then classified according to the World Health Organization (WHO) into four categories: underweight ( $<18.5 \text{ kg/m}^2$ ), normal ( $18.5\text{--}24.9 \text{ kg/m}^2$ ), overweight ( $25.0\text{--}29.9 \text{ kg/m}^2$ ), and obese ( $>30.0 \text{ kg/m}^2$ ) (WHO, 2010). Then BMI values ( $\text{kg/m}^2$ ) were categorized into two groups: overweight/obese ( $\geq 25 \text{ kg/m}^2$ ) and normal/non-obese ( $<25 \text{ kg/m}^2$ ).

The main section comprised 18 items that evaluated the role of SM in guiding participants' food consumption decisions (Alwafi et al., 2022; Goerke et al., 2024; Keser et al., 2020). Example items are: "The more I use SM platforms, the more I eat," "I think the foods/dishes that get more likes/shares on SM are healthier," and "I organize my diet based on the photos/videos of foods I see on SM." Responses to the 18 survey items were on a five-point Likert scale from 0 (never) to 4 (very often). The total possible score for the scale ranged from 0 to 72. We used a cutoff point of 36 points (i.e., the scale midpoint) to interpret participants' scores (Keser et al., 2020). A score  $\leq 36$  points indicated that the participant was not influenced by SM when making

food consumption decisions, whereas scores  $>36$  points indicated SM influenced participants' food consumption decisions. The lower the score, the less likely the participant was affected by SM changing their eating habits. The reliability of the scale was established in a previous literature (Cronbach's  $\alpha = 0.928$ ) (Alwafi et al., 2022).

### Ethical considerations

This study adhered to the ethical standards set by the Institutional Review Board of the selected University. Ethical approval was obtained before data collection. The invitation to participate in this study included detailed information about the study's purpose, procedures, potential risks, and benefits. The invitation made it clear that participation in this study was voluntary and the return of a completed questionnaire signified consent to participate. Therefore, separate written informed consent was not collected.

### Data analysis

Data were analyzed using SPSS version 29 (IBM Corp, Armonk, NY, United States). Categorical variables were reported as frequencies and percentages. The dependent variable was obesity status as classified by BMI category. The independent variables included the impact of SM in guiding participants' food-related decisions (scores  $\leq 36$  = no SM impact; scores  $>36$  = SM impact) and all other sociodemographic variables (e.g., level of education, gender, screen time, and habitual use of SM to make daily decisions).

Associations between the total questionnaire score and participants' sociodemographic variables were investigated with independent sample t-tests for binary variables and analysis of variance for variables with more than two categories. Binary logistic regression was used to determine factors that were significant predictors of obesity. Results were reported with 95% CIs ( $p < 0.05$ ), and the level of significance was set at 5%. The internal consistency of the scale was assessed using Cronbach's alpha. The overall Cronbach's alpha for the scale was 0.88, indicating a high level of reliability.

## Results

### Sample description and SM and food consumption questionnaire responses

In total, 448 participants were included in this study. More than half (65%) were female and 27% were in the first year of their university education. Participants' average BMI was  $28.86 \pm 5.73 \text{ kg/m}^2$  and 56.9% were classified as overweight or obese. The majority of participants (70.1%) reported that they did not have the habit of using SM platforms for making decisions in their daily lives. The majority of participants (72.5%) reported a daily average screen time of  $>4 \text{ h}$ . The three most commonly used SM platforms were TikTok, Instagram, and WhatsApp (41.1, 16.3, and 11.4%, respectively) (Table 1).

Figure 1 presents the total scores for the SM and food consumption questionnaire (mean score  $52.68 \pm 7.09$ ). This figure also shows the distribution of participants by the cutoff point (36 points). Most participants ( $n = 427$ , 95%) reported that SM impacted their food

TABLE 1 Sociodemographic characteristics of study participants (N = 448).

