The use of social media to search for weight reduction information: Assessment of the perception among a sample of Saudi adults

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Abstract

Objective: To assess the patterns, prevalence, and perceptions of the benefits and risks of using social media as a source of weight loss information among Saudi adults.

Methods: In this cross-sectional study, convenient snowball sampling was used to recruit Saudi adults. A self-report questionnaire containing the following five sections was distributed: sociodemographic information, the pattern of social media use, use of social media to obtain weight loss information, perception of benefits, and perception of risks of using social media. A Chi-square test was used to identify differences according to participants' demographics.

Results: A total of 420 Saudi adults were included in the study. Most Saudi adults (43.3%) used social media for more than four hours a day, and 88.6% used WhatsApp. The prevalence of social media use for weight loss information was 89.2% among Saudi adults. Significant associations were found between the use of social media for weight loss information and age (<33 years old) and monthly income (<5000 Saudi Arabian Riyal) (p ≤ 0.012). Of the participants, 71.7% believed that social media is "always" or "frequently" an easily acceptable way to obtain weight loss information. Moreover, 36% of Saudi adults believed that weight loss information on social media could be scientifically inaccurate, and 61% believed that it could be posted solely for marketing and financial purposes.

Conclusion: The findings of this study show that Saudi adults have a high prevalence of social media use to obtain weight loss information. The benefits and risks of using social media as a source of weight loss information were also perceived to be high among Saudi adults.

Keywords
cross-sectional study, Saudi Arabia, social media, weight loss

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Introduction

Obesity is considered a major public health issue globally. Saudi Arabia has a high prevalence of obesity among adults, reaching 24.1% and 33% among males and females, respectively.¹ The etiology of obesity is multifactorial including genetic susceptibility, physiology, and environmental factors.²,³ The first line to prevent and treat obesity is lifestyle education programs.⁴ Additional possible treatment may include pharmaceutical therapy and

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bariatric surgery. For this reason, health professionals should play a key role in deploying efforts to educate communities about the importance of adopting healthy lifestyle behaviors. People with obesity frequently encounter weight bias, stigma, and discrimination due to increase body weight which has influence on physical and mental health. It has been reported that social media plays a role in promoting this stigma.

A current and recognizable challenge facing community health education is that social media has become an easy-access source for many people to search for health-related information. However, information available on different social media platforms might lack the required accuracy and quality standards from a health education perspective. For example, Allassiri and Alowfi (2019) reported that approximately 52% of a Saudi study population used Twitter as a source of health information, even when the reliability of the obtained information was reported as a major concern. Few participants experienced negative effects on their health as a result of applying inaccurate medical advice obtained from Twitter. In fact, the same study revealed that the ease of use and accessibility of health information via Twitter outweighed its reliability. Interestingly, nutrition and weight loss, healthy lifestyle, and clarifying health care misconceptions were among the topics of most interest in the digital searches, as reported by the authors of the study.

Moreover, a study assessing sources of nutritional information explored by young Saudi adults showed that most participants (92.7%) confirmed the use of online sources, including social media, to seek nutritional information. Similarly, these participants perceived nutritional information from both healthcare professionals and online sources to be very reliable. Research studies from different countries (USA, Australia, and Saudi Arabia) stated the use of several social media platforms in aspects related to health; however, no investigation has examined the use of social media to search for weight loss information among Saudis. The objectives of the current study were to assess the prevalence and patterns of using social media as a source for weight loss information among Saudi adults and to assess their perceptions of the benefits and risks related to this practice.

Methods

Participants

A cross-sectional study was conducted between January and February 2021 among Saudi adults (>18 years old) who used at least one social media program (Twitter, Facebook, Snapchat, WhatsApp, Instagram, YouTube, or Telegram). The exclusion criteria were (1) individuals with any specific chronic diseases that might influence their diet, such as diabetes mellitus, celiac disease, and Crohn’s disease and (2) working as a health care provider, including dietitians, as they presumably have background knowledge on nutrition and weight loss. An online survey (Using Google Forms) in Arabic was distributed using WhatsApp messaging. The convenient snowball sampling technique was used to distribute the questionnaires using WhatsApp messages. This sampling technique consisted of a recruitment which started by messaging groups in WhatsApp platform and therefore the participants were asked to share the questionnaire with other potential participants. The sample size was calculated as 420 with a confidence level of 95%, α-error of 5%, β-error of 80%, and population proportion of 50%.

Ethical approval was obtained from the Institutional Review Board of Princess Nourah bint Abdulrahman University (IRB approval number: 21-0022). Consent from all participants was obtained when they selected “I agree” button on the first page displayed in the online questionnaire prior to answering questions. Participation in the study was anonymous, and the collected data were kept confidential.

