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Double-tap to disordered eating: the effect of social media influencers on Palestinian female university students: a mixed-method study

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Introduction: The goal of this study is to explore how using social media and content from influencers affects disordered eating symptoms among female university students.

Methods: This was done using a combination of a purpose-built online survey (with 1,121 participants) and a qualitative content analysis of the social media influencers in beauty, health, and lifestyle that the participants follow the most.

Results: The findings revealed that 65.3% of the sample spends more than three hours per day on social media networking sites; additionally, the majority reported that they use social media as a source of reliable information, and half reported that they are influenced by social media influencers. The EDE-Q tool yielded higher scores in the weight and shape concern sub-categories, with mean scores of 1.99 (1.51) and 1.98 (1.62), respectively. In terms of content analysis, four social media accounts with a total of 218 posts were examined, yielding two main themes: photography to emphasize ideal bodies and beauty and happiness.

Conclusion: These findings emphasize the impact of social media on the studied sample and highlight the importance of implementing tailored policies to mitigate its negative effects on this group's dietary behavior.

KEYWORDS

social media, female university students, disordered eating, social media influencers (SMI), body image

1 Introduction

The global use of social media has seen a dramatic increase, with nearly 2 billion users worldwide (Primack and Escobar-Viera, 2017; Praveena, 2021). Social media usage has become universal across age groups, with individuals using various platforms for communication, entertainment, and social needs (Parihar and Rai, 2020). The framework of social networking sites (SNS) is shaped by users' various demands and expectations, which in turn goes beyond basic communication (Mushtaq et al., 2020). Demographic trends indicate that young individuals and women predominantly use SNS, with variations in reasons, motivations and privacy concerns (Gambo and Özad, 2020). University students' use of SNS is motivated by needs for interpersonal connection, enjoyment, and social elevation (Raza et al., 2020). The increased use of SNS is also true for Palestine, where in 2024, the number of internet users reached 4.82 million users, of whom were 2.2 million social media users (Data Reportal, 2024).

Social networking sites (SNS) have positive and negative impacts on users' psychological and physiological health (Erfani and Abedin, 2018). Although they allow

greater communication and connectivity, over usage is linked to many negative health and social complications, particularly among youth. These include reduced sleep quality, psychological distress, anxiety, depression and lower self-esteem (Kumar Swain and Pati, 2019). Users might also experience constant need to check the news, emotional pressure, anxiety from social comparisons, depression from online violence, and social isolations in some cases (Pang, 2022). Additionally, social media use among youth has significant influence on nutrition-related issues. Research has indicated a significant association between higher social media use and increased eating concerns in young adults (Sidani et al., 2016). It can also have problematic dietary habits and food patterns (Yıldıran et al., 2024).

Furthermore, a study indicates that platforms like Instagram, Telegram, and YouTube, that mainly present visual-based contents, are widely used, with many individuals spending 3–4 h daily on social media (Elkatmış, 2024). With a wide range of content and information from "influencers" that create social waves and trends that promote specific beauty standards, healthy lifestyles, fitness, and food patterns (Dailah Sr and Naeem, 2021). Easy access and algorithms on social media and features like the "double-tap for likes" contribute to the rapid spread and magnification of these trends (Upagna and Gaikwad, 2024). The issue may concern cultural appropriation and the promotion of potentially harmful beauty standards (Henriques and Patnaik, 2020).

There is comprehensive international research that has examined the impact of SNS use on various populations, particularly youth and university students; yet, there remains a gap in understanding this field within the unique socio-cultural context of Palestine. This gap is especially important regarding Instagram, which is one of the most commonly used SNS platforms; 45.1% of Palestinians use Instagram, with 46% of these users being females, and 71% of the female users are aged between 18 and 35 years old (Ipoke, 2019). Although there are few recent studies conducted locally, they are purely quantitative and focus narrowly on one dimension of the issue (Mahmid et al., 2021; Alwafa and Badrasawi, 2023). This highlights the urge for more nuanced and context-sensitive exploration. This mixed-methods study aims to address this gap by exploring SNS use among female university students and the potential impact it has on their lives, including beliefs linked to health and nutrition, and how these, in turn, may contribute to disordered eating behaviors. Additionally, the content of selected Instagram accounts will be systematically analyzed and contextualized to assess their potential influences on the target group being studied.

