Section: Miscellaneous

Original Research Article

A CROSS-SECTIONAL STUDY ON THE INFLUENCE OF SOCIAL MEDIA USAGE WITH BODY IMAGE AND EATING PATTERNS IN MEDICAL STUDENTS OF GOVERNMENT MEDICAL COLLEGE, NIZAMABAD

Dharnamoni Sandeep Kumar[1], Devarakonda Manisha[2], Sivasubramaniyan Kuppusamy[3], Kishore Kumar K.J[4], Manisha Bokka[5]

[1]Assistant Professor, Government Medical College, Mahabubnagar, India.
[2]Assistant Professor, Gayatri Vidya Parishad Institite of Health care and Medical technology, Visakhapatnam, India.
[3]Assistant Professor, Annapoorana Medical College and Hospitals, Salem, India.
[4]Professor & HOD, Government Medical College, Nizamabad, India.
[5]MBBS, Government Medical College, Nizamabad, India.

Received *: 05/12/2024*
Received in revised form *: 16/01/2025*
Accepted *: 01/02/2025*

Corresponding Author:
Dr. Sivasubramaniyan Kuppusamy, Assistant Professor, Annapoorana Medical College and Hospitals, Salem, Inida.
Email: dr.sivamk@gmail.com

DOI: 10.70034/ijmedph.2025.1.87

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (1); 467-472

ABSTRACT

Background: Body image dissatisfaction, exacerbated by social media, has become a growing concern among adolescents and young adults, leading to disordered eating behaviors and mental health challenges. Medical students, in particular, face unique stressors that may amplify these issues. This study aimed to explore the influence of social media usage on body image and eating patterns among medical students at Government Medical College, Nizamabad.

Materials and Methods: A cross-sectional study was conducted among 300 undergraduate medical students using a semi-structured questionnaire. The Body Shape Questionnaire (BSQ) and SCOFF Questionnaire were used to assess body shape concerns and eating disorder risk, respectively. Anthropometric measurements were also recorded. Data were analyzed using SPSS version 25.

Results: The majority of students (72.0%) reported no concern with their body shape, while 20.0% reported mild concern, 5.3% moderate concern, and 2.7% marked concern. Significant associations were found between body shape perception and disordered eating behaviors, such as self-induced sickness ($\chi^2 = 16.2$, $p < 0.001$) and fear of losing control over eating ($\chi^2 = 54.4$, $p < 0.001$). Social media usage, particularly exposure to appearance-focused content, was significantly associated with body shape concerns ($\chi^2 = 13.7$, $p < 0.001$). Urban residence ($\chi^2 = 7.09$, $p = 0.008$) and mother's employment as a government employee ($\chi^2 = 7.94$, $p = 0.019$) were also significant predictors of body shape concerns.

Conclusion: This study highlights the significant impact of social media and demographic factors on body image and eating patterns among medical students. Targeted interventions, including awareness programs and culturally sensitive strategies, are needed to promote positive body image and healthy eating behaviors in this population. These findings underscore the importance of addressing body image concerns to improve the mental and physical well-being of medical students.

Keywords: Body image, Social media, Eating behaviours, Medical students, Body shape questionnaire (BSQ).

INTRODUCTION

Body image, defined as "the mental picture one forms of one's body as a whole, including its physical characteristics and one's attitudes towards these characteristics," plays a critical role in how individuals perceive themselves, feel about their body shape, and experience their physical presence.[1] In recent years, there has been growing concern about body image dissatisfaction, particularly among adolescents, as it has been linked to low self-confidence, depression, and poor quality of life.[2] This dissatisfaction often manifests as a perceived gap between one's current body and an idealized appearance, which can lead to disordered eating behaviors such as dieting, fasting, and calorie counting.[3]