Research instrument

Data was collected via an online questionnaire composed of 4 sections:

1. Sociodemographic section. Questions on age, sex, region in Saudi Arabia, educational level, and monthly income.

2. Pattern of social media use. Six closed-ended questions were adapted to assess patterns of social media use, including: (a) use any form of social media platforms (yes or no), (b) duration of use (<1 year, <2 years, <3 years, >4 years), (c) daily usages on social media (up to 1 h, up to 2 h, up to 3 h, up to 4 h or >4 h), (d) type of social media use (Twitter, Facebook, Snapchat, WhatsApp, Instagram, YouTube, Telegram), (e) purpose of social media use, and (f) location of social media use (home, work). The questions were adapted from a previous study by Alshahs and Alanzi, 2018.

3. Use of social media to obtain weight loss information. Five multiple-choice questions were asked about the use of social media to obtain weight loss information. An additional seven Likert-scale questions were asked regarding the frequency of social media use to obtain weight loss information. Possible choices were always, frequently, sometimes, rarely, and never. The questions were obtained from Quaidoo, Ohemeng, Amankwah-Poku (2018), Moreland, French, Cumming (2015); Laz, Berenson (2011); and Bhaskaran, Kumar, Janodia (2017).

4. The frequency of use social media to obtain weight reduction information. Seven Likert-scale questions were asked regarding the frequency of social media use to obtain weight loss information. Questions were about the frequency of searching health information from social media, reliability of the information,
applying and the outcome of this information. Reliable sources were information from governmental, health or education institutions such Ministry of health, Saudi Food and Drugs Authority, Saudi Society of Clinical

| Table 1. Sociodemographic information and the pattern of using social media platforms (n = 420). |
|---|---|---|
| | % | N |
| **Sociodemographic** | | |
| **Sex** | | |
| Male | 16 | 67 |
| Female | 84 | 353 |
| **Region** | | |
| Central region | 78.8 | 331 |
| Eastern region | 3.8 | 16 |
| Western region | 13.6 | 57 |
| Northern region | 1.42 | 6 |
| Southern region | 2.38 | 10 |
| **Level of education** | | |
| Less than high school | 3.4 | 14 |
| High school | 23.8 | 100 |
| Bachelor’s degree | 65.2 | 274 |
| Higher education | 7.6 | 32 |
| **Income (SAR/month)*** | | |
| Less than 5000 SAR | 55.7 | 234 |
| 5000–14999 SAR | 27.6 | 116 |
| More than 15000 SAR | 16.7 | 70 |
| **Patterns of use of social media** | | |
| Use any form of social media platforms | | |
| Yes | 100 | 420 |
| No | 0 | 0 |
| Duration use | | |
| < 1 year | 0.0 | 0 |
| < 2 years | 1.9 | 8 |
| < 3 years | 3.5 | 15 |

(continued)

| Table 1. Continued. |
|---|---|---|
| | % | N |
| > 4 years | 94.5 | 397 |
| **Daily usages** | | |
| Up to 1 h | 5.0 | 21 |
| Up to 2 h | 11.7 | 49 |
| Up to 3 h | 19.5 | 82 |
| Up to 4 h | 20.5 | 86 |
| > 4 h | 43.3 | 182 |
| **The most social media platforms used** | | |
| Twitter | 17.3 | 274 |
| Facebook | 1.1 | 18 |
| Snapchat | 19.1 | 302 |
| WhatsApp | 23.5 | 372 |
| Instagram | 16.8 | 266 |
| YouTube | 14.7 | 232 |
| Telegram | 7.4 | 117 |
| **Purpose of use social media platforms** | | |
| Personal | 32.1 | 135 |
| Professional | 1.6 | 7 |
| Both (mainly personal) | 57.4 | 241 |
| Both (mainly professional) | 8.8 | 37 |
| **Place of use** | | |
| Home | 45.2 | 190 |
| Work | 1.4 | 6 |
| Both (mainly home) | 50.7 | 213 |
| Both (mainly work) | 2.6 | 11 |

*1 $US = 3.8 SAR.
Nutrition or University. Possible choices were the same as in section 3 of the questionnaire.

5. Perceptions of the benefits and risks of social media use. Perceptions of the benefits and risks of social media use were adapted from a previous study by Alshakhs and Alanzi, 2018. This section was composed of 10 Likert scale (always, frequently, sometimes, rarely, and never) questions regarding the benefits and risks of using social media to obtain weight loss information.

Statistical analysis

The Statistical Package for Social Sciences (SPSS) was used for data entry and analysis. Age is expressed as mean ± SD. Categorical variables are expressed as numbers and percentages. The Likert scale was scored as follows: always = 5, frequently = 4, sometimes = 3, rarely = 2, and never = 1. To assess the associations between sociodemographic characteristics and the frequency of use of social media to obtain weight loss information and perceptions of the benefits and risks of using social media as a source of weight loss information, sociodemographic characteristics were each categorized into two groups as follows: younger or older than the median age (< 33 and ≥ 33 years) and education level of high school or less or bachelor’s degree and higher. The income was categorized based on the lowest average of wages of Saudis as provided by the Saudi General Authority for Statistics, as follows < 5000, ≥ 5000 Saudi Arabian Riyal (SAR). Responses were categorized into three groups: always and frequently, sometimes and rarely, and never. Chi-squared tests were conducted to identify the differences between groups. Statistical significance was set at \( p < 0.05 \).