2 Literature review

Social media, particularly Instagram, with its image-centric and algorithmically curated content, has significantly impacted young people's body image and wellbeing. Research shows that browsing public Instagram content is associated with biased views of others' appearances and disordered eating behaviors (Stein et al., 2021). Frequent comparison with social media influencers' idealized images may influence shaping users' perceptions of normative appearance and self-worth (Chew et al., 2021; Stein et al., 2021). The frequency of comparing one's physical appearance to others on social media is linked to lower body appreciation and increased drive for thinness (Jiotsa et al., 2021; Pedalino and Camerini, 2022). Particularly among adolescents and young adults, misuse or intensive use of social media is related to body dissatisfaction, low self-esteem, risky behaviors, and eating disorders (Vincente-Benito and Ramírez-Durán, 2023).

To understand the impact of this digital environment, Social Comparison Theory (Festinger, 1954) and Cultivation Theory (Gerbner and Cross, 1976) offer relevant theoretical frameworks. According to Social Comparison Theory, individuals routinely compare themselves to others, with different types of comparisons serving various motivations such as self-evaluation and self-enhancement (Kretz, 2020). Instagram's visual culture fosters upward social comparisons, where users compare themselves to thinner, fitter, and often digitally enhanced peers or influencers. Importantly, these platforms provide real-time metrics like; likes, shares, and comments that serve as quantifiable indicators of social approval, shaping users' behavior and self-perception (Ballara, 2023). Cultivation Theory adds another dimension by suggesting that repeated exposure to dominant media representations can shape users' worldviews over time. Relating to Instagram, the theory implies that users may come to internalize narrow and often unrealistic standards of beauty as both normal and desirable (Nevzat, 2018). This normalization process is subtle yet powerful, particularly when exposure is prolonged and the content is presented by relatable figures such as influencers. These influencers, who are commonly perceived as genuine and trustworthy, frequently share content that aligns with thin ideals and norms that are not always culturally- appropriate, whether such content is evidence-based or health-promoting (Pilgrim and Bohnet-Joschko, 2019).

Research shows that the type and frequency of exposure to such content has been associated with increased body dissatisfaction, low self-esteem, negative mood, anxiety, and disordered eating behaviors (Wu et al., 2022). For instance, exposure to fitness inspiration ("fitspiration") or healthy eating content ("eat-clean" culture) has been linked to increased body surveillance, dieting, and disordered eating tendencies (Marks et al., 2020). Both conscious and incidental exposure to fitspiration content were linked to higher levels of weight/shape concerns and disordered eating compared to non-exposure (Gracias et al., 2024). This influence is intensified by the algorithmic customization of social media feeds, which perpetuates users' pre-existing interests and insecurities. This establishes a feedback loop wherein users are continually exposed to content that reinforces body dissatisfaction and weight management practices.

Recent studies have highlighted the complex relationship between social media use and mental health among adolescents and young adults. Appearance anxiety plays a significant mediating role between Instagram engagement patterns and wellbeing outcomes (Ryding et al., 2025). Additionally, social comparison on Instagram mediates the relationship between usage intensity and mental health indicators, including depressive symptoms, body image distortions, low self-esteem, and disordered attitudes (Stefana et al., 2022). Body image dissatisfaction has detrimental psychological, physiological, and behavioral consequences (Caltabiano and Ricciardelli, 2012).

These mental health challenges can further exacerbate the risk of disordered eating, which is defined as a range of irregular eating behaviors that may or may not include the diagnosis of a specific eating disorder (Academy of Nutrition and Dietetics, 2018). Several researchers studied the impact of social media on disordered eating (Pilgrim and Bohnet-Joschko, 2019). One of the first studies conducted in the Arab World was by Qutteina et al. (2019) who identified a link between disordered eating, Instagram and Facebook

use among 1,418 female undergraduates, where they found that hourly Instagram use was highly correlated with disordered eating prevalence.

Considering the established association between disordered eating and body image dissatisfaction, it is essential to highlight that body dissatisfactions itself is one of the main variables that is usually correlated with higher engagement in weight management programs, lifestyle modifications, and eating choices (Mostafavi-Darani et al., 2013). These body-change mindsets may involve disordered eating and restricted diets (Leal et al., 2020). Restricting calories, skipping meals, purging, smoking, or excessive exercising are a few examples (Dragone and Savorelli, 2012). Other studies used content analysis to understand social media and disordered eating (Mota et al., 2019; Pilgrim and Bohnet-Joschko, 2019). Pilgrim and Bohnet-Joschko used quantitative and qualitative content analysis to explore the content of German social media influencers about diets and fitness. 84% of female Instagram influencers' content is on health, according to this study of 50 accounts. Among other findings, their study revealed that influencers published images of themselves in gyms to propagate an ideal body, where "almost 90% of the analyzed contributions show influencers with at least one exposed body part."

