

PREVALENCE AND IMPACT OF SOCIAL MEDIA ADDICTION ON MENTAL HEALTH DISORDERS AMONG FEMALE VARSITY STUDENT ATHLETES AND NON-ATHLETE STUDENTS

Original Article

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ABSTRACT

Background: The psychological well-being and mental health of university undergraduates are essential to their academic performance and personal development. Social media addiction (SMA) has emerged as a significant concern among students, with evidence linking SMA to mental health disorders such as depression, anxiety, and stress (DAS). This study focuses on understanding the prevalence of SMA and its association with mental health disorders among female undergraduate varsity student-athletes and non-athlete students.

Objective: To evaluate the prevalence and impact of SMA on mental health disorders among female undergraduate varsity student-athletes and non-athlete students.

Methods: A cross-sectional design was employed, with 199 female undergraduates (aged 18–26) randomly selected from five institutions in Lahore, Pakistan. The sample comprised 99 student-athletes ($M = 21.24$, $SD = 1.92$) and 100 non-athletes ($M = 21.96$, $SD = 1.68$). Data collection tools included the Bergen Social Media Addiction Scale (BSMAS), the Depression, Anxiety, and Stress Scale-10 (DASS-10), and a demographic questionnaire. Statistical analyses were conducted using independent samples t-tests and regression analyses.

Results: The independent samples t-test revealed significantly higher SMA levels in non-athletes ($M = 17.44$, $SD = 4.244$) than athletes ($M = 16.11$, $SD = 4.025$), $t(197) = -2.264$, $p = .025$. Depression, anxiety, and stress scores were also higher among non-athletes ($M = 11.71$, $SD = 4.255$) compared to athletes ($M = 9.82$, $SD = 3.950$), $t(197) = -3.262$, $p = .001$. Regression analysis showed a positive association between SMA and depressive symptoms ($\beta = .360$, $p < .05$), accounting for 12.9% of the variance ($R^2 = .129$). Screen time additionally correlated with depression ($\beta = .173$, $p < .05$), explaining 3% of its variance ($R^2 = .030$).

Conclusion: The findings suggest that female varsity athletes experience lower levels of SMA and mental health disorders than non-athletes, underscoring the potential benefits of sports participation in mitigating SMA and improving mental health outcomes among university students.

Keywords: Anxiety, Depression, Female, Mental Health, Screen Time, Social Media, Students.

INTRODUCTION

Social media has become an integral component of modern communication, serving as a digital platform for individuals to exchange ideas, share knowledge, and connect with communities (1). Among university undergraduate students, social media is extensively used not only for academic purposes, such as enhancing academic performance and engaging in academic communities, but also for leisure activities and social interaction (2). With the notable increase in social media use among students in recent years, there has been a corresponding rise in addictive behaviors associated with excessive social media engagement (3). This phenomenon, commonly known as Social Media Addiction (SMA), is particularly prevalent among university students, with international prevalence rates ranging from 7.9% to 25.2% (4), while in Pakistan, SMA rates have been reported as high as 25.5% and 36.9% (5). This increasing trend underscores the need for targeted interventions addressing SMA within university populations, particularly as this issue continues to impact students' lives in profound ways. The adverse effects of SMA extend across various domains of well-being, significantly affecting students' physical, mental, and social health. Excessive social media use has been linked to reduced focus, increased procrastination, and poor academic performance, ultimately diminishing overall productivity and success in academic pursuits (6). Moreover, SMA disrupts sleep patterns, promotes sedentary behavior, and may contribute to physical discomfort through prolonged screen use and associated postural strain (7). One of the most concerning consequences of SMA is its contribution to increased depression symptoms, as prolonged social media use often leads to feelings of loneliness, isolation, and virtual detachment from real-life social connections (8). Depression, as a mood disorder, is characterized by persistent sadness and a pervasive sense of restlessness, encompassing a range of emotional, cognitive, physical, and behavioral symptoms (9). Globally recognized as a leading cause of disability, depression can severely disrupt relationships, academic performance, and quality of life, sometimes escalating to suicidal ideation (11).