Variable		Frequency (n)	Percentage (%)
Sex	Male	157	35.0
	Female	291	65.0
Education	Year 1	121	27.0
	Years 2, 3, & 4	327	73.0
*Body mass index (kg/m <sup>2</sup> ) (mean: 28.86 ± 5.73 kg/m <sup>2</sup> )	Healthy weight	193	43.1
	Overweight/obese	255	56.9
Habitual use of social media to make daily decisions	Yes	134	29.9
	No	314	70.1
Screen time using social media	≤4 h	123	27.5
	>4 h	325	72.5
Most used type of social media	TikTok	184	41.1
	WhatsApp	51	11.4
	Instagram	73	16.3
	Facebook	46	10.3
	Reddit	46	10.3
	Snapchat	46	10.3
	Twitter	2	0.4

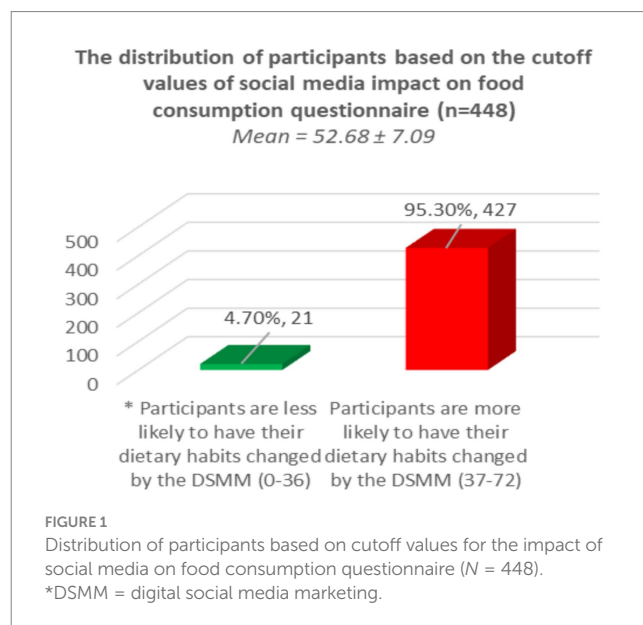
\*Body mass index category: healthy weight, 18.5 kg/m<sup>2</sup> to <25 kg/m<sup>2</sup>; overweight/obese, ≥25 kg/m<sup>2</sup>.

consumption decisions. Figure 2 shows participants' responses to individual survey items. Interestingly, 50% of participants indicated they mostly bought food products that were promoted by an SM influencer/celebrity. Around 34% were likely to recommend a diet that SM influencers promoted. In addition, 43% of the participants rarely forgot that they were hungry when using SM and 49.1% cared about and consumed the foods/dishes that celebrities shared on SM. Furthermore, 65.8% believed that the foods/dishes that received more likes/shares on SM were healthier, and 40% reported that their desire to eat increased and they ate more on the days they used SM for a long time.

## Association between BMI and food consumption

Table 2 summarizes the differences in participants' BMI by sociodemographic characteristics and scores on the SM and food consumption questionnaire. Females had significantly lower BMI values (28.08 ± 5.58 kg/m<sup>2</sup>) compared with males (30.31 ± 5.73 kg/m<sup>2</sup>) ( $p \leq 0.001$ ). There were no significant associations between BMI and the SM and food consumption questionnaire total score or any other sociodemographic characteristics.

Table 3 highlights the predictors of obesity among participants that were identified using binary logistic regression. Students in years 2, 3, and 4 were significantly less likely to be obese compared with first-year students (odds ratio [OR] = 0.157, 95%CI: 1.05, 1.30;  $p = 0.003$ ). Participants who did not report habitual use of SM