Mota et al. (2019) examined three Instagram food influencers' content and follower's reviews. They identified five influencer content word classes, including "pregnancy," "recipe," and "diet." Posts use "diet" to refer to food practices and ingredient reduction. Interestingly, only one of the three influencers is a nutritionist. Influencer followers believe body image affects social media content creation and consumption. Instagram comments like "'I want to have this belly' 'beautiful' 'wonderful' (p. 11)" are turning influencers "model[s] of inspiration" by focusing on their bodies.

While the associations between social media and disordered eating are well-established, few studies have examined the potential influence of Instagram use in Palestine and if it does serve as an impactful space for social comparison and body ideal cultivation. Therefore, this study aims to further explore the relationship between Instagram use and disordered eating patterns among young adults in a Palestinian-specific context, using a mixed-method approach. Addressing this gap is essential for developing more nuanced interventions and public health strategies that consider the diverse lived experiences of social media users.

3 Methodology

3.1 Study design

This study employed a mixed-method methodology, utilizing a purposefully constructed digital survey to examine the extent of social media usage and patterns, and the frequency and severity of disordered eating behaviors for the quantitative component. The qualitative portion consisted of a content analysis of social media posts, as explained in details in section 2.2. Quantitative data was employed to quantify usage, and identify patterns and relationships, whereas qualitative data was utilized to provide contextual understanding and underlying views and perceptions.

This dual approach strengthens the validity of the results through methodological triangulation and allows for a more nuanced interpretation of the findings.

The study recruited a convenient non-random sample of female undergraduates (aged 18–25 years). Invitations were distributed to major universities by student numbers and across different geographic locations (North, Centre and South) representing the West Bank and Gaza Strip, resulting in the participation of seven different universities.

An anonymous electronic self-reporting survey was used to collect the data, with a link provided via official university portals to enable participation of all enrolled eligible students, along with a description of the study's goal and consent form during the period between April and May, 2021. This recruitment strategy allows maximum reach and relevance, however, it could favor participation of students who are more engaged with university communication channels. Prior to the start of the study, a pilot test was carried out to ensure the reliability of the questionnaire and make minor changes where needed.

A total number of 1,146 responses were received by the researchers. Students with known chronic diseases, as well as those who were pregnant or lactating at the time of data collection, were excluded from the study sample. To ensure the reliability of the survey results, a sample size of 1,121 students were selected in this study. The sample size was calculated using Roasoft, with a confidence level of 95%, and accounted for a margin of error of 5%.

3.2 Study measures

3.2.1 Quantitative measures

The questionnaire was developed based on a thorough literature review related to social media use and intersection with disordered eating. Considering the main objectives of the current study, there were three main sections to the questionnaire.

3.2.1.1 First section focused on social media quantification

Questions included hours of usage and platforms most frequently used. Participants also reported the names of top local accounts they follow in the fields of beauty, health, and lifestyle for content analysis purposes.

3.2.1.2 Second section on social media use patterns, impact, and behavior

The section consisted of two parts, the first assessed social media use patterns, which consisted of 15 questions, while the second part evaluated its impact on participants, which consisted of 7 questions. All items in this section were scored on a four-point Likert scale, with a higher score indicating greater use and impact (strongly agree = 3, agree = 2, do not agree = 1, and strongly disagree = 0). The reliability for each scale was determined separately using Cronbach's alpha. The reliability for the social media use section and the social media impact was 0.83, 0.86, respectively.

3.2.2 Third section on disordered eating

The Eating Disorders Examination Questionnaire (EDE-Q 6.0) (Child Outcomes Research Consortium, 2025) was translated into Arabic by back-to-back translation by a bilingual researcher (English/Arabic) and a translator and then reviewed by six different professionals (Public health, psychologist nutritionist, research methods and social media experts) for use in this section, any

discrepancies in wording were resolved through consensus. This tool provides a global score that gives information on the frequency and severity of key eating disorder behaviors over the previous 28 days which indicates a form of disordered eating. It also provides scores for four sub-categories: restraint, eating concern, shape concern, and weight concern. A higher score indicates more problematic behaviors, and it is calculated using response frequency. Additionally, clinically significant cases can be identified for each of the sub-categories using the cut-off of ≥4.0 (Fairburn et al., 2014). The Cronbach's alpha test was then used to assess reliability of disordered eating scores, which was 0.91.