Results

Socio-demographic characteristics and patterns of social media use

Table 1 shows the sociodemographic information and patterns of social media platform use. A total of 420 Saudi adults were included in the study (aged 33.3 ± 13.4 years). The majority

| Variables                                                                 | N (%)         |
|--------------------------------------------------------------------------|---------------|
| The most social media platforms used to search for weight reduction      |               |
| Twitter                                                                  | 147 (20.4%)   |
| Facebook                                                                 | 3 (0.4%)      |
| Snapchat                                                                 | 66 (9.2%)     |
| WhatsApp                                                                 | 53 (7.4%)     |
| Instagram                                                                | 159 (22.1%)   |
| Youtube                                                                  | 276 (38.4%)   |
| Telegram                                                                 | 15 (2.1%)     |
| Find long term positive result after applying weight reduction information from social media |               |
| Yes                                                                      | 208 (49.5%)   |
| No                                                                       | 56 (13.3%)    |
| I didn’t apply                                                           | 156 (37.1%)   |
| The reliability of weight reduction information from social media        |               |
| Unreliable                                                               | 152 (36.2%)   |
| Fairly reliable                                                          | 257 (61.2%)   |
| Very reliable                                                            | 10 (2.4%)     |
| Accurate                                                                 | 1 (0.2%)      |
| How check the reliability of weight reduction information from social media |               |
| By asking family members                                                 | 50 (11.9%)    |
| By asking a friend                                                       | 25 (6.0%)     |
| By reliable online source such as ministry of health                     | 155 (36.9%)   |
| By asking health professional such as a dietitian                        | 152 (36.2%)   |
| I don’t check the reliability                                           | 38 (9.0%)     |

(continued)
were females (84%), lived in the central region (78.8%), and had a bachelor’s degree (65.2%). In this cohort, WhatsApp (23.5%), Snapchat (19.1%), and Twitter (17.3%) were the most commonly used social media platforms. All cohorts had used at least one social media application for more than 1 year. More than half of the participants (50.7%) mainly used social media at home.

The use of social media to obtain weight loss information

Table 2 presents the use of social media to obtain weight reduction information. The social media platforms most commonly used to search for information on weight loss were YouTube (38.4%), Instagram (22.1%), and Twitter (20.4%). The most common topics on weight loss that participants searched for were exercise (44.3%) and diet (39.4%). Almost half of the participants (49.5%) had positive long-term results after applying weight loss information obtained from social media. Approximately 61% of the participants believed that weight loss information on social media was fairly reliable. In addition, only 155 participants (36.9%) checked the reliability of weight loss information using reliable online sources such as the Ministry of Health, and 152 participants (36.2%) did so by asking health professionals such as dietitians.

The frequency of use social media to obtain weight loss information

Table 3 summarizes the frequency of using social media for weight loss information. Overall, 375 (89.2%) individuals used social media for weight loss information. Only 97 (23.1%) participants did not obtain information on weight loss from unreliable sources. Unreliable sources refer to influencers or websites that are unofficial or unknown specialty background.

Perceptions of the benefits and the risks social media use

Table 4 shows the perceptions of the benefits and risks of using social media as a source of weight loss information. More than half (58.1%) of the respondents “sometimes” believed that the use of weight loss information obtained from social media aided in weight loss. Only 10% of the participants “always” believed that social media was an excellent source of weight loss information. Around 34% of the responses regarding “social media is an easily acceptable way to obtain weight loss information” were “always”. On the other hand, fewer than 20 participants stated that they “always” believed that weight loss information on social media could be misleading, and that this information negatively affects body weight.

Associations between sociodemographic characteristics and perceptions of the benefits and risks of using social media as a source of weight loss information

Table 5 presents the associations between age, education, and income and the frequency of using social media to obtain weight loss information and perceptions of the benefits and risks of this practice. Participants aged < 33 years old and those with income levels < 5000 SAR were found to more frequently search for weight loss information than participants ≥ 33 years old (p = 0.012) and those with an income level ≥ 5000 SAR (p = 0.001). In addition, participants aged < 33 years old (p = 0.003) and those with income levels < 5000 SAR (p = 0.002) applied weight loss information from social media more than participants ≥ 33 years old and those with an income level ≥ 5000 SAR. Finally, participants aged < 33 years old (p = 0.004) and those with income levels < 5000 SAR (p = 0.004) obtained weight loss information from unqualified influencers on social media more than participants ≥ 33 years old and those with an income level ≥ 5000 SAR.