The rise of social media has further complicated this issue. Adolescents frequently post and view images on these platforms, often feeling pressured to present a "perfect" appearance. This pressure leads to carefully curated and edited posts, with increased social media exposure resulting in more feedback about body appearance. Such dynamics have been associated with higher levels of body dissatisfaction and eating disorders.[4] Studies have shown that social media use significantly correlates with body dissatisfaction, with adolescents reporting more frequent use experiencing greater dissatisfaction.[4,5]

Limited research has been conducted in regions like Telangana, highlighting the need for further exploration. For instance, a 2019 study by Dian A. de Vries et al. found a significant association between social media use and body dissatisfaction ($p < 0.001$), while also noting that positive parent-adolescent relationships could mitigate these effects.[6] Similarly, a 2022 study by Abhilasha Kapoor et al. revealed a 76.7% prevalence of body image dissatisfaction among female undergraduate students in Delhi, with media influences being a significant contributing factor.[7]

Despite the global recognition of this issue, valid statistics on the relationship between social media, body dissatisfaction, and eating disorders remain scattered, particularly among young adults in India. Medical students, as a demographic, face unique stressors such as academic pressure, long working hours, and societal expectations, which may exacerbate body image concerns and disordered eating behaviors. Understanding the influence of social media on body image and eating patterns among medical students is crucial, as it can inform targeted interventions to promote mental and physical well-being.

Aim and Objectives

The aim of this study is to examine the influence of social media exposure on body image and eating patterns among medical students at Government Medical College, Nizamabad.

The objectives of the study are as follows

1. To determine the relationship between body shape perception and various demographic variables among the study participants.
2. To assess the association between social media usage and body image.
3. To assess the association between social media usage and eating patterns.

MATERIALS AND METHODS

The present study is a cross-sectional analysis conducted at Government Medical College, Nizamabad, targeting undergraduate medical students as the study population. The study was carried out over two months following approval from the Institutional Ethics Committee (IEC), with a sample size of 300 participants selected using non-probability (convenient) sampling.

After obtaining ethical clearance, the research objectives and confidentiality measures were explained to the participants, and written informed consent was secured from all. Data collection was conducted using a semi-structured, self-prepared questionnaire that included sections on socio-demographic details, peer and family influences, and physical activity levels.

Three key tools were utilized in this study. The Body Shape Questionnaire (BSQ),[8] a 34-item pre-designed scale, assessed body shape concerns, with each item scored on a scale of 1 (never) to 6 (always), yielding total scores ranging from 34 to 204. The SCOFF Questionnaire,[9] a five-question screening tool for eating disorders, scored "yes" responses as 1 point, with a score of 2 or more indicating a risk of an eating disorder. Additionally, anthropometric measurements, such as weight and height, were recorded using a measuring tape and a calibrated digital weighing scale.

Participation was open to all consenting undergraduate students. Data collected were initially organized in Microsoft Excel and later exported to SPSS version 25 for statistical analysis.

RESULTS

The results of this cross-sectional study on body image and eating patterns among medical students at Government Medical College, Nizamabad, revealed significant associations between body shape perception and various demographic, behavioral, and social media-related factors.

Table 1 (Demography) shows that urban residence ($\chi^2 = 7.09$, $p = 0.008$) and mother's employment as a government employee ($\chi^2 = 7.94$, $p = 0.019$) were significantly associated with body shape concerns. Additionally, students in later years of their MBBS program (3rd and 4th year) reported higher levels of body shape concerns ($\chi^2 = 23.3$, $p < 0.001$). However, no significant associations were found with age category ($\chi^2 = 5.25$, $p = 0.072$), sex ($\chi^2 =$

0.948, p = 0.33), religion (χ^2 = 4.39, p = 0.222), type of family (χ^2 = 1.25, p = 0.264), mother's education (χ^2 = 0.191, p = 0.909), father's education (χ^2 = 0.42, p = 0.811), father's employment (χ^2 = 3.38, p = 0.185), or siblings (χ^2 = 0.546, p = 0.46).