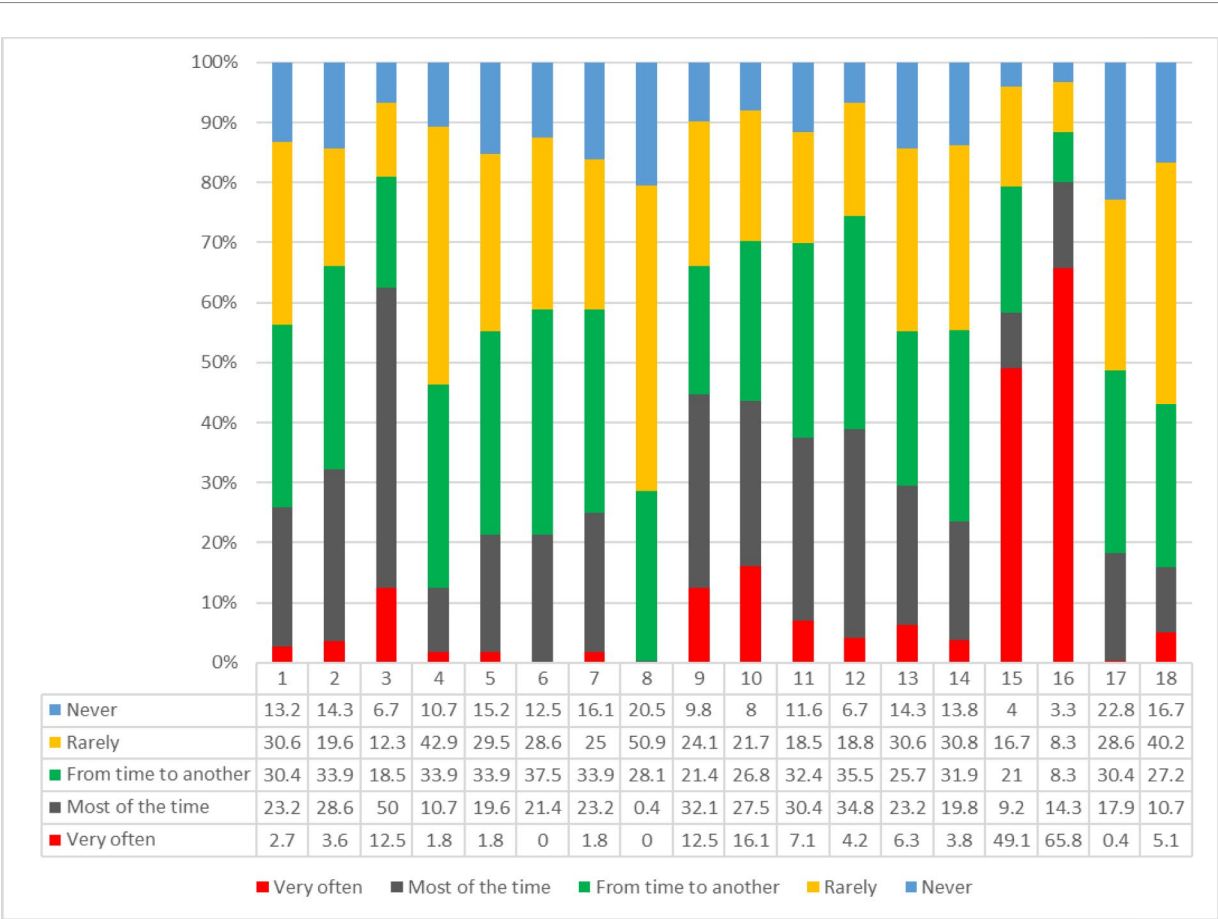
in making daily decisions were significantly less likely to be obese (OR = 0.334, 95%CI: 1.12, 1.75;  $p = 0.003$ ) than those whose decisions were impacted by SM. Participants who usually had ≤4 h of screen time/day were less likely to be obese than those with longer screen time (OR = 0.305, 95%CI: 0.99, 1.85;  $p = 0.053$ ). Finally, participants whose food consumption decisions were not affected by SM were less likely to be obese than those whose food consumption decisions were influenced by SM (OR = 0.307, 95%CI: 1.12, 1.65;  $p = 0.002$ ).

## Discussion

This study emphasized the strong association between reliance on SM for food-related information and decision-making and obesity among college students. To our knowledge, this is the first study to examine the role of SM marketing via food-related content (as measured by the influence of SM on food consumption decisions) on obesity among UAE college students. The findings highlighted the importance of educational and nutritional policies that aim to enhance young adults' digital awareness of the proper use of SM to make healthy food choices. Such policies will help to combat the rise of obesity in this population.