Participants < 33 years old believed that the use of weight loss information from social media aided in weight loss (p = 0.002) and improved overall health (p = 0.009), and were more likely to believe that social media is an excellent source for weight loss information (p = 0.026) and health awareness (p = 0.012) than participants ≥ 33 years old. Interestingly, participants with lower income levels (< 5000 SAR) were more likely to believe that the use of weight loss information from social media aided in weight loss (p = 0.033) and improved overall health (p = 0.029), and that social media is an excellent source of weight loss information (p = 0.005) than participants with higher income levels (≥ 5000 SAR).

Our findings also demonstrated that participants < 33 years old were more likely to believe that the use of weight loss information on social media could negatively affect health (p = 0.008) and body weight (p = 0.017), and that weight loss information on social media could be scientifically inaccurate (p = 0.019) and posted solely for marketing and financial purposes (p = 0.001) than participants ≥ 33 years old. Those with a bachelor’s degree or higher were also more likely to believe that the use of weight loss information on social media could affect health (p = 0.009), and that this information could be posted solely for marketing and financial purposes (p = 0.033) than participants who had less than a bachelor’s degree.

Discussion

The objectives of the current cross-sectional study were to assess the prevalence, patterns, and perceptions of the benefits and risks of using social media as a source of weight loss.
information among Saudi adults. The results of our study indicate that the prevalence of using social media for weight loss information was high (89%), and the majority of participants (73%) checked the reliability of these online resources by asking health professionals or the Ministry of Health. In addition, the majority of participants were aware of the benefits and risks of using social media to obtain information about weight loss. Young participants were more likely to use social media to search for weight loss information, and at the same time, this group also demonstrated more awareness as per the benefits and risks of using social media to obtain information about weight loss. Low-income levels were associated with a high perception of the benefits of social media use to obtain information about weight loss. Low-income levels were associated with a high perception of the benefits of social media use to obtain information about weight loss, while those with lower education levels (less than a bachelor’s degree) were less likely to believe the risks of using information from social media for weight loss.

Screening of the literature revealed that the average search for health information by Saudis via the internet and social media varies from 50% to 90%.7,12,19,20 In these studies, Twitter was the most used social media platform among Saudi adults to search for health information due to the ease of performing the search. These results are consistent with the findings of the present study.7 In addition, the present study suggests that the majority (about 90%) of Saudi adults applied weight loss information from social media, which is consistent with a previous study conducted on the Indian population. That study found that the majority of respondents agreed that they sometimes applied eating schedules and other weight loss information obtained from social media.21 This could be attributed to its low cost, feasible and the easy access to information.22 On the other hand, the accuracy of posted weight loss information on social media is a major concern, because it may lead to unhealthy weight loss behaviors. According to Miles et al.23, the majority of online diet-related information is misleading. Another study found 51% of the health information from the internet to be reliable.20 The present study’s findings suggest that more than half of Saudi adults trust the weight loss information that they obtain from social media and perceive social media as a fairly reliable source of information. This could be a public health concern because of the high probability of exposure to content that may be scientifically inaccurate. However, one of the present study’s findings may reduce that concern, as the majority of Saudi adults confirmed that they check the reliability of weight loss information by asking health professionals or by using reliable online sources, which contrasts with a recent study that showed that only 5% of people who gather weight loss information from social media discuss the information with health experts.21 This could be explained by the date of data collection. In fact, data in the current study was collected after/during COVID 19 pandemic which might have affected the awareness related to online health information. Overall, searching for weight loss information on social media has increased among Saudi adults, and age and income affect the behaviors associated with this use of social media, such as disordered eating.24 In addition, Jebeile et al. (2021) analyzed the exposure to weight loss imagery on Instagram and confirmed that this kind of exposure perpetuates disordered eating instead of health weight control behaviors.25

| Variables                                                                 | Always | Frequently | Sometimes | Rarely | Never |
|---------------------------------------------------------------------------|--------|------------|-----------|--------|-------|
| 1. Searching for health information from social media                     | 25.5   | 107        | 35.0      | 147    | 33.6  |
| 2. Searching for weight reduction information from social media           | 17.1   | 72         | 18.8      | 79     | 32.6  |
| 3. Obtain weight reduction information from unqualified influencers in social media | 4.0    | 17         | 14.8      | 62     | 30.5  |
| 4. Obtain weight reduction information from qualified influencers in social media | 26.9   | 113        | 36.9      | 155    | 26.7  |
| 5. Applying weight reduction information from social media                | 6.6    | 28         | 24.3      | 102    | 36.2  |
| 6. Check the reliability of weight reduction information from social media | 21.9   | 92         | 28.3      | 119    | 31.9  |
| 7. Trust the available weight reduction information in social media        | 4.3    | 18         | 18.1      | 76     | 53.1  |
Studies have shown that female, younger age, city dwelling, and higher education are variables associated with an increased likelihood to search for health information on the internet.\textsuperscript{12,15,22} The present study found a significant association between age and the frequency of using social media to obtain weight loss information, and the perceptions of the benefits and risks of using social media as a source of weight loss information. A recent study conducted on the use of social media among adults in the United States\textsuperscript{26} indicated the existence of a negative association between age and social media use. Another study conducted in Saudi Arabia found that respondents aged between 20 and 40 years old were more likely to use social media daily.\textsuperscript{27} Another study conducted in Scotland found that the prevalence of using the internet to search for health information was affected by age, sex, and location, which differs from the present study.\textsuperscript{15} That study found that young females who lived in the town were more likely to use the internet to search for health information.