Table 2 (Prevalence of Body Shape Concerns and Related Behaviors) demonstrates that a significant proportion of students reported frequent concerns related to body shape, with behaviors such as dieting (5.3% always, 5.7% very often) and fear of becoming fat (9.0% always, 6.3% very often) being particularly common. Many students also reported feelings of fatness after eating a large meal (6.7% always, 4.0% very often) or when naked (3.0% always, 3.3% very often), indicating a heightened sensitivity to body image. Extreme behaviors, such as vomiting to feel thinner (0.3% often) and laxative use for weight control (0% always, 0% very often), were rare but present in a small subset of students.

Figure 1 (Distribution of Body Shape Perception) reveals that the majority of students (72.0%) reported no concern with their body shape, while 20.0% reported mild concern, 5.3% reported moderate concern, and 2.7% reported marked concern. This distribution highlights that while most students have a positive body image, a significant minority experiences varying degrees of body shape concerns.

Table 3 (Association Between Social Media Usage and Body Shape Perception) found a significant association between watching content related to physical appearance on social media and body shape perception (χ^2 = 13.7, p < 0.001), with students who watched such content more likely to report concerns about their body shape. However, no significant associations were observed between body shape perception and hours spent on social media in a day (χ^2 = 2.79, p = 0.095), social media app preference (χ^2 = 5.65, p = 0.227), frequency of posting on social media (χ^2 = 3.15, p = 0.533), or social media content preference (χ^2 = 2.39, p = 0.303).

Table 4 (Association Between Body Shape Perception and Eating Patterns) shows a strong association between body shape perception and self-induced sickness due to feeling full (χ^2 = 16.2, p < 0.001), with students concerned about their body shape more likely to report this behavior. Similarly, significant associations were observed between body shape perception and fear of losing control over eating habits (χ^2 = 54.4, p < 0.001), perception of being fat despite others' opinions (χ^2 = 17.5, p < 0.001), and food dominating life (χ^2 = 24.0, p < 0.001). However, no significant association was found between body shape perception and recent significant weight loss over 3 months (χ^2 = 2.98, p = 0.084).

These findings underscore the pervasive influence of body shape concerns on the thoughts, emotions, and behaviors of medical students. They highlight the need for targeted interventions to promote positive body image and mental well-being, particularly among students with moderate to marked concerns, those from urban areas, those with mothers in government jobs, and those in later years of their MBBS program.

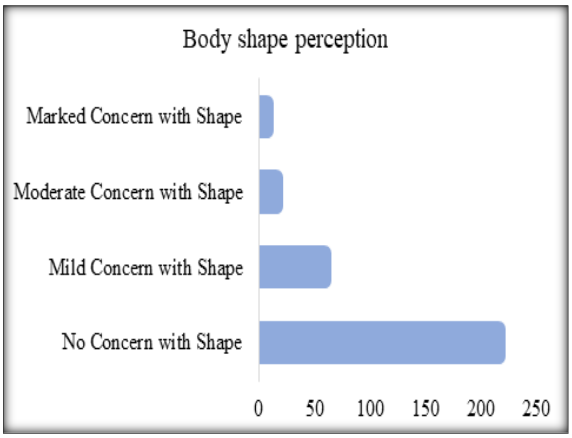

Figure 1: Distribution of Body Shape Perception Among Medical Students

Table 1: Association Between Body Shape Perception and Demographic Variables Among Medical Students

Variable	No Concern with Shape	Concern with Shape	Total	χ^2 Value	p-value
Age Category					
- 15-18 years	33	5	38	5.25	0.072
- 19-21 years	135	55	190	-	-
- 22-24 years	48	24	72	-	-
Sex					
- Female	147	62	209	0.948	0.33
- Male	69	22	91	-	-
Religion					
- Christian	17	4	21	4.39	0.222
- Hindu	176	73	249	-	-
- Muslim	23	6	29	-	-
- Others	0	1	1	-	-
Residence					
- Rural	66	13	79	7.09	0.008
- Urban	150	71	221	-	-
Type of Family					
- Joint	37	10	47	1.25	0.264
- Nuclear	179	74	253	-	-
Mother's Education					
- Above High School	113	46	159	0.191	0.909
- Illiterate	29	10	39	-	-