3.2.3 Qualitative measures

Deductive qualitative analysis was used through content analysis to determine the internalization of ideal-body image through various online content, such as language (hashtags and captions), images (body representation, and angles), and descriptions of body images, and to investigate the internalization of messages on social media that can influence female eating habits. Conventional content analysis was used. The study focused on analyzing Instagram accounts, given that Instagram is the most popular social media platform among the study sample.

Four influencers were chosen for the content analysis with a total of 218 posts covering all content posted by those influencers' posts between the period of December 2020 and June 2021 to capture seasonal variations in body content and eating rituals. Participants were initially asked to list accounts followed on social media in the domains of beauty, health, and lifestyle. This resulted in a collection of influencers based on actual user engagement. Accounts were then evaluated to confirm their relevance with the study's emphasis on body image content and suggested domains. The four local influencers on Instagram with the highest follower numbers were subsequently chosen for analysis. This method improves ecological validity by concentrating on content that is extensively utilized by the intended audience.

While limited in number, the selected accounts were chosen for their reach, relevance, and ability to support in-depth thematic analysis. This approach is consistent with qualitative methodology aimed at uncovering how and why certain narratives dominate, rather than how many accounts perpetuate them.

The content of those influencers on body size, beauty, and eating habits has been anonymously coded and compiled into a qualitative content analysis codebook using excel. Furthermore, the coding process conducted by two trained coders included the influencers' emphasis on specific parts of their bodies, as well as whether wellness and fitness in the contents are associated with slim bodies, and whether the influencers recommend or sell specific products for weight control. In addition, the study focused on coding what is associated with health and beauty, as well as whether the word "confidence" is associated with physical appearance. However, Instagram influencers' daily stories and highlights were not considered in this study.

3.3 Ethical approval

The study protocol was approved by the Institutional Review Board (IRB) ethical committee at An-Najah National University. Privacy, anonymity, and confidentiality were rigorously maintained throughout the study.

3.4 Data analysis

The SPSS, version 24 was used to analyze data analysis. Descriptive analysis including means and standard deviations were used to analyze continuous dependent and independent variables. The categorical data were described by percentages. Chi-Square test was employed to examine the association between the categorical variables and the nominal levels, with a significance level of 0.05.

4 Results

A total of 1,121 female college students from various Palestinian universities have participated in the current study. 58.6% from An-Najah National University, the largest university in the West Bank, 24.6% from Birzeit University, and 18% from other universities in the West Bank and Gaza strip.

4.1 Social media quantification

Figure 1 illustrates the distribution of participants according to their use of different social media platforms. Additionally, 65.4% of the sample said that they spend more than 3 h daily on social media platforms.

4.2 Social media use patterns, impact, and behavior

The second section of the questionnaire assessed participants' social media use patterns, impact and behavior. Participants tend to depend on social media platforms as a reference to obtain information on various issues, including social and health information, as they mostly answered questions like "I prefer to use social media over official websites to get various information," "I trust the health information available on social media more than other information" "In general, I think that influencers are trustworthy," "I compare my body shape with the influencer I follow," and "People judge my body based on what they see on social media" with "agree" or "totally agree." The scores presented in Table 1 were calculated using Likert scale, with the highest score for each single item being 3, as previously described in the method section 2.1.2. The use pattern score was derived from a total of 15 questions yielding a maximum score of 45. Similarly, the impact score was based on 7 questions with a maximum score of 21. Mean score of participants' use of social media for information was 20.32/45, which may indicate that half of participants perceive social media influencers as a reliable source of information.