This study has some limitations. First, the snowball sampling technique was used, which may have resulted in most of the participants being female and located in the central region of Saudi Arabia. Therefore, these results may not be generalizable. Second, the study did not assess other important measures, such as health complications associated with using invalid information from social media platforms, even though the findings of this study provide meaningful insights into the use of social media in searching for information related to health and weight loss among Saudis.

The findings of the present study show that Saudi adults have a high prevalence of using social media to search for weight loss information. In addition, as the age and monthly income of Saudi adults decreases, the use of

| Table 4. Perception of benefits and risks of using social media as a source of weight reduction information ($n=420$). |
|-------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Variables | Always | Frequently | Sometimes | Rarely | Never | $p$-value |
|-----------|--------|------------|-----------|-------|-------|-----------|
| Benefits |  | | | | | |
| The use of weight reduction information in social media help in weight loss | 6.2 | 26 | 24.3 | 102 | 58.1 | 244 | 7.6 | 32 | 3.8 | 16 | <0.001 |
| The use of weight reduction information in social media help to improve overall health | 7.6 | 32 | 36.2 | 152 | 45.0 | 189 | 8.1 | 34 | 3.1 | 13 | <0.001 |
| Social media is an excellent source for weight reduction information | 10.2 | 43 | 28.3 | 119 | 45.2 | 190 | 11.7 | 49 | 4.5 | 19 | <0.001 |
| Social media is an excellent source to increase awareness of weight reduction | 25.5 | 107 | 42.4 | 178 | 27.1 | 114 | 3.1 | 13 | 1.9 | 8 | <0.001 |
| Social media is an easily acceptable way to obtain weight reduction information | 34.3 | 144 | 37.4 | 157 | 23.6 | 99 | 3.5 | 15 | 1.1 | 5 | <0.001 |
| Risks |  | | | | | |
| The use of weight reduction information in social media could affect my health | 4.7 | 20 | 18.3 | 77 | 52.1 | 219 | 18.8 | 79 | 6.0 | 25 | <0.001 |
| The use of weight reduction information in social media negatively affect my weight | 3.1 | 13 | 11.7 | 49 | 56.0 | 235 | 22.4 | 94 | 6.9 | 29 | <0.001 |
| The weight reduction information in social media could be misleading | 4.2 | 18 | 25.7 | 108 | 56.2 | 236 | 11.7 | 49 | 2.1 | 9 | <0.001 |
| The weight reduction information in social media could be scientifically incorrect | 6.2 | 26 | 29.8 | 125 | 56.0 | 235 | 7.9 | 33 | 0.2 | 1 | <0.001 |
| The weight reduction information in social media could be for marketing and financial purpose purely | 12.9 | 54 | 48.1 | 202 | 37.4 | 157 | 1.6 | 7 | 0.0 | 0 | <0.001 |
Table 5. Association between socio-demographic characteristics and the frequency of use social media to obtain weight reduction information, perception of benefits and risks of using social media as a source of weight reduction information.

