

SOCIAL MEDIA ADDICTION IS THE RISK FOR LOWER PHYSICAL ACTIVITY, RAISED BODY IMAGE CONCERNS AND INCREASING BMI AMONG FEMALE UNIVERSITY STUDENTS

Original Research

Zunaira Anjum¹, Asif Ali^{2*}, Fariq Ahmed³, Muhammad Azam⁴

¹BS Physical Education & Sports Sciences, Government College University Lahore, Pakistan.

²Associate Professor, Department of Physical Education & Sports Sciences, Government College University Lahore, Pakistan.

³M.Phil. Scholar, Department of Physical Education & Sports Sciences, Government College University Lahore, Pakistan.

⁴Assistant Professor, Department of Physical Education & Sports Sciences, Government College University Lahore, Pakistan.

Corresponding Author: Asif Ali, Associate Professor, Department of Physical Education & Sports Sciences, Government College University Lahore, Pakistan., asif.ali@gcu.edu.pk

Conflict of Interest: None
Date Submitted: 10-10-24

Grant Support & Financial Support: None
Date Published: 25-10-24

ABSTRACT

Background: In today's society, body image issues are becoming more prevalent among young women particularly female university students. While most studies have focused on the specific consequences of social media addiction and low physical activity levels, however, less is known about how these factors interact to cause body image concerns. Therefore, the purpose of this cross-sectional study was to investigate the relationship of social media addiction with physical activity levels, BMI and self-perceived body image among female university students.

Objective: The objective of this study was to investigate the relationship between social media addiction, physical activity levels, BMI, and body image concerns among female university students in Lahore, Pakistan.

Methods: The data was collected from five different universities. The participants of this study were 200 females with ages between 18 and 25 years ($M = 20.93$ and $SD = 1.710$). The questionnaire included survey regarding personal information, IPAQ short version, BSMAS and BSQ 16-B questionnaires. Results: The findings indicated that social media addiction was directly associated with low physical activity levels thus increasing sedentary behaviour among female university students. Additionally, it was also observed that those female students who were more prone to addictive nature of social media, had increased BMI values and body image concerns.

Results: The results revealed that social media addiction was significantly associated with lower physical activity levels, increased BMI, and heightened body image concerns among female university students. Higher addiction scores correlated with increased sedentary behaviour and dissatisfaction with body image.

Conclusion: The findings of this study suggested the promotion of increased physical activity levels to reduce the social media addiction and body image concerns among female university students to improve their mental health and well-being.

Keywords: Body image concerns, BMI, female university students, physical activity, psychological health, sedentary behaviour, social media addiction.

INTRODUCTION

In today's society, body image issues are becoming more prevalent among young women. Due to these extreme external societal pressures, they are forced to live according to pre-defined ideals of beauty (1). They frequently feel dissatisfied with their physical size, shape, and weight because they compare themselves to unrealistic standards presented in the media and mainstream culture (2). These beauty standards, which promote thinness and specific physical characteristics, are not only impractical for the majority of people, but they can also foster feelings of dissatisfaction. Consequently, many women adopt negative views about their bodies, which causes low self-confidence, poor mental health, and more stress over their physical appearance (3). Additionally, these mental health issues (caused by external challenges) are particularly more prevalent among female university students. According to studies, 60-80% of female university students have problems with their physique and desire to get more toned during their academic years (4). This may be due to a variety of reasons including significant competitive and surrounding pressures posed by their fellow peers (5). As they move to new academic surroundings, they develop their personalities, and make new social contacts, young women frequently find themselves in a competitive social environment (6). In these environments, students are more likely to compare themselves to their peers' looks. This comparison culture fosters an environment in which women may criticize each other based on their looks, thus increasing the pressure to adhere to traditional beauty standards (7). Criticism and mocking about body size or shape could cause body dissatisfaction. In addition, social media is also an influence, which is the primary cause of elevated body image concerns among female university students (7).