There was a broad distribution of the level of agreeing on the impact of social media on participants' health and buying decisions, including their answers on the following questions "I have previously followed advice from an influencer on social media regarding my body shape or diet," "I prefer to own food products owned by some social media influencer." The mean score for social media impact on

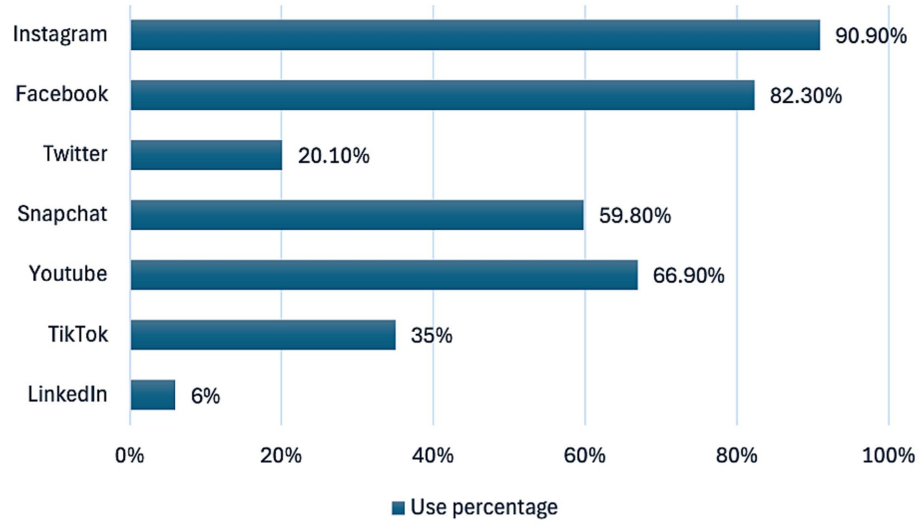

FIGURE 1
Participants use of social media.

TABLE 1 Results of social media dependency.

Score	Mean (SD)
Use score (out of 45)	20.32 (6.7)
Impact score (out of 21)	7.33 (4.3)

TABLE 2 Mean scores of the global EDE-Q and its sub-categories.

Score	Mean (SD)	Clinically significant percentage
Global EDE-Q	1.67 (1.36)	
Restraint	1.35 (1.55)	9.2%
Eating concern	1.37 (1.38)	7.0%
Weight concern	1.99 (1.51)	13%
Shape concern	1.98 (1.62)	15.3%

TABLE 3 The number of posts selected, and the number of posts emphasized certain parts of influencers' bodies.

	# of total posts in the selected period	# of posts emphasizing certain parts of her body
Influencer A	67	7
Influencer B	85	27
Influencer C	36	18
Influencer D	30	12

participants' opinions, behavior and knowledge beliefs was 7.33 out of 21.

4.3 Disordered eating

Table 2 shows the EDE-Q scores of our sample, including the global EDE-Q score and the 4 sub- scores (restraint, eating concern, shape concern, and weight concern) as explained in the methodology section. Additionally, each sub-clinical scale's significant participants were identified in Table 2.

4.4 Content analysis

A content analysis of posts of the highest-profile social media influencers followed by our study sample was conducted as part of the study. In addition to the high use and impact of social media on this study participants, Instagram is identified to have a particularly strong effect on body image and disordered eating, possibly in relation to the visual effect (Turner and Lefevre, 2017). Therefore, the content analysis was conducted on posts published on Instagram between December 2020 and June 2021 by the four most-followed influencers by our sample, with a total of 218 posts included.

These posts included photos, videos and reels. In the sample analyzed, the four influencers did not give direct advice regarding body size, beauty, or eating habits in the contents during the study period. Meanwhile, 64 out of 218 posts of the four influencers' analyzed content emphasized certain parts of their bodies (Table 3). Also, the analysis has revealed that there is an indirect association by influencers' use of the word "confidence" and "beauty" with posts related to external looks, and wellness with slim bodies. One of the influencers for instance posted a photo of herself captioning: "You can tell I lost weight." Overall, two themes have been developed. These themes were as follows: *Beauty and happiness* and *Photography to emphasize ideal bodies*.

4.4.1 Theme 1: beauty and happiness

The results have revealed that there seems to be a clear association between beauty and happiness according to influencers' standards. This can be observed in the repetition of certain words and hashtags used by the influencers. These words were such as happiness, vibing, summer vibes, fairytale, self-love, self-care, happy life. Although the analysis did not show that there is a use of the word "confidence" with

external looks, there seems to be an implicit association between "confidence" and external looks. For example, it was noticed that the word "slay" was used to describe a photo showing an influencer's body. Importantly, beauty was also associated with femininity, and freedom. This can be seen heavily in influencers' A, B, and C posts. In most posts, the four influencers looked very happy. Interestingly, influencer D described her content as beauty and health, emphasizing the link between both components for the followers.