- Up to High School	74	28	102	-	-
Father's Education					
- Above High School	159	59	218	0.42	0.811
- Illiterate	10	5	15	-	-
- Up to High School	47	20	67	-	-
Mother's Employment					
- Government Employee	24	20	44	7.94	0.019
- Private Employee	31	9	40	-	-
- Unemployed	161	55	216	-	-
Father's Employment					
- Government Employee	66	26	92	3.38	0.185
- Private Employee	118	52	170	-	-
- Unemployed	32	6	38	-	-
Siblings					
- No	9	2	11	0.546	0.46
- Yes	207	82	289	-	-
Year of MBBS					
- 1st Year	86	19	105	23.3	< .001
- 2nd Year	51	13	64	-	-
- 3rd Year	63	31	94	-	-
- 4th Year	16	21	37	-	-
Total	216	84	300	-	-

Table 2: Prevalence of Body Shape Concerns and Related Behaviors Among Medical Students

S. No.	Variable	Always	Very Often	Often	Sometimes	Rarely	Never
1	Prevalence of Dieting Concerns Related to Body Shape	16 (5.3%)	17 (5.7%)	32 (10.7%)	103 (34.3%)	40 (13.3%)	92 (30.7%)
2	Fear of Becoming Fat	27 (9.0%)	19 (6.3%)	32 (10.7%)	79 (26.3%)	49 (16.3%)	94 (31.3%)
3	Feelings of Fatness After Eating a Large Meal	20 (6.7%)	12 (4.0%)	19 (6.3%)	74 (24.7%)	76 (25.3%)	99 (33.0%)
4	Comparison of Own Body Shape with Others	14 (4.7%)	11 (3.7%)	25 (8.3%)	90 (30.0%)	47 (15.7%)	113 (37.7%)
5	Impact of Body Shape Thoughts on Concentration	4 (1.3%)	9 (3.0%)	16 (5.3%)	61 (20.3%)	40 (13.3%)	170 (56.7%)
6	Feelings of Fatness When Naked	9 (3.0%)	10 (3.3%)	18 (6.0%)	50 (16.7%)	49 (16.3%)	164 (54.7%)
7	Imagined Alterations to Body Shape	8 (2.7%)	5 (1.7%)	13 (4.3%)	42 (14.0%)	26 (8.7%)	206 (68.7%)
8	Avoidance of Social Occasions Due to Body Shape Concerns	4 (1.3%)	6 (2.0%)	4 (1.3%)	45 (15.0%)	35 (11.7%)	206 (68.7%)
9	Self-Consciousness Triggered by Comparisons with Thin Women	4 (1.3%)	6 (2.0%)	11 (3.7%)	40 (13.3%)	38 (12.7%)	201 (67.0%)
10	Perceived Lack of Self-Control Over Body Shape	12 (4.0%)	12 (4.0%)	15 (5.0%)	58 (19.3%)	44 (14.7%)	159 (53.0%)
11	Concerns About Fat Around Waist or Stomach	10 (3.3%)	14 (4.7%)	17 (5.7%)	57 (19.0%)	43 (14.3%)	159 (53.0%)
12	Worry About Taking Up Too Much Space in Social Settings	6 (2.0%)	6 (2.0%)	10 (3.3%)	34 (11.3%)	45 (15.0%)	199 (66.3%)
13	Reflections and Their Impact on Body Image	8 (2.7%)	10 (3.3%)	15 (5.0%)	60 (20.0%)	45 (15.0%)	162 (54.0%)
14	Body Pinching to Assess Fat Levels	17 (5.7%)	14 (4.7%)	29 (9.7%)	80 (26.7%)	50 (16.7%)	110 (36.7%)
15	Avoidance of Situations Revealing Body Shape	22 (7.3%)	8 (2.7%)	21 (7.0%)	58 (19.3%)	40 (13.3%)	151 (50.3%)
16	Self-Consciousness About Body Shape in Social Settings	7 (2.3%)	7 (2.3%)	28 (9.3%)	80 (26.7%)	59 (19.7%)	119 (39.7%)
17	Brooding About Body Shape When Bored	4 (1.3%)	6 (2.0%)	7 (2.3%)	67 (22.3%)	48 (16.0%)	168 (56.0%)
18	Concerns About Thighs, Hips, or Bottom Size	18 (6.0%)	13 (4.3%)	22 (7.3%)	53 (17.7%)	55 (18.3%)	139 (46.3%)
19	Worry About Flesh Firmness	17 (5.7%)	5 (1.7%)	14 (4.7%)	73 (24.3%)	39 (13.0%)	152 (50.7%)
20	Emotional Distress About Body Shape (Crying)	7 (2.3%)	3 (1.0%)	6 (2.0%)	31 (10.3%)	35 (11.7%)	218 (72.7%)
21	Avoidance of Running Due to Flesh Wobbling	6 (2.0%)	6 (2.0%)	9 (3.0%)	43 (14.3%)	24 (8.0%)	212 (70.7%)
22	Worry About Thighs Spreading When Sitting	12 (4.0%)	7 (2.3%)	8 (2.7%)	62 (20.7%)	45 (15.0%)	166 (55.3%)
23	Feelings of Fatness After Eating Small Amounts	6 (2.0%)	3 (1.0%)	7 (2.3%)	45 (15.0%)	49 (16.3%)	190 (63.3%)
24	Avoidance of Clothes Highlighting Body Shape	23 (7.7%)	18 (6.0%)	26 (8.7%)	76 (25.3%)	45 (15.0%)	112 (37.3%)