Social media has an important impact on young women's concepts of looks and body image. Platforms such as Instagram, TikTok, and Facebook are prevalent in the routines of female university students, with more than 90% utilizing them on a daily (8). These social media platforms are overflowing with highly determined and filtered photos that promote idealized conceptions of beauty, frequently including influencers, celebrities, and models with apparently flawless physiques (9). These photographs, enhanced by editing tools and filters, establish unrealistic expectations for body shape, skin tone, and overall beauty, causing many women to be dissatisfied with the way they look (10). The constant exposure to unattainable beauty ideals on social media can lead to several negative effects. Many young women develop low self-esteem, anxiety, and depression as they strive to match the unrealistic standards presented online (11). Social media also encourages a constant need for validation through likes and comments, reinforcing feelings of inadequacy when these expectations aren't met (12). Its addictive nature, driven by features like endless scrolling and instant feedback, keeps users engaged for long periods, often leading to time spent in passive consumption rather than engaging in meaningful activities (13, 14). This addiction not only fosters negative mental health outcomes but also contributes to lower physical activity levels and the development of sedentary behaviours (15).

Maintaining psychological and physical health requires physical activity, which helps to control body weight, enhances mood, and lowers the risk of conditions like obesity and cardiovascular disease (16). Maintaining a healthy body mass index (BMI) is crucial for good health and can be achieved through regular exercise (17). Nevertheless, maintaining appropriate levels of physical activity is a challenge for many female university students. A more sedentary lifestyle is frequently an outcome of the pressures of academic life along with extensive social media use. Long-term screen usage, such as spending hours on social media, decreases chances to engage in physical activity, which eventually causes weight gain and an increase in BMI (18). According to studies, young women who use digital platforms more frequently are more likely to adopt passive behaviours, which lowers their levels of physical activity (19). Young women who acquire weight or have a higher BMI may feel even more dissatisfied with their bodies, which is worsened by this sedentary lifestyle (20). While most studies have focused on the specific consequences of social media addiction and low physical activity levels, however, less is known about how these factors interact to cause body image concerns (9). Hence, this study aims to investigate these relationships, specifically examining the direct and indirect links between social media addiction, body image concerns, physical inactivity, and rising BMI among female university students. By exploring how these factors influence one another, this research seeks to provide a more comprehensive understanding of the pressures, young women face in maintaining a healthy body image. The findings could help develop strategies to mitigate the negative impact of social media on both mental and physical health, empowering female university students to lead healthier, more balanced lives.

METHODS

The research project was designed as a quantitative cross-sectional study. A convenient sampling technique was employed, and data were collected from five universities in Lahore, Pakistan, including three women-only universities and two co-educational universities. The sample size was determined using Yamane’s formula (21), and the total population was set as university students from Lahore, which comprised 42,000 individuals. The sample included 200 female participants, with half of the population being physically active. Participants ranged in age from 18 to 25 years ($M = 20.93$, $SD = 1.710$). All participants voluntarily agreed to take part in the study, and informed consent was obtained prior to data collection. The inclusion criteria required participants to be female university students aged 18 to 25 and enrolled in universities located in Lahore. Professional athletes and male participants were excluded, ensuring the targeted population was not adolescents. The measures included a questionnaire divided into several sections: personal information, participation in sports/physical activity during early adulthood, media exposure, and body image assessment. The personal information section consisted of 18 questions related to age, gender, marital status, experience, daily screen time, height, weight, BMI, resting heart rate, and other relevant variables for subsequent analysis.

To evaluate physical activity levels, the International Physical Activity Questionnaire (IPAQ), developed by Craig and Marshall (22), was utilized. This instrument has been widely validated and proven reliable for assessing physical activity across various populations (23). The Cronbach alpha value for the short version used in this study was 0.76, and it measured mild, moderate, and vigorous physical activity levels as well as average sitting time. The addictive nature of social media was assessed using the short version of the Bergen Social Media Addiction Scale (BSMAS), developed by Andreassen and Torsheim (24). This scale measures the six core components of addictive social media use (25) and has demonstrated high reliability and validity, with a reliability score of $r = 0.75$ and a Cronbach’s alpha value of $\alpha = 0.831$. To assess body image concerns, the Body Shape Questionnaire (BSQ), originally developed by Evans and Dolan in 1993 (26), was administered. This 16-item tool, which focuses on self-reported perceptions of "being obese," was chosen because it is suitable for participants within the same age range as those involved in this study. With the developer’s permission, this tool was employed to evaluate the self-perception concerns of female college-aged students. Each item on the BSQ is rated from 1 (Never) to 6 (Always), and its high validity is supported by Cronbach's alpha scores around $\alpha = .93$.