4.4.2 Theme 2: photography to emphasize ideal bodies

The analysis showed that the four influencers relied on using photos to emphasize ideal bodies, through focusing on certain parts of their bodies. This can be highly noticed in influencer B as half of their posts highlighted body curves, thin legs and flat stomachs, whereas a significant number of influencer A and C posts focused on flat stomachs. The emphasis on certain parts of bodies reinforces specific standards of beauty.

Our analysis demonstrates a statistically significant correlation between participants with clinically significant scores in the shape concern category and dependency on social media. We also found a higher influence of social media influencers on the buying and dietary self-reported intentions of participants with clinically significant shape concern scores, compared to those with non-clinically significant scores ($p = 0.000$).

5 Discussion

The findings of the present study highlight the prevalent role of social media in the daily lives of participants, who are exposed to hundreds of different media messages each day. Notably, 65.4% of respondents reported spending more than 3 h per day on social media platforms, underscoring a substantial amount of time dedicated to engaging with digital content. This level of exposure raises important concerns, as a growing body of literature has documented the significant impact of social media on individuals' behaviors, particularly in the context of psychological and physical wellbeing (Akram and Kumar, 2017; Cheng et al., 2019; Siddiqui and Singh, 2016). These findings also align with the principles of cultivation theory, which states that long-term exposure to media content can gradually shape users' perceptions of reality (Nevzat, 2018). Within the context of Palestinian university students, this influence may manifest in the internalization of idealized body images and beauty standards portrayed by social media influencers. These portrayals frequently emphasize slim physiques, particularly features such as flat stomachs, which may, in turn, influence students' perceptions of attractiveness, self-worth, and confidence. Consequently, the findings suggest that repeated exposure to such content could play a formative role in shaping body image ideals, hence also shaping eating habits trying to achieve these body image ideals. In a way that appears quite conventional, yet is, in reality, manipulative by the "elite" opinion leaders, and, in this instance, social media influencers. Gamson et al. (1992) reiterate that: "We walk around with media-generated images of the world, using them to construct meaning about political and social issues. The lens through which we receive these images is not neutral but evinces the power and point of view of the political and economic elites who operate and focus it. And the special genius of this system is to make the whole process seem so normal and natural that the very art of social construction is invisible" (p. 373).

The results of the current study revealed that participants tend to compare their body shape with the influencer they follow. This aligns with the finding of Howard et al. (2017) that regardless of race, women "can engage in social comparisons and seek feedback from "like others" on SNS" (p. 112). Significantly, respondents in this study mostly answered "agree" and "totally agree" to the statement "I compare my body shape with the influencer I follow," which aligns with the principles of social comparison theory (Festinger, 1954). According to this theory, individuals have an innate drive to evaluate themselves, often in comparison to others, particularly when objective standards are not available. In the context of social media, influencers often serve as reference points for physical appearance and lifestyle.

As a result, users may engage in upward social comparisons, meaning, comparing themselves to individuals they perceive as more attractive or successful, which can negatively impact body image and self-esteem. This is especially relevant for young adults, who are in a critical phase of identity formation and may be more vulnerable to internalizing unrealistic beauty standards promoted online (Vincente-Benito and Ramírez-Durán, 2023). Based on the findings, one could argue that Palestinian female students feel pressured to have a certain body type, characterized by a flat stomach. This could also be explained to social norms in Palestine, which pressure females more than males to comply with standards regarding their looks.

The impact of social media on disordered eating in particular have been thoroughly explored (Howard et al., 2017; Pilgrim and Bohnet-Joschko, 2019). Qutteina et al. (2019) found out that there was a significant relationship between the use of Instagram and Facebook and disordered eating. Similarly, the present study revealed that there is a significant relation between the use of social media networks and disordered eating; as the results illustrated earlier, participants with clinically significant shape concern scores reported a markedly stronger influence p-value ($p = 0.000$) from social media influencers, particularly regarding their dietary intentions. These results point toward a potentially reinforcing cycle, in which heightened body image concerns drive more social media consumption, which in turn may exacerbate those very concerns through exposure to idealized and often unrealistic body representations. In addition, Qutteina et al. (2019) study also found out that the hourly use of Instagram had a significant relation with the levels of disordered eating. This aligns with our findings since Instagram was the most used by the participants. This is extremely alarming to the effect of disordered eating behaviors and other eating choices, lifestyle modifications and body dissatisfaction (Mostafavi-Darani et al., 2013). This in turn is linked to other psychological issues; negative body image and reduced self-esteem, especially among women (Mills et al., 2017).