In university settings, the prevalence of depression is alarmingly high, with reports indicating a rate of 76.4% among undergraduates (12). The situation in Pakistan is particularly concerning, where rates of depression among university students are significant, with 32.8% of student athletes and 73.6% of non-athlete students experiencing depression (13). These findings suggest that depression is a critical issue among university undergraduates, with implications for their physical, social, academic, and psychological well-being. The physical toll of depression may include fatigue, insomnia, appetite changes, and digestive issues, while psychological symptoms often involve persistent sadness, hopelessness, and impaired concentration and decision-making abilities (14, 15, 16). Sports participation has emerged as a promising approach to improving the well-being of students, with evidence indicating that engagement in sports activities fosters social connections, mental well-being, self-control, and emotional intelligence (17, 18, 19, 20). Female university students, in particular, may be more vulnerable to the social and psychological issues associated with SMA due to their higher levels of social media use and increased sensitivity to social stressors (21, 22, 23). While the addictive nature of social media, coupled with its negative psychological impact, poses a growing challenge for student health, research on this issue remains limited, especially concerning how sports engagement might mitigate these effects.

This study seeks to address this gap by exploring the relationship between SMA, mental health disorders, and sports engagement among female university students. Specifically, it aims to assess whether participation in sports can reduce the prevalence and impact of SMA and associated mental health disorders, thereby offering insights into potential intervention strategies. By understanding how sports participation may buffer against the adverse effects of SMA, this research aims to contribute to the development of tailored interventions that promote mental health and well-being among female varsity students.

METHODS

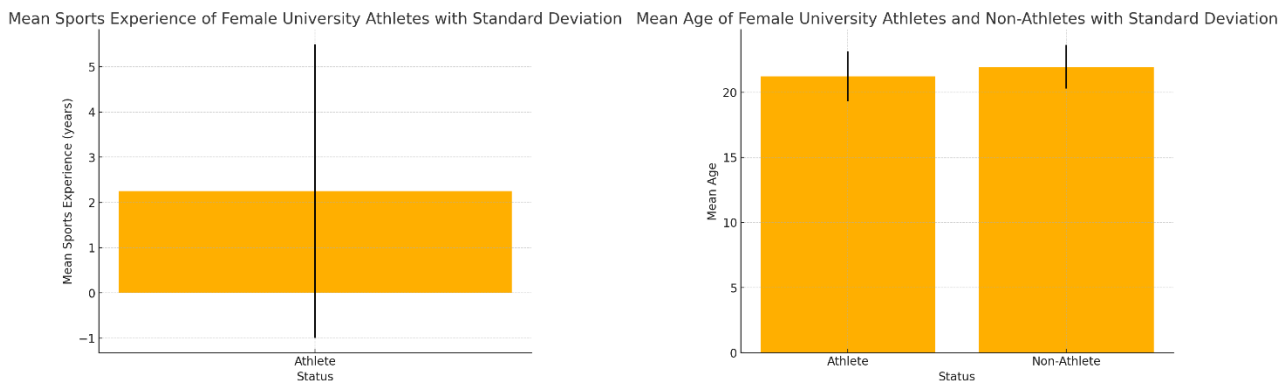
This study employed a quantitative cross-sectional design to investigate the prevalence and impact of social media addiction (SMA) on mental health disorders among female university students. Data were collected using a randomized sampling approach from five institutions in Lahore, Pakistan. The sample size, determined using the Yamane formula (Yamane, 34), included 199 female undergraduate students, comprising 99 student-athletes ($M = 21.24$, $SD = 1.92$) and 100 non-athlete students ($M = 21.96$, $SD = 1.68$). The athletic group had sports-playing experience ranging from 2 to 13 years ($M = 2.25$, $SD = 3.245$). All participants were in different academic years, from the 1st to the 4th year, and were enrolled in the same departments and programs, ensuring consistency in academic background. The participants' ages ranged from 18 to 26 years ($M = 21.92$, $SD = 1.63$). Inclusion criteria for the athlete group required current participation in a university sports team, while the non-athlete group comprised students with no organized sports involvement. The data collection involved several research instruments. A demographic questionnaire captured participants' details, including age, gender, marital status, athletic status, specific sport played, years of sports experience, scholarship status, and resting heart rate. To

measure SMA, the Social Media Addiction Scale, developed by Andreassen et al. (35), was employed. This six-item scale uses a Likert rating from 1 (very rarely) to 5 (often), with high internal consistency (Cronbach’s $\alpha=0.831$), where higher scores reflect greater social media addiction.