| Variables | Age | Education | Income |
|-----------|-----|-----------|--------|
|           | <33 y. (n = 240) | ≥33 y. (n = 180) | P-value | <5000 SAR (n = 234) | ≥5000 SAR (n = 186) | P-value |
|           | (n, %) | (n, %) | | (n, %) | (n, %) | | |
| The use of social media to obtain weight reduction information | | | | | | |
| Searching of health information from social media | | | | | | 0.109 |
| Always and frequently | 146 (34.8%) | 108 (25.7%) | 73 (17.4%) | 181 (43.1%) | 152 (36.2%) | 102 (24.3%) |
| Sometimes and rarely | 93 (21.1%) | 71 (16.9%) | 0.967 | 40 (9.5%) | 124 (29.5%) | 0.476 | 81 (19.3%) | 83 (19.8%) |
| Never | 1 (0.2%) | 1 (0.2%) | 1 (0.2%) | 1 (0.2%) | 1 (0.2%) | 1 (0.2%) |
| Searching of weight reduction information from social media | | | | | | 0.001 |
| Always and frequently | 98 (23.3%) | 53 (12.6%) | 46 (11%) | 105 (25%) | 97 (23.1%) | 54 (12.9%) |
| Sometimes and rarely | 113 (26.9%) | 111 (26.4%) | 0.012 | 61 (14.5%) | 163 (38.8%) | 0.142 | 106 (25.2%) | 118 (28.1%) |
| Never | 29 (6.9%) | 16 (3.8%) | 7 (1.7%) | 38 (9%) | 31 (7.4%) | 14 (3.3%) |
| Obtaining weight reduction information from unqualified influencers in social media | | | | | | 0.004 |
| Always and frequently | 58 (13.8%) | 21 (5.0%) | 23 (5.5%) | 56 (13.3%) | 0.671 | 56 (13.3%) | 23 (5.5%) |
| Sometimes and rarely | 133 (31.7%) | 111 (26.4%) | 0.004 | 68 (16.2%) | 176 (41.9%) | 133 (31.7%) | 111 (26.4%) |
| Never | 49 (11.7%) | 48 (11.4%) | 23 (5.5%) | 74 (17.6%) | 45 (10.7%) | 52 (12.4%) |
| Obtaining weight reduction information from qualified influencers in social media | | | | | | 0.430 |
| Always and frequently | 148 (35.2%) | 120 (28.6%) | 76 (18.1%) | 192 (45.7%) | 143 (34%) | 125 (29.8%) |
| (continued) | | | | | | |
| Variables                                      | Age       | Education                        | Income                  |
|-----------------------------------------------|-----------|----------------------------------|-------------------------|
|                                               | <33 y.    | ≥33 y.                           |                         |
|                                               | (n = 240) | (n = 180)                        |                         |
|                                               | (n, %)    | (n, %)                           |                         |
|                                               | <5000 SAR | ≥5000 SAR                        |                         |
|                                               | (n = 234) | (n = 186)                        |                         |
|                                               | (n, %)    | (n, %)                           |                         |
|                                               | P-value   | P-value                          |                         |
| Sometimes and rarely                          | 89 (21.2%)| 55 (13.1%)                       | 0.230                   |
|                                               | 37 (8.8%) | 107 (25.5%)                      | 0.543                   |
|                                               | 0.003     | 0.810                            |                         |
|                                               | 69 (16.4%)| 118 (26.5%)                      |                         |
|                                               | 0.988     | 1.000                            |                         |
| Never                                         | 3 (0.7%)  | 5 (1.2%)                         | 1 (0.2%)                |
|                                               | 7 (1.7%)  | 3 (1.2%)                         | 3 (0.7%)                |
|                                               | 0.543     | 0.810                            |                         |
|                                               | 58 (13.8%)| 45 (10.7%)                       |                         |
| Applying weight reduction information from social media | 0.002 | 0.935 | 0.958 |
| Always and frequently                         | 86 (20.5%)| 44 (10.5%)                       | 60 (14.3%)              |
|                                               | 168 (40%) | 168 (40%)                        | 168 (40%)               |
|                                               | 0.810     | 0.810                            |                         |
|                                               | 119 (28.3%)| 119 (28.3%)                      |                         |
| Sometimes and rarely                          | 113 (26.9%)| 115 (27.4%)                      | 16 (3.8%)               |
|                                               | 46 (11.0%)| 46 (11.0%)                       | 46 (11.0%)              |
|                                               | 0.003     | 0.003                            |                         |
|                                               | 40 (9.5%) | 40 (9.5%)                        | 22 (5.2%)               |
| Never                                         | 41 (9.8%) | 21 (5%)                          | 4 (1.9%)                |
| Checking the reliability of weight reduction information from social media | 0.935 | 0.935 | 0.935 |
| Always and frequently                         | 122 (29%) | 89 (21.2%)                       | 63 (15%)                |
|                                               | 148 (35.2%)| 148 (35.2%)                      | 148 (35.2%)             |
|                                               | 0.283     | 0.283                            |                         |
|                                               | 137 (27.9%)| 137 (27.9%)                      |                         |
| Sometimes and rarely                          | 110 (26.2%)| 78 (18.6%)                       | 44 (10.5%)              |
|                                               | 144 (34.3%)| 144 (34.3%)                      | 144 (34.3%)             |
|                                               | 0.003     | 0.003                            |                         |
|                                               | 82 (19.5%)| 82 (19.5%)                       |                         |
| Never                                         | 8 (1.9%)  | 13 (3.1%)                        | 7 (1.7%)                |
|                                               | 14 (3.4%) | 14 (3.4%)                        | 14 (3.4%)               |
|                                               | 11 (2.6%) | 11 (2.6%)                        | 11 (2.6%)               |
| Trusting the available weight reduction information in social media | 0.958 | 0.958 | 0.958 |
| Always and frequently                         | 58 (13.8%)| 36 (8.6%)                        | 25 (6%)                 |
|                                               | 69 (16.4%)| 69 (16.4%)                       | 69 (16.4%)              |
|                                               | 0.988     | 0.988                            |                         |
|                                               | 131 (31.2%)| 131 (31.2%)                      |                         |
| Sometimes and rarely                          | 168 (40.0%)| 128 (30.5%)                      | 81 (19.3%)              |
|                                               | 215 (51.2%)| 215 (51.2%)                      | 215 (51.2%)             |
|                                               | 0.988     | 0.988                            |                         |
|                                               | 131 (31.2%)| 131 (31.2%)                      |                         |
| Never                                         | 14 (3.3%) | 16 (3.8%)                        | 8 (1.9%)                |
|                                               | 22 (5.2%) | 22 (5.2%)                        | 22 (5.2%)               |
|                                               | 16 (3.8%) | 16 (3.8%)                        | 16 (3.8%)               |
| Perception of benefit                         | 0.033 | 0.033 | 0.033 |
| The use of weight reduction information in social media help in weight loss | 0.033 | 0.033 | 0.033 |
| Always and frequently                         | 89 (21.2%)| 39 (9.3%)                        | 38 (9.0%)               |
|                                               | 90 (21.4%)| 90 (21.4%)                       | 90 (21.4%)              |
|                                               | 0.988     | 0.988                            |                         |
|                                               | 48 (11.4%)| 48 (11.4%)                       |                         |
Table 5. Continued.