Participants completed the questionnaire individually, taking approximately 15 to 20 minutes. They were encouraged to ask questions about any component of the questionnaire for clarity. The participation was voluntary, and confidentiality of the data was assured, with information collected solely for research purposes. Data were analysed using SPSS (version 22). Pearson Correlation analysis was applied to explore associations between variables, and the Kruskal-Wallis test was utilized to examine differences in BMI values across the groups.

RESULTS

Table 1 Demographics Table Note: N=200

Variables	Categories	Frequency (%age)
Sports Status	Female Athletes	100 (50.0%)
	Non-Athlete Females	100 (50.0%)
Marital Status	Married	2 (1.0%)
	Unmarried	198 (99.0%)
University	1	60 (30.0%)
	2	30 (15.0%)
	3	40 (20.0%)
	4	40 (20.0%)
	5	30 (15.0%)
Department	Social Sciences	85 (42.5%)
	Medical Sciences	56 (28.0%)
	Computer Sciences	20 (10.0%)
	Life Sciences	39 (19.5%)
Age (Years)	M; 20.93, SD; 1.71	

Table 1 shows demographic information of the study variables. The data has been collected from five universities. There frequency was 60, 30, 40, 40, 30 and percentages was 30.0%, 15.0%, 20.0%, 20.0%, 15.0%. Their mean age was 20.95 and standard deviation was 1.71. Their frequency and percentage were 200 (100%). Married participants were only n = 2 (1.0%) and unmarried was n = 198 (99.0%). There were 100 (50.0%) athletes and 100 (50.0%) non-athletes. Their BMI status was normal 58 (29.0%), underweight 117 (58.9%) and overweight 25 (32.5%).

Table 2 Pearson Correlation analysis between variables

Measures	Social Media Addiction global score	Social Media Addiction Category	Body Image Concern Global Score	Body Image Concern Category	Physical Activity Level
Social media addiction global score	1				
Social media addiction category	.695	1			
Body image concern global score	.177*	.173*	1		
Body image concern category	.168*	.135	.940	1	
Physical activity level	-.096	-.187**	-.065	.000	1

Table 2 Pearson correlation tests demonstrated a strong positive association between social media addiction and body image concern ($r=0.177^*$, $p=0.012$). This means that people who had higher scores of addictions to social media also tended to show increased levels of concern about their body image. The conducted correlation analysis revealed a noteworthy finding regarding the relationship between physical activity level and social media addiction. The correlation coefficient ($r = -0.187^{**}$, $p=0.008$) indicated a significant negative association between these two variables. This implies that individuals classified under higher social media addiction tended to exhibit lower levels of physical activity.

Table 3 Test Statistics of Kruskal Wallis test

	Social Media Addiction	Body Image Concern
Chi-Square	.781	11.527
Df	2	2
Asymp. Sig.	.677	.003

Note: Mean Rank (overweight = 136.78; normal = 96.97; underweight = 91.98)

To evaluate the difference across three levels of BMI for comparison to which category has more dissatisfaction of their body image, Kruskal Wallis test was used to do the analysis. The test identified considerable gaps (Asymp. Sig. = .003) in three categories of BMI and body image. The overweight showed more dissatisfaction as compared to underweight. There were no comparative differences between normal and underweight. While there was no major distinction among social media addiction and BMI.