Concerningly, our findings revealed a high prevalence of obesity, as over half of the participating students were classified as overweight/obese based on their BMI values. These results were consistent with previous research that highlighted the high incidence of obesity among college students in the UAE, where BMI is commonly used as a measure. For example, a cross-sectional study involving female college students in Dubai (N = 251) reported that nearly one-third of the participants were obese (Al Sabbah, 2020). Another cross-sectional study involving 300 male university students (aged 18–25 years) in Al Ain found that 35.7% were either overweight or obese (Musaiger et al., 2003). In addition, a nationally representative study of the UAE population, including young adults (aged 18–29 years; total sample N = 2,142), revealed that 24.3% of young adults were overweight and 10.4% were obese (Mamdouh et al., 2023). Despite these findings,





- 1 How likely are you to try a diet promoted by a social media influencer?
- 2 How likely are you to recommend a diet that a social media influencer promotes to friends/acquaintances?
- 3 Did you buy a food product that was promoted by a social media influencer/celebrity?
- 4 When I use social media, I forget that I am hungry.
- 5 I consume any food on social media even if it is not my eating habit.
- 6 Even though I do not feel hungry, I eat food/plates of food I watch on social media.
- 7 When I see food/dish/nutrition content on social media, I read the entirety of the story.
- 8 I think the foods shared on social media are more beneficial for health.
- 9 When I see a dish on social media, I search for the recipe and its content.
- 10 After I started using social media, my consumption of fast food increased.
- 11 I follow nutrition-related content, blogs, and posts on social media.
- 12 I often eat/cook/buy the foods I watch on social media.
- 13 I organize my diet based on the photos/videos of foods I see on social media.
- 14 I constantly snack when browsing social media and realize how much I ate later.
- 15 I care about the foods/dishes that celebrities/influencers share on social media, and I consume them.
- 16 I think the foods/dishes that get more likes/shares on social media are healthier.
- 17 Foods/dishes I see on social media make me want to eat more.
- 18 On the days when I use social media for a long time, my desire to eat increases, and I eat more

FIGURE 2  
Participants' responses to social media and food consumption questionnaire items (N = 448).

there is a need for more extensive and comparative research on obesity rates among college students in this region, as many studies relied on self-reported data and involved limited samples from specific universities.

The present findings supported our hypothesis regarding the correlation between the use of SM in food-related decisions and the development of obesity. This was consistent with previous studies that established a link between SM food-related marketing and food choices and decisions. In a sample of Saudi college students (N = 316), 54% of participants reported SM food-related content impacted their

food choices and decisions (Aljefree and Alhothali, 2022). Furthermore, participants who were classified as obese reported purchasing unhealthy foods/drinks after watching relevant SM advertisements more often than their non-obese counterparts ( $p < 0.04$ ) (AlBlooshi et al., 2022; Aljefree and Alhothali, 2022). In a cross-sectional sample of Greek young adults (N = 200), 80% reported relying on SM when making food-related choices, and more of these participants tended to be obese compared with participants who did not rely on SM when making food choices (Stamatiou et al., 2022). Conversely, in a large sample of college students from the US

**TABLE 2** Distribution of BMI values by the social media impact on food consumption questionnaire scores across sociodemographic characteristics ( $N = 448$ ) (t-tests and analysis of variance).

Variable		<i>n</i>	BMI (mean $\pm$ SD)	<i>p</i> -value
Sex	Male	157	30.31 $\pm$ 5.73	<0.001*
	Female	291	28.08 $\pm$ 5.58	
Education	Year 1	121	29.07 $\pm$ 5.57	0.315
	Years 2, 3 & 4	327	28.79 $\pm$ 5.79	
Habitual use of social media in daily decisions	Yes	314	28.97 $\pm$ 5.70	0.285
	No	134	28.63 $\pm$ 5.81	
Screen time using social media	$\leq 4$ h	123	27.89 $\pm$ 6.23	0.018*
	>4 h	325	29.23 $\pm$ 5.49	
Most used type of social media	TikTok	184	29.11 $\pm$ 5.69	0.785
	WhatsApp	51	29.67 $\pm$ 6.03	
	Instagram	73	28.26 $\pm$ 5.91	
	Facebook	46	29.09 $\pm$ 5.53	
	Reddit	46	28.20 $\pm$ 5.08	
	Snapchat	46	28.37 $\pm$ 6.14	
	Twitter	2	29.00 $\pm$ 7.07	
Social media score	Social media impacted food choices (scores 37–72)	427	28.91 $\pm$ 5.71	0.243
	Social media did not impact food choices (scores 0–36)	21	27.95 $\pm$ 6.04	

	BMI	
	Pearson's correlation <i>r</i> (95 CI)	<i>p</i> -value
*Total questionnaire score	0.025 (–0.067; 0.118)	0.592

Based on bivariate correlation using Pearson's correlation coefficient. BMI, body mass index, SD, standard deviation.