Depression was assessed using the Depression, Anxiety, and Stress Scale (DASS-21), originally developed by Lovibond & Lovibond (1995), a widely validated tool designed to measure emotional states related to depression, anxiety, and stress. This scale comprises 21 items rated on a four-point Likert scale from 0 ("Did not apply to me at all") to 3 ("Applied to me very much or most of the time"), with higher scores indicating greater emotional distress. The DASS-21 demonstrated high reliability in this study, with a Cronbach’s alpha of $\alpha=0.916$, ensuring accurate measurement of depressive symptoms. Data collection procedures involved administering the demographic questionnaire, the SMA Scale, and the DASS-21 to all participants. Participation was voluntary, and respondents were assured of data confidentiality, with their responses used solely for research purposes. Participants were systematically guided through the process, which took approximately 15-20 minutes. All participants gave informed consent, and permissions to use the scales were obtained from the original authors. Data analysis was conducted using SPSS version 22 (IBM Corporation, 2017). Descriptive statistics, independent samples t-tests, and simple linear regression analyses were applied to examine the data. Statistical significance was evaluated at a p-value threshold of less than .05, indicating meaningful associations or differences within the sample.

RESULTS

The study's results revealed significant differences in social media addiction (SMA) and depression levels between female varsity student-athletes and non-athlete students. Analysis through an independent samples t-test indicated that non-athlete female students exhibited higher levels of SMA ($M = 17.44, SD = 4.244$) compared to their athlete counterparts ($M = 16.11, SD = 4.025$), yielding a statistically significant difference, $t(197) = -2.264, p = .025$, with a Cohen’s d effect size of 0.32, which reflects a small effect. Similarly, female non-athletes scored higher in depression, anxiety, and stress levels ($M = 11.71, SD = 4.255$) than athletes ($M = 9.82, SD = 3.950$), with $t(197) = -3.262, p = .001$, and Cohen’s d at 0.46, suggesting a small but notable effect.



The frequency analysis further underscored these findings. Among non-athlete students, none reported mild levels of SMA, while 7.9% experienced moderate addiction, and a striking 92.1% exhibited high SMA. In contrast, 17.2% of athletes reported moderate SMA, with 82.8% experiencing high levels, indicating that although SMA was prevalent across both groups, it was more severe in non-athletes. For depression, anxiety, and stress, 10.9% of non-athletes experienced mild symptoms, while 52.5% reported moderate and 36.6% severe symptoms. Conversely, among athletes, 25.3% showed mild symptoms, with 53.5% at moderate levels and 21.2% experiencing severe symptoms, suggesting that athletic participation may be associated with lower severity in mental health issues.

Table 1: Mean comparison of social media addiction and depression among female varsity student athletes and female varsity non-athlete students

Variables	Student athletes		Non-athlete students		t (197)	P	Cohen d
	M	SD	M	SD			

Social Media Addiction	16.11	4.025	17.44	4.244	-2.264	.025	0.32
Depression, Anxiety, stress level	9.82	3.950	11.71	4.255	-3.262	.001	0.46

Note: N = 199

Regression analysis revealed a significant positive association between SMA and depression among female university students. SMA accounted for 12.9% of the variance in depression scores ($R^2 = .129$, $F(1, 197) = 29.42$, $p < .05$), with a beta coefficient (β) of .360, $p < .05$, indicating that higher levels of SMA were associated with increased depression across both athlete and non-athlete groups. Similarly, screen time was found to significantly predict depression, explaining 3% of its variance ($R^2 = .030$, $F(1, 197) = 6.125$, $p = .014$), with $\beta = .173$, $p < .05$, underscoring a positive relationship between screen time and depression irrespective of athletic status.

Table 2: Frequency of BSMAS and DASS in female varsity student athletes and female varsity non-athlete students

Variables	Non-athlete students	Student athletes
	N (%age)	N (%age)
Social media Addiction		
Mild	0 (0%)	0 (0%)
Moderate	8 (7.9%)	17 (17.2%)
High	92 (92.1%)	82 (82.8%)
Depression, Anxiety, Stress		
Mild	11 (10.9%)	25 (25.3%)
Moderate	52 (52.5%)	53 (53.5%)
Severe	37 (36.6%)	21 (21.2%)

Note: N = participants, % age = percentage

These findings highlight the implications of SMA and screen time on mental health, especially in non-athlete students, and underscore the potential moderating role of athletic engagement in reducing mental health burdens. This suggests a need for targeted interventions to mitigate SMA's effects, particularly among non-athletes.