| Variables | Age | Education | Income |
|-----------|-----|-----------|--------|
|           | <33 y. | ≥ 33 y. | High school or less | Bachelor’s degree and higher | <5000 SAR | ≥ 5000 SAR |
|           | (n = 240) | (n = 180) | (n, %) | (n = 306) | (n, %) | (n, %) |
| Sometimes and rarely | 14 (33.6%) | 135 (26.4%) | 0.002 | 70 (16.7%) | 206 (40.0%) | 0.421 | 14 (33.8%) | 134 (26.4%) | 0.002 |
| Never | 10 (2.4%) | 6 (1.4%) | 6 (1.4%) | 10 (2.4%) | 12 (2.8%) | 4 (1.0%) | 10 (2.4%) | 6 (1.4%) |
| The use of weight reduction information in social media help to improve overall health | 0.029 |
| Always and frequently | 120 (28.6%) | 64 (15.2%) | 52 (12.4%) | 132 (31.4%) | 112 (26.7%) | 72 (17.1%) | 120 (28.6%) | 64 (15.2%) |
| Sometimes and rarely | 112 (26.7%) | 111 (46.3%) | 0.009 | 61 (14.5%) | 162 (38.6%) | 0.271 | 112 (26.7%) | 111 (26.4%) | 0.009 |
| Never | 8 (1.9%) | 5 (1.1%) | 1 (0.2%) | 12 (2.9%) | 10 (2.4%) | 3 (0.7%) | 8 (1.9%) | 5 (1.1%) |
| Social media is an excellent source for weight reduction information | 0.005 |
| Always and frequently | 105 (25.0%) | 57 (13.6%) | 50 (11.9%) | 112 (26.7%) | 106 (25.2%) | 56 (13.3%) | 105 (25.0%) | 57 (13.6%) |
| Sometimes and rarely | 123 (29.3) | 116 (48.3%) | 0.026 | 59 (14.0%) | 180 (42.9%) | 0.583 | 123 (29.3) | 116 (48.3%) | 0.026 |
| Never | 12 (2.9%) | 7 (1.6%) | 5 (1.2%) | 14 (3.3%) | 11 (2.6%) | 8 (1.9%) | 12 (2.9%) | 7 (1.6%) |
| Social media is an excellent source to increase awareness of weight reduction | 0.316 |
| Always and frequently | 176 (41.9%) | 109 (25.9%) | 80 (19.0%) | 205 (48.8%) | 166 (39.5%) | 119 (28.3%) | 176 (41.9%) | 109 (25.9%) |
| Sometimes and rarely | 59 (14.0%) | 68 (16.2%) | 0.012 | 33 (7.9%) | 94 (22.4%) | 0.583 | 64 (15.2%) | 63 (15.0%) |
| Never | 5 (1.2%) | 3 (0.7%) | 1 (0.2) | 7 (1.7%) | 4 (0.9%) | 4 (1.0%) | 5 (1.2%) | 3 (0.7%) |
| Social media is an easily acceptable way to obtain weight reduction information | 0.473 |
| Always and frequently | 181 (43.1%) | 120 (28.6%) | 86 (20.5) | 215 (51.2%) | 173 (41.2%) | 128 (30.5%) | 181 (43.1%) | 120 (28.6%) |
| Sometimes and rarely | 56 (13.3%) | 58 (13.8%) | 0.128 | 28 (6.7%) | 86 (20.5%) | 0.278 | 58 (13.8%) | 56 (13.3%) | 0.128 |