( $N = 1,140$ ), most (82%) participants reported their food purchasing decisions were slightly or not at all influenced by SM (Kok et al., 2023; Riggsbee et al., 2016). Therefore, the association between SM food marketing and its influence on food choices in college students warrants further in-depth investigation. Sociodemographic factors, cultural background, and campus environmental influences (e.g., accessibility of healthy foods and peer influence) also contribute to college students' decisions related to food consumption. By addressing these factors, further studies can provide a more comprehensive understanding of the underlying mechanisms that contribute to the engagement of young adults with SM with regard to their food consumption decisions (Lee et al., 2022).

**TABLE 3** Regression analysis of factors influencing the impact of social media on food consumption ( $N = 448$ )\*.

Variables		Odds ratio for being overweight or obese (95% CI) BMI $\geq 25$ kg/m <sup>2</sup>
Sex	Male	Reference group
	Female	0.102 (0.993–1.23) $p = 0.066$
Education	Year 1	Reference group
	Years 2, 3, & 4	0.157 (1.05–1.30) $p = 0.003^*$
Habitual use of SM in daily decisions	Yes	Reference group
	No	0.334 (1.12–1.75) $p = 0.003^*$
Screen time using SM	$\leq 4$ h	Reference group
	>4 h	1.52 (0.525–1.208) $p = 0.051^*$
Reporting SM impact of food choices	Yes	Reference group
	No	0.307 (1.12–1.65) $p = 0.002^*$

CI, confidence interval; BMI, body mass index; SM, social media.

Participants in this study tended to be more engaged with TikTok, Instagram, and WhatsApp than with other SM platforms. Platforms commonly used by Saudi students were Facebook (88.6%), Snapchat (85.8%), and Instagram (75.9%) (Aljefree and Alhothali, 2022). Greek young adults indicated they mainly interacted with Instagram, YouTube, and Facebook in relation to food-related decisions (Stamatiou et al., 2022). A similar study of college students from Jordan ( $N = 1,001$ ) found that 57.7% reported using SM to decide on their food choices, with Facebook being the most commonly used platform (95.9%), followed by YouTube (94.5%), WhatsApp (94%), Instagram (82.8%), and Snapchat (77.1%); the least commonly used platforms were Twitter (22.3%), Pinterest (17.2%), and blogs/vlogs (9.7%) (Al Ali et al., 2021). In various studies of college students from the US, different SM platforms were reported to inform participants' food choices and decisions, including Facebook and Pinterest (Riggsbee et al., 2016), Facebook, Instagram, and Twitter (Wagner et al., 2016), and Instagram (Feltman and Szymanski, 2018). Instagram was reported as most frequently used by Malaysian college students (Ahadzadeh et al., 2017), and WeChat was most commonly used by Chinese college students (Niu et al., 2020). These studies showed that college students across different cultures varied in terms of the types of SM platforms that informed their food-related decisions (Ortiz et al., 2019). Further investigation is needed to determine the underlying reasons why students trust certain SM platforms when making food choices, and clarify the ways they interact with online and offline content and how this is sustained over time (Wang et al., 2022). Examining potential design opportunities to support young adults' use of TikTok, Facebook, Instagram, WeChat, and other SM platforms may enhance knowledge about factors that explain the popularity of certain SM platforms over others (Wang et al., 2022). Identifying the most popular SM

platforms may also enable the promotion of reliable and accurate healthy food content in a way that resonates with young adults, fosters engagement through likes and shares, and promotes enjoyment.