Table 3: Regression coefficients of SMA & screen time on depression among female university students

Dependent Variable	Variable	B	β	SE	R2	P
Depression	Independent: Social Media Addiction	.362	.360	.067	.129	.000
	Predictor: Screen Time	.183	.173	.074	.030	.014

DISCUSSION

This study aimed to examine the prevalence and impact of social media addiction (SMA) on mental health disorders among female varsity student-athletes and non-athlete students. Findings revealed that female varsity student-athletes had significantly lower levels of SMA, depression, anxiety, and stress compared to their non-athlete counterparts. Regression analysis underscored a significant positive association between SMA and mental health disorders across both athlete and non-athlete groups, regardless of athletic status. Additionally, increased screen time was found to have a strong positive relationship with mental health disorders, emphasizing that while athletic participation appears to buffer against certain negative effects, the pervasiveness of SMA and screen time poses substantial risks to psychological well-being. The observed lower rates of SMA and mental health issues in student-athletes align with previous research that highlights the protective benefits of athletic participation. Past studies have shown that student-athletes exhibit more moderate social media usage and possess better overall mental health, including reduced anxiety and stress levels compared to non-athletes (36-39). Such findings support the idea that athletic involvement may mitigate the mental health challenges commonly associated with university life (41). The current study reinforces this perspective, suggesting that sports participation not only aids in managing SMA but also enhances psychological resilience in university settings, where mental health pressures are prevalent.

A significant relationship was observed between SMA and depression across both athlete and non-athlete groups, indicating the pervasive impact of SMA on mental health. This finding is consistent with previous studies that have documented a positive correlation between SMA and depressive symptoms in university students, including athletes (11, 36). Excessive social media usage disrupts sleep patterns and exacerbates symptoms of depression, anxiety, and stress, emphasizing the need for mental health support to address SMA in both athletic and non-athletic populations. Additionally, this study's results indicate that elevated screen time, irrespective of athletic status, may contribute to mood disturbances and worsen mental health conditions, further complicating the management of mental health disorders such as depression, anxiety, and stress. In exploring the link between screen time and mental health, this study demonstrated that increased screen usage is associated with elevated levels of depression, underscoring the complex relationship between screen habits and mental health outcomes. This finding is supported by research showing that increased screen time correlates with both psychological and physical health risks, including cardiovascular health issues and elevated blood pressure, both of which are associated with a greater risk of depressive disorders (43, 44). Thus, reducing screen time may play a critical role in addressing mental health concerns, as well as associated cardiovascular risks, particularly in vulnerable populations such as university students.

The implications of this study highlight the potential advantages of sports participation for mental health in the digital era. Regular involvement in sports may contribute to improved psychological resilience, reduced SMA, and lower levels of screen time, which, in turn, can alleviate symptoms of depression, anxiety, and stress. This suggests that encouraging sports participation among female university students could have substantial benefits for both physical and mental health, fostering a healthier balance between digital engagement and real-life activities. Despite its contributions, this study has certain limitations. The sample was restricted to female varsity students from a single urban area in Pakistan, which may limit the generalizability of the findings. Additionally, reliance on self-reported measures for assessing SMA, depression, and screen time could introduce response bias. Future research could address these limitations by including a more diverse sample and incorporating objective measures of screen time and physical health indicators such as resting heart rate. Further studies should also consider the role of sleep patterns, as well as the potential gender differences in SMA and mental health outcomes. Expanding the focus to male university students could reveal different patterns and inform targeted interventions. Moreover, future research should explore strategies to promote balanced screen time behaviors, considering the rapid technological advancements impacting young adults' daily routines. Such research can ultimately inform more comprehensive approaches to mental health support in university settings, tailored to address the unique challenges posed by the digital age.

CONCLUSION

This study examined social media addiction (SMA) and its impact on mental health disorders among female university students, revealing that female varsity athletes experienced lower levels of SMA and symptoms of depression, anxiety, and stress (DAS) compared to non-athletes. The findings underscore a strong positive relationship between SMA and depression, emphasizing that mental health challenges associated with social media use extend beyond athletic participation. These insights highlight the importance of addressing both mental and physical well-being among university students, suggesting that structured interventions like sports participation may be beneficial in mitigating SMA and enhancing mental health among female students.

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