25	Feelings of Fatness After Eating High-Calorie Foods	8 (2.7%)	5 (1.7%)	14 (4.7%)	60 (20.0%)	58 (19.3%)	155 (51.7%)
26	Perception of Being Excessively Large and Rounded	10 (3.3%)	6 (2.0%)	7 (2.3%)	42 (14.0%)	49 (16.3%)	186 (62.0%)
27	Feelings of Shame About Body Shape	8 (2.7%)	11 (3.7%)	7 (2.3%)	51 (17.0%)	51 (17.0%)	172 (57.3%)
28	Dieting Motivated by Worry About Body Shape	5 (1.7%)	8 (2.7%)	18 (6.0%)	77 (25.7%)	45 (15.0%)	147 (49.0%)
29	Happiness About Shape When Stomach is Empty	12 (4.0%)	10 (3.3%)	24 (8.0%)	64 (21.3%)	48 (16.0%)	142 (47.3%)
30	Perceived Unfairness of Others Being Thinner	6 (2.0%)	8 (2.7%)	6 (2.0%)	42 (14.0%)	40 (13.3%)	198 (66.0%)
31	Vomiting to Feel Thinner	0 (0%)	0 (0%)	1 (0.3%)	15 (5.0%)	10 (3.3%)	274 (91.3%)
32	Worries About Flesh Being Dimply	4 (1.3%)	1 (0.3%)	7 (2.3%)	35 (11.7%)	26 (8.7%)	227 (75.7%)
33	Laxative Use for Weight Control	0 (0%)	0 (0%)	0 (0%)	13 (4.3%)	4 (1.3%)	283 (94.3%)
34	Exercise Motivation Stemming From Shape Concerns	12 (4.0%)	21 (7.0%)	33 (11.0%)	73 (24.3%)	41 (13.7%)	120 (40.0%)