DISCUSSION

The current study focused on exploring the relationships between social media addiction, physical activity levels and body image concerns among female university students. Additionally, it also aimed at exploring how high physical activity levels, BMI, and body image concerns of these female participants are impacted by increased social media activity. The findings indicated that social media addiction was directly associated with low physical activity levels thus increasing sedentary behavior among female university students. Additionally, it was also observed that those female students who were more prone to addictive nature of social media, had increased BMI values and body image concerns among them. In line with the above-mentioned evidence, it can be proposed that increased levels of social media usage (due to its addiction) might reduce physical activity levels thus raising BMI levels and body image concerns among female university students. Additionally, it was observed that students who were overweight were more anxious about their body image than those who were underweight. In a recently carried out study, researchers found that the more time students spent on watching

attractive, slim models on social media platforms, the higher their levels of body image dissatisfaction (21). However, when non-users or those who rarely use social media were compared with active social media users, they were less concerned about their body size. This implies that, these platforms may also have negative effects on other aspects of health behaviors. The results in the current context cover similar previous research studies, like the study among college students in Turkey that looked into a gender difference in the linkage between social media addiction and exercise, which yielded no difference.

The correlation between excessive media use and negative self-perception has been previously studied in excess (22-24). The present generation probably spends most of their time in front of screens, which might be the reason why they have very little physical activity. According to the study in regard to life factors, it has been identified that obesity has the strongest impact after they have attained middle age and significantly changes women's body image (25). Furthermore, Schwartz and Brownell (26) explained that the evidence for this hypothesis indicated that weight anxiety among young adults has risen as a result of social media addiction. This particular study has indicated a paradigm shift that requires observation of how youths' social media use impacts their health both mentally and physically, as well as in exercise and weight loss. Additionally, Mourão and Brown (27) reported that young adults' concerns about their weight might be maximized if they spend extreme time scrolling social media. This study also highlighted the importance of realizing the neurological and physiological impact of social networking sites. It also reviewed previous research that analyzed the influence of SNS on the levels of self-esteem, physical activity, and BMI. Although recruitment of participants and data consolidation posed some challenges, the study methods were changed to gain deeper understanding of the various interconnections between the use of social media platforms and college-aged women's health to increase the credibility of the study. The findings of this study recommend the promotion of increased physical activity levels among female university students to reduce the social media addiction and body image concerns among them.

CONCLUSION

To figure out the relation between social media usage and physical activity and its association with body image was the main objective of this study. The findings revealed that social media usage and sedentary behavior are positively associated with each other. Furthermore, both these variables were also observed to have positive association with body image concerns among participants. These findings highlighted the significance of developing an intervention that might enhance their health and overall mental well-being.

REFERENCES

1. Popkova EG, Gulzat K, editors. Technological revolution in the 21 st century: digital society vs. artificial intelligence. The 21st century from the positions of modern science: Intellectual, digital and innovative aspects; 2020: Springer.
2. Pellegrino A, Stasi A, Bhatiasevi V. Research trends in social media addiction and problematic social media use: A bibliometric analysis. *Frontiers in psychiatry*. 2022;13:1017506.
3. Kumar Swain R, Pati AK. Use of social networking sites (SNSs) and its repercussions on sleep quality, psychosocial behavior, academic performance and circadian rhythm of humans—a brief review. *Biological Rhythm Research*. 2021;52(8):1139-78.
4. Neog S. Use of Social Networking Sites (SNSs) in the University Libraries of Assam: A Case Study of the Central Universities in Assam. *Redesigning and Reimagining Libraries in New Technological Era*. 2020:318.
5. Kolhar M, Kazi RNA, Alameen A. Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi journal of biological sciences*. 2021;28(4):2216-22.
6. Tiggemann M, Anderberg I, Brown Z. # Loveyourbody: The effect of body positive Instagram captions on women's body image. *Body image*. 2020;33:129-36.
7. Grogan S. *Body image: Understanding body dissatisfaction in men, women and children*: Routledge; 2021.
8. Divecha CA, Simon MA, Asaad AA, Tayyab H. Body image perceptions and body image dissatisfaction among medical students in Oman. *Sultan Qaboos University Medical Journal*. 2022;22(2):218.
9. Izydorczyk B, Truong Thi Khanh H, Lizińczyk S, Sitnik-Warchulska K, Lipowska M, Gulbicka A. Body dissatisfaction, restrictive, and bulimic behaviours among young women: A Polish–Japanese comparison. *Nutrients*. 2020;12(3):666.
10. Melamed OC, Selby P, Taylor VH. Obesity, Mental Health, and Health-Related Quality of Life. *Handbook of Obesity-Volume 1*: CRC Press; 2024. p. 581-7.