(continued)
### Table 5. Continued.

| Variables | Age | Education | Income |
|-----------|-----|-----------|--------|
|           | <33 y. (n = 240) | ≥ 33 y. (n = 180) | P-value | High school or less (n = 114) | Bachelor’s degree and higher (n = 306) | P-value | <5000 SAR (n = 234) | ≥ 5000 SAR (n = 186) | P-value |
| Never     | 3(0.7%) | 2(0.5%) | 0(0%) | 5(1.2%) | 3(0.7%) | 2(0.5%) |
| Perception of risk | | | | | | | | | |
| The use of weight reduction information in social media could negatively affect health | | | | | | | | | 0.578 |
| Always and frequently | 64(15.2%) | 33(7.9%) | 0.008 | 29(6.9%) | 68(16.2%) | 0.009 | 51(12.1%) | 46(11.0%) |
| Sometimes and rarely | 168(40.0%) | 130(31.0%) | 0.008 | 72(17.1%) | 226(53.8%) | 0.009 | 167(39.7%) | 131(31.2%) |
| Never     | 8(1.9%) | 17(4.0%) | 0(0%) | 12(2.9%) | 16(3.8%) | 0.008 | 9(2.1%) | 13(3.1%) |
| The use of weight reduction information in social media negatively affect weight | | | | | | | | | 0.323 |
| Always and frequently | 43(10.2%) | 19(4.5%) | 0.017 | 13(3.1%) | 49(11.7%) | 0.124 | 39(9.3%) | 23(5.5%) |
| Sometimes and rarely | 186(44.3%) | 143(34.0%) | 0.017 | 89(21.2%) | 240(57.1%) | 0.124 | 177(42.1%) | 152(36.2) |
| Never     | 11(2.6%) | 18(4.3%) | 0(0%) | 12(2.9%) | 17(4.0%) | 0.008 | 11(2.6%) | 18(4.3%) |
| The weight reduction information in social media could be misleading | | | | | | | | | 0.295 |
| Always and frequently | 79(18.8%) | 47(11.2%) | 0.135 | 25(5.9%) | 101(26.0) | 0.086 | 64(15.2%) | 62(16.8%) |
| Sometimes and rarely | 158(37.6%) | 127(30.2%) | 0.135 | 86(20.5%) | 199(47.4%) | 0.086 | 166(39.5%) | 119(28.3%) |
| Never     | 3(0.7%) | 6(1.4%) | 0(0%) | 6(1.4%) | 4(0.9%) | 0.086 | 5(1.2%) | 12(2.9%) |
| The weight reduction information in social media could be scientifically incorrect | | | | | | | | | 0.658 |
| Always and frequently | 99(23.6%) | 52(12.4%) | 0.019 | 37(8.8%) | 114(27.1%) | 0.536 | 83(19.8%) | 68(16.1%) |
| Sometimes and rarely | 141(33.6%) | 127(30.2%) | 0.019 | 77(18.3%) | 191(45.5%) | 0.536 | 150(35.7%) | 118(28.1%) |

(continued)
Table 5. Continued.

| Variables | Age | Education | Income |
|-----------|-----|-----------|--------|
|           | <33 y. | ≥ 33 y. | High school or less | Bachelor’s degree and higher | <5000 SAR | ≥ 5000 SAR |
|           | (n = 240) | (n = 180) | (n = 114) | (n = 306) | (n = 234) | (n = 186) |
|           | (n, %) | (n, %) | (n, %) | (n, %) | (n, %) | (n, %) |
| Never        | 0(0.0%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | 0(0.0%) |
| Always and frequently | 162(38.6%) | 94(22.4%) | 60(14.3%) | 196(46.7%) | 147(35.0%) | 109(26.0%) |
| Sometimes and rarely | 78(18.6%) | 86(20.5%) | 54(12.9%) | 110(26.2%) | 87(207%) | 77(18.3%) |
| Never        | 0(0.0%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | 0(0.0%) | 0(0.0%) |

The weight reduction information in social media could be for marketing and financial purpose purely.

The weight reduction information in social media could be for marketing and financial purpose purely.
social media to search for weight loss information increases. Most Saudi adults have used social media for more than four years and currently use it more than four hours a day. Saudi adults have strong perceptions regarding the benefits and risks of using social media as a source of weight loss information.

Due to the high prevalence of searching for and applying weight loss information from social media among Saudi adults, this study recommends the government and responsible organizations to adopt a technique to monitor weight loss information on social media. In addition, the study recommends implementing educational programs that guide Saudi adults on how to seek evidence-based weight loss information on social media and, most importantly, how to check its scientific reliability. Further studies investigating social media and weight loss information are recommended to improve the generalizability of this study’s findings.

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