Table 3: Association Between Social Media Usage and Body Shape Perception Among Medical Students

Variable	No Concern with Shape	Concern with Shape	Total	χ^2 Value	p-value
Hours Spent on Social Media in a Day					
- Upto 4 hours	178	62	240	2.79	0.095
- >4 hours	38	22	60	-	-
Social Media App Preference					
- YouTube	61	14	75	5.65	0.227
- Instagram	123	59	182	-	-
- Others	11	5	16	-	-
- Snapchat	5	1	6	-	-
- WhatsApp	16	5	21	-	-
Frequency of Posting on Social Media					
- 1 post/day	1	1	2	3.15	0.533
- 1 post/month	12	8	20	-	-
- 1 post/week	8	3	11	-	-
- >1 post/day	3	0	3	-	-
- Rarely	192	72	264	-	-
Social Media Content Preference					
- Photos	9	5	14	2.39	0.303
- Shorts/Reels	160	67	227	-	-
- YouTube Videos	47	12	59	-	-
Watching Content Related to Physical Appearance					
- No	131	31	162	13.7	< .001
- Yes	85	53	138	-	-
Total	216	84	300	-	-

Table 4: Association Between Body Shape Perception and Eating Patterns Among Medical Students

Body Shape Perception	No Concern with Shape	Concern with Shape	Total	χ^2 Value	p-value
Self-Induced Sickness Due to Feeling Full					
- No Self-Induced Sickness	196	61	257	16.2	< .001
- Self-Induced Sickness	20	23	43	-	-
Fear of Losing Control Over Eating Habits					
- No Fear of Losing Control	194	43	237	54.4	< .001
- Fear of Losing Control	22	41	63	-	-
Perception of Being Fat Despite Others' Opinions					
- No Perception of Being Fat	160	41	201	17.5	< .001
- Perception of Being Fat	56	43	99	-	-
Food Dominating Life					
- No Food Dominating Life	170	42	212	24	< .001
- Food Dominating Life	46	42	88	-	-
Recent Significant Weight Loss Over 3 Months					
- No Recent Weight Loss	185	65	250	2.98	0.084
- Recent Weight Loss	31	19	50	-	-
Total	216	84	300	-	-

DISCUSSION

Demographic Factors

Urban residence and mother's employment as a government employee were significant predictors of body shape concerns. While the link between urban environments and body dissatisfaction is well-documented,[10] the association with mother's employment is less commonly reported, suggesting

the need for further exploration of family dynamics in body image research.

Social Media and Body Image

The influence of social media, particularly exposure to appearance-focused content, on body shape concerns echoes findings from Fardouly et al.[11] However, unlike Holland and Tiggemann,[5] this study did not find significant associations with hours spent online or specific app preferences, indicating that the type of content consumed may be more impactful than the platform or frequency of use.

Body Shape Perception and Eating Habits

The strong association between body shape concerns and disordered eating behaviors, such as self-induced sickness and fear of losing control over eating, is consistent with studies like Neumark-Sztainer et al.[12] However, unlike some studies,[13] this study did not find a significant link between body shape concerns and recent weight loss, suggesting that the relationship between body image and eating behaviors may vary across contexts.

Prevalence of Body Shape Concerns

The relatively low prevalence of body shape concerns in this study (72.0% no concern) contrasts with higher rates reported in studies like Pope et al.[14] This difference may reflect cultural or contextual variations in body image perceptions.

CONCLUSION

These findings underscore the need for targeted interventions to address body image concerns among medical students, particularly those in urban areas, later years of study, and those exposed to appearance-focused social media content. Culturally sensitive programs promoting positive body image and healthy eating behaviors are essential for improving students' mental well-being.

Conflict of interest: Nil.