The association between social media exposure and disordered eating was also present in previous studies in the region. For example, a study titled on the association of internet usage and disordered eating found that "problematic internet use" correlated positively with eating disordered behaviors (Mahmid et al., 2021). Interestingly, in their study Al-Bisher and Al-Otaibi (2022) investigated eating concerns associated with nutritional information obtained from social media among young Saudi females, and found that there are moderate to high eating concerns among the sample, with the primary risk factor for these concerns being following social media

posts on meals and diets promoted by influencers and celebrities. This finding sheds light on the significance of social media influencers in shaping social media users' internalization of messages, as seen too in our results.

Furthermore, a study of patterns of disordered eating across West Asia found a high prevalence of disordered eating in the region compared to global rates (Alfalahi et al., 2021). A literature review of disordered eating research in Arab countries, revealed that one-third of females exhibited restrained eating behavior, with 13–50% considered at risk of eating disorders (Melisse et al., 2020). For example, a study in Saudi Arabia from 2021 studied disordered eating behaviors among male and female university students, taking a sample with a mean age of 24.7 years. The EDE-Q scores of the sample were higher than the sample of our study globally, and in each sub-category. The authors noted that the EDE-Q scores in their sample were notably higher than those obtained in other global contexts including regional neighbors. They were unable to fully explain the factors contributing to this and whether these results were specific to the sample or generalizable to a broader country or regional context.

Compared to international research, a study conducted in Norway surveyed a large sample of women aged 16–50 years, with the 16–20- and 21–30-year-old sub-groups being the closest to our sample. The scores in these sub-groups were similar to our sample, except for shape concern, which had a higher reported score in our study. However, there was a different prevalence across the two samples of individuals whose scores are classed as clinically significant (Rø et al., 2012). Our sample contained a higher proportion of clinically significant scores for restrained eating (9.2% vs. 3.73%) and eating concern (7% vs. 2.8%), while the Norwegian sample had a higher proportion of clinically significant weight concern (22.7% vs. 13%), with similar proportions of clinically significant shape concern (15.3% in our sample vs. 17.2%). It is interesting to note that, in the Norwegian study, the 21–30 group had generally lower scores than the 16–20 group.

Additionally, a study in the USA assessed EDE-Q scores among 18–26-year-olds, categorizing them into four groups according to their levels of physical activity: low, recreational, competition-level, and recreational + competition-level. The closest comparisons to our sample are assumed to be the groups undertaking low and recreational physical activity (Darcy et al., 2013). Our sample had higher scores compared to the low activity group except for shape concern, with particularly low scores for eating concern in the USA sample. Compared to the recreational level of physical activity, our sample had lower EDE-Q and sub-category scores.

On the other hand, many studies have tried to validate EDE-Q by making comparisons between samples within and between countries. However, they generally arrive at the same conclusion that it is extremely difficult to establish norms related to disordered eating due to the different influences of many factors. These include, as already mentioned, the specific sample under consideration, weight, as well as other individual factors, such as exercise and age, and broader factors such as the cultural and country context in which studies are conducted. A 2020 study observed positive associations of disordered eating with "increased affluence, western influence, media use, obesity" (Melisse et al., 2020). According to the Tripartite Influence Model, these cultural influences contributing to disordered eating can be channeled through "three formative influences (peer, parents, and media)" (Keery et al., 2004). A study in UAE supports this model, where it found that the strongest influences on body shape concerns were family and the media (Hasan et al., 2018). This would include social media, which has been emphasized in multiple studies. In fact, a comparison between social media and conventional media found that appearance comparison, body image dissatisfaction, and higher eating disorder risk were found to be associated with using Facebook but not conventional media (Cohen and Blaszczynski, 2015). This is in line with a study from Iran on a sample of 24-34-year-olds from the University of Tehran, which found an effect of exposure to social media depictions of ideals of attractiveness on body dissatisfaction and eating behavior (Sharifi et al., 2016).

In regards to the outcomes of the present study are in line with those of other studies. A scale measuring the pressure exerted by media influence was found to be linked to eating disorders via both emotional and restrained eating in a study conducted in a university in Lebanon (Sanchez-Ruiz et al., 2019). This demonstrates that, as seen in Western culture, different types of media including social media propagate the idea of the "perfect body" and increase individuals' concerns about losing weight and/or building muscle. This is reflected in our results, as we found that influencers in fact propagate standards like thin belly and legs, curves. The emphasis on these parts of the body has been repeated several times, which has indirectly made them the norms of beauty. Also, this can be seen in the comments on some photos posted by the four influencers. For example, one influencer wrote in the comment "you can tell I lost weight," which shows that a flat stomach is a standard of beauty and fitness.