Our participants believed that SM food marketing content that had more likes and shares or was shared by celebrities was healthier, and this belief impacted their food choices and decisions. Similar results were reported in other studies involving young adults (San Wong et al., 2023). This is an important finding and warrants further attention as it remains unknown if the content posted by celebrities or that received more shares/likes is healthy and correct (Selkie, 2022). A content analysis study of foods and beverages (3,065 photos) posted by 181 celebrities (i.e., actors, actresses, television personalities, athletes, and musicians) on Instagram (a photo- and video-sharing SM platform) (Turnwald et al., 2022) reported that 87.3% of the examined content was not healthy and marketed unhealthy foods and beverages (Turnwald et al., 2022). Furthermore, that study reported an association between unhealthy food posts and followers' increased engagement and interaction. Therefore, it is critical to examine the extent to which young adults interact with SM food-related content shared by the public or posted by celebrities. Sufficient nutritional knowledge is needed among college students to combat poor eating behaviors and determine sources of accurate knowledge posted online on different SM platforms (AlBlooshi et al., 2022). Involvement of dietitians and experts in SM food-related content creation may inspire young adults to follow healthy diets, thereby contributing to reducing obesity rates in this population (Ahadzadeh et al., 2017; Burki, 2022).

In our study, the influence of SM on food consumption decisions was a significant factor that predicted obesity when we controlled for all other variables. This association is well supported across the literature (Aljefree and Alhothali, 2022; Sacks and Looi, 2020). Such findings suggest it is important to direct SM to enhance awareness about healthy nutritional knowledge among college students and encourage interaction with credible sources of information to guide food choices (Alshakhs and Alanzi, 2018). Interventions should also target students when they first enroll in university, as our study found that first-year students were more influenced by SM food-related content and tended to be more obese compared with those in later years. Offering elective courses and disseminating information on how to plan a diet and have sustainable healthy food choices among college students are also necessary (AlBlooshi et al., 2022).

Our findings also suggested that screen time and level of engagement with SM platforms should be minimized through diversifying face-to-face campus-wide activities to engage students in college life beyond screens and devices. Prolonged screen time is associated with sedentary lifestyles among university students, which leads to consumption of unhealthy food and weight gain (Ghasemirad et al., 2023). Education institutions could implement nutritional policies that foster proper food choices among college students. Directing financial resources to meet students' nutritional needs is also necessary to combat obesity among young adults. The habit of using SM in daily decisions was also an important factor in determining obesity in our sample, which was consistent with previous findings. A mixed-review study found that habitual use of

SM played an important role in food-related decisions and obesity development (Rounsefell et al., 2020). It is therefore critical to adopt a holistic SM marketing model that considers all dimensions of quality of life for young adults that may improve their overall health and well-being (Marzo et al., 2024).

## Limitations

The cross-sectional design used in this study did not allow for conclusions about the causal effects of SM use or the direction of influence for other associations with obesity. In addition, associations relied on self-report data and were therefore subject to participants' memory and self-presentation biases. Furthermore, the direction of these biases may differ by the individual and depend on participants' attitudes about the value they placed on SM use (either positive or negative). We only used BMI to determine the level of obesity; evaluation of central obesity may yield a better obesity estimate among college students. Finally, there are factors that were not assessed in this study, including the level of physical activity, campus-level variables, and other familial and cultural factors. A more representative sample from other colleges in the UAE should be included in further studies related to SM and obesity.

## Conclusion

This study offers supporting evidence for the association between college students' use of SM for making food-related decisions and obesity. Our results highlight the need for a comprehensive digital marketing model to explore the association between digital media use and development of obesity among young adults (Loh et al., 2023). Public health and educational policies should consider evaluating SM food-related content and marketing to ensure young adults engage with credible sources for nutrition and dietary information and adopt healthy behaviors. This SM marketing model should incorporate variables such as sociodemographic factors, cultural influences, peer dynamics, and the specific type of SM platform when assessing the impact of SM on dietary behaviors and obesity levels among college students. Without considering these variables, the impact of SM intervention campaigns on food choices and obesity is likely to remain limited.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

The studies involving humans were approved by the Research Ethics Committee at the University of Sharjah. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

AI: Conceptualization, Methodology, Project administration, Resources, Supervision, Validation, Writing – review & editing. WB-I: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Writing – original draft, Writing – review & editing. AA: Investigation, Writing – review & editing. SA-a: Investigation, Writing – review & editing. SI: Investigation, Writing – original draft. AdI: Investigation, Writing – original draft. HI: Investigation, Writing – original draft. HK: Investigation, Writing – review & editing. DA: Data curation, Formal analysis, Investigation, Visualization, Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

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