11. Freire GLM, da Silva Paulo JR, da Silva AA, Batista RPR, Alves JFN, do Nascimento Junior JRA. Body dissatisfaction, addiction to exercise and risk behaviour for eating disorders among exercise practitioners. *Journal of Eating Disorders*. 2020;8:1-9.
12. Abraham MI, Aprahamian T, Won CW, Theou O. International Exercise Recommendations in Older Adults (ICFSR): Expert Consensus Guidelines. 2022.
13. Frederick DA, Crerand CE, Brown TA, Perez M, Best CR, Cook-Cottone CP, et al. Demographic predictors of body image satisfaction: The US Body Project I. *Body Image*. 2022;41:17-31.
14. Gruszka W, Owczarek AJ, Glinianowicz M, Bąk-Sosnowska M, Chudek J, Olszanecka-Glinianowicz M. Perception of body size and body dissatisfaction in adults. *Scientific Reports*. 2022;12(1):1159.
15. Tang C, Cooper M, Wang S, Song J, He J. The relationship between body weight and dietary restraint is explained by body dissatisfaction and body image inflexibility among young adults in China. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*. 2021;26:1863-70.
16. Weinberger N-A, Kersting A, Riedel-Heller SG, Luck-Sikorski C. Body dissatisfaction in individuals with obesity compared to normal-weight individuals: a systematic review and meta-analysis. *Obesity facts*. 2017;9(6):424-41.
17. Eck KM, Quick V, Byrd-Bredbenner C. Body dissatisfaction, eating styles, weight-related behaviors, and health among young women in the United States. *Nutrients*. 2022;14(18):3876.
18. Baceviciene M, Jankauskiene R. Changes in sociocultural attitudes towards appearance, body image, eating attitudes and behaviours, physical activity, and quality of life in students before and during COVID-19 lockdown. *Appetite*. 2021;166:105452.
19. Srivastava P, Felonis CR, Clancy OM, Wons OB, Abber SR, Juarascio AS. Real-time predictors of body dissatisfaction in females with binge eating: an ecological momentary assessment study. *Eating and Weight Disorders-Studies on Anorexia, Bulimia and Obesity*. 2021:1-7.
20. McPhee PG, Singh S, Morrison KM. Childhood obesity and cardiovascular disease risk: working toward solutions. *Canadian Journal of Cardiology*. 2020;36(9):1352-61.
21. Robinson A, Bonnette A, Howard K, Ceballos N, Dailey S, Lu Y, et al. Social comparisons, social media addiction, and social interaction: An examination of specific social media behaviors related to major depressive disorder in a millennial population. *Journal of Applied Biobehavioral Research*. 2019;24(1):e12158.
22. Aparicio-Martinez P, Perea-Moreno A-J, Martinez-Jimenez MP, Redel-Macías MD, Pagliari C, Vaquero-Abellan M. Social media, thin-ideal, body dissatisfaction and disordered eating attitudes: An exploratory analysis. *International journal of environmental research and public health*. 2019;16(21):4177.
23. Ryding FC, Kuss DJ. The use of social networking sites, body image dissatisfaction, and body dysmorphic disorder: A systematic review of psychological research. *Psychology of Popular Media*. 2020;9(4):412.
24. Yurdagül C, Kircaburun K, Emirtekin E, Wang P, Griffiths MD. Psychopathological consequences related to problematic Instagram use among adolescents: The mediating role of body image dissatisfaction and moderating role of gender. *International Journal of Mental Health and Addiction*. 2021;19:1385-97.
25. Mangweth-Matzek B, Rupp CI, Hausmann A, Assmayr K, Mariacher E, Kemmler G, et al. Never too old for eating disorders or body dissatisfaction: A community study of elderly women. *Wiley Online Library*; 2006.
26. Schwartz MB, Brownell KD. Obesity and body image. *Body image*. 2004;1(1):43-56.
27. Mourão RR, Brown DK. Black Lives Matter coverage: How protest news frames and attitudinal change affect social media engagement. *Digital Journalism*. 2022;10(4):626-46.