Moreover, the results revealed that social media influencers heavily focused on certain parts of their bodies. This could be found in the study of Pilgrim and Bohnet-Joschko (2019), where the results revealed that influencers published images of themselves in gyms to propagate an ideal body. Additionally, Mota et al. (2019) pointed out that body image played a major role in producing and consuming social media content in Brazil. This also aligned with the findings of this study that influencers emphasize certain parts of their bodies when presenting visual content on social media platforms.

These findings are concerning as exposure to such images can provoke undesired behaviors including disordered eating, which in turn is associated with body dissatisfaction, body image concerns, dieting, and a desire to be thin (Mantilla et al., 2017). Such concerns are highlighted by our survey, which found a high level of clinically significant scores in the shape concern category.

As far as we are aware, this is the first study to use a mixed-methods approach to deeply investigate disordered eating and the effect of social media content in Palestine. Analyzing the details of social media content, in particular, allows a deeper understanding of the ways in which social media affects people's attitudes and behaviors. Additionally, the sample under investigation was demographically representative of female university students in Palestine. The focus of the content analysis on influencers who focus on health and beauty maintained a definitive relation between the content (exposure) and effect (outcome).

However, this narrow focus may, on the other hand, mean that only a subset of the influencers which impact the study sample's attitudes and behaviors were included in the analysis. This is particularly the case since we only analyzed the content of influencers from Palestine. It is inevitable that the target group is exposed to a broader range of influencers. Finally, it has been suggested that social media use increased significantly but temporarily during the COVID-19 pandemic. We should therefore consider the possibility that the exposure, and its effects, during the study period may not be representative of long-term patterns.

This current paper has certain limitations that present opportunities for future research. First, the findings could not be generalized to the large population, since this research relies on a convenient non-random sampling of solely female undergraduates. Second, the lack of inter-coder reliability in the qualitative content analysis, which may affect the consistency of interpretations. To address these limitations in future studies, it is suggested to incorporate reliability tests for qualitative analysis, address psychological and socio-economical indicators to examine their potential effect on such population, and explore broader social media contents to include more influencers, other social media networks, time frames, audiences' comments and feedback.

6 Conclusion

This mixed-methods study explored the impact of social media influencers on disordered eating symptoms in a sample of female university students in Palestine and how such a demographic navigates body image ideals in digital spaces. The majority of the 1,121 responses reported that they rely on social media for information and advice, and more than half stated that their buying and dietary intentions could be affected by social media influencers. Additionally, two themes have emerged from the content analysis of the 218 social media posts: (1) photography to emphasize ideal bodies and (2) beauty and happiness. These results are in line with the high rates of shape and weight concerns among participants as part of their disordered eating symptoms. In the broader context of Palestine, the outcomes of this research are extremely important. The results can be used to form university-specific health initiatives, integrate media literacy within curricula, create influencer partnerships to open discussions, and develop content guidelines to distinguish between health promotion and harmful body idealization, in addition to advocacy and awareness campaigns to inform policies aiming to reduce the negative effect of social media on this group's dietary behavior, especially in the context of culturally tailored triggers.

The real significance of this study is in its two perspectives: survey data confirms what post-analysis showed, and how daily scrolling can turn into a self-worth audit. These results finally serve as a reminder that these digital platforms are not only entertainment spaces, but they can shape the decisions and health determinants of our future generations. Henceforth, the study recommends that policymakers take tangible measures to ensure responsible and effective dissemination of health information, which might include professional training programs for dietitians and active healthcare workers on social media to empower them to positively influence social media users. On the other hand, there is a need to support the development and integration of media literacy programs in education curricula to foster the consumption of social media.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by IRB Committee at Annajah National University. 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

OA: Conceptualization, Methodology, Data curation, Writing – review & editing, Formal analysis. AI: Methodology, Writing – review & editing, Data curation, Conceptualization. HA: Data curation, Conceptualization, Writing – original draft. FS: Conceptualization, Formal analysis, Writing – original draft.

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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 authors declare that no Gen AI was used in the creation of this manuscript.

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