REFERENCES

1. Kar S, Choudhary P, Upadhyay S. Concept of body image and its mental health implications. Odisha Journal of Psychiatry. 2022;18(1):11.
2. Kostanski M, Gullone E. Adolescent Body Image Dissatisfaction: Relationships with Self-esteem, Anxiety, and Depression Controlling for Body Mass. Journal of Child Psychology and Psychiatry. 1998 Feb;39(2):255–62.
3. Tylka TL. The Relation Between Body Dissatisfaction and Eating Disorder Symptomatology: An Analysis of Moderating Variables. Journal of Counseling Psychology. 2004 Apr;51(2):178–91.
4. Jiotsa B, Naccache B, Duval M, Rocher B, Grall-Bronnec M. Social Media Use and Body Image disorders: Association between Frequency of Comparing One's Own Physical Appearance to That of People Being Followed on Social Media and Body Dissatisfaction and Drive for Thinness. International Journal of Environmental Research and Public Health. 2021 Mar 11;18(6).
5. Holland G, Tiggeman M. A Systematic Review of the Impact of the Use of Social Networking Sites on Body Image and Disordered Eating Outcomes. Body Image [Internet]. 2016 Jun;17(1):100–10. Available from: https://pubmed.ncbi.nlm.nih.gov/26995158/
6. De Vries DA, Vossen HGM, van der Kolk – van der Boom P. Social Media and Body Dissatisfaction: Investigating the Attenuating Role of Positive Parent–Adolescent Relationships. Journal of Youth and Adolescence [Internet]. 2018 Nov 26;48(3):527–36. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6394528/
7. Kapoor A, Upadhyay M, Saini N. Prevalence, patterns, and determinants of body image dissatisfaction among female undergraduate students of University of Delhi. Journal of Family Medicine and Primary Care. 2022;11(5):2002.
8. Sadeghi K, Sayed Mojtaba Ahmadi, Rezaei M, Fatemeh Veisy, Fahimeh Raeesi, Jamileh Shahverdi. PSYCHOMETRIC PROPERTIES OF THE 34-ITEM BODY SHAPE QUESTIONNAIRE IN STUDENTS. Majallah-i dānishgāh-i ʿulūm-i pizishkī-i Kirmānshāh. 2014 Sep 24;18(6):316–22.
9. Morgan JF, Reid F, Lacey JH. The SCOFF questionnaire: Assessment of a New Screening Tool for Eating Disorders. BMJ [Internet]. 1999 Dec 4;319(7223):1467–8. Available from: https://www.bmj.com/content/319/7223/1467
10. Swami V, Frederick DA, Aavik T, Alcalay L, Allik J, Anderson D, et al. The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: results of the international body project I. Personality & social psychology bulletin [Internet]. 2010;36(3):309–25. Available from: https://www.ncbi.nlm.nih.gov/pubmed/20179313
11. Fardouly J, Diedrichs PC, Vartanian LR, Halliwell E. Social Comparisons on Social media: the Impact of Facebook on Young women's Body Image Concerns and Mood. Body Image [Internet]. 2015 Mar;13(1):38–45. Available from: https://www.sciencedirect.com/science/article/abs/pii/S174014451400148X
12. Neumark-Sztainer D, Wall M, Guo J, Story M, Haines J, Eisenberg M. Obesity, Disordered Eating, and Eating Disorders in a Longitudinal Study of Adolescents: How Do Dieters Fare 5 Years Later? Journal of the American Dietetic Association [Internet]. 2006 Apr;106(4):559–68. Available from: https://www.sciencedirect.com/science/article/abs/pii/S0002822306000046
13. Yahia N, Brown C, Potter S, Szymanski H, Smith K, Pringle L, et al. Night eating syndrome and its association with weight status, physical activity, eating habits, smoking status, and sleep patterns among college students. Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity. 2017 Jun 2;22(3):421–33.
14. Pope HG, Gruber AJ, Mangweth B, Bureau B, deCol C, Jouvent R, et al. Body Image Perception Among Men in Three Countries. American Journal of Psychiatry. 2000 Aug;157(8):1297–301.