

BEYOND THE SCREEN: EXPLORING THE RELATIONSHIP BETWEEN SOCIAL MEDIA ADDICTION, MENTAL HEALTH DISORDERS, AND PROCRASTINATION IN YOUNG PAKISTANI ADULTS

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ABSTRACT

The purpose of the present study was to explore the association between social media addiction, mental health disorders, and procrastination among young adults in Pakistan. A cross-sectional survey research design was employed, with data collected from 231 participants using convenience sampling. Data analysis was conducted using IBM SPSS (Version 20). A range of standardized scales and measures were used to assess the study variables, including the Bergen Social Media Addiction Scale, Patient Health Questionnaire, Severity Measure for Social Anxiety Disorder, Perceived Stress Scale, Appearance Anxiety Inventory, Brief Histrionic Personality Disorder Scale, Insomnia Severity Index, and Irrational Procrastination Scale. The findings revealed significant positive correlations among all study variables, with social media addiction showing strong positive associations with depression ($r = .54, p < .001$), social anxiety ($r = .47, p < .001$), body dysmorphic concerns ($r = .41, p < .001$), histrionic personality tendencies ($r = .33, p < .001$), insomnia ($r = .43, p < .001$), and procrastination ($r = .48, p < .001$). Furthermore, significant differences were observed across time-based usage groups, with individuals spending 6–8 hours per day on social media reporting the highest levels of psychological distress and addiction. Overall, these findings contribute to the growing body of literature on the complex relationship between social media use and mental health, highlighting that psychological risk is shaped not only by the amount of time spent online but also by the patterns, intensity, and purpose of social media engagement.

Keywords: Social Media Addiction, Mental Health Disorders, Procrastination, Young Adults in Pakistan, Psychological Impact

INTRODUCTION

In recent years, the relationship between social media use and mental health has attracted considerable scholarly attention. Social media has been associated with a range of mental health-related issues, with some studies reporting negative effects on well-being while others suggest potential positive effects (Berryman et al., 2018). Moreover, research on this issue in Pakistan is limited, despite a surge

in social media use (Saleem et al., 2016). This study aims to address this gap by examining the relationship between social media addiction, mental health disorders, and procrastination among young adults in the Pakistani context.

To understand this relationship, it is important to first define social media and social media addiction. Social media platforms are web-based technologies that enable users to develop networks and share content, information, and

knowledge (Merriam-webster). These platforms serve as mediums for forming relationships, facilitating self-expression, and promoting self-fulfilment (Bacarella et al., 2018). However, excessive use of such networks may lead to social media addiction, characterized by an inability to control the urge to access these platforms, which can contribute to significant mental health problems (Kuss & Griffiths, 2017).

Conceptualizing Social Media Addiction:

Problematic social media use can be described using six central components (Griffiths et al., 2017):

1. **Salience:** Social media becomes the most important activity in an individual's life, dominating thoughts, feelings, and behaviour.
2. **Mood Modification:** Use of social media significantly affects mood, either enhancing positive feelings (e.g., happiness) or reducing negative feelings (e.g., anxiety).
3. **Tolerance:** Increasing amounts of time spent on social media are required to achieve the same mood-modifying effects.
4. **Withdrawal:** Inability to access social media results in irritability, restlessness, or other negative emotional states.
5. **Conflict:** Excessive social media use leads to conflicts with personal relationships, work, or academic responsibilities.
6. **Relapse:** Attempts to reduce or control social media use fail, resulting in a return to previous patterns of excessive use.

Social Media Usage Trends in Pakistan

In Pakistan, social media has seen tremendous growth, with 71.7 million active users till the early months of 2024. This constitutes 29.5% of the entire population. The most significant factor that leads to the sharp increase is the widespread use of smartphones, where 99.1% of social media users use mobile devices to access social media outlets (Data Reportal, 2024). Facebook remains a leading social media outlet in Pakistan after YouTube, Instagram, and TikTok (Data Reportal, 2024). However, the rapid growth of social media in the country has also raised concerns over misinformation, cyberbullying, and online privacy.

Social Media Addiction and Depression

Depression, which is a global mental health challenge affecting more than 350 million people (World Health Organization, 2017), has been linked with social media addiction. Symptoms of depression, such as low self-esteem, solitude, cyberbullying, and disturbed sleep patterns, are associated with social media use (Reilly et al., 2018; Ahmad et al., 2018).

In a study of university students in Pakistan, male students using social media mainly for playing games were more likely to be depressed compared with students using it for socializing (Ahmad et al., 2018). Another cross-national research indicates that excessive use of social media is determined by multiple external causes, including high levels of social isolation and physical inactivity (Meena et al., 2012; Moreno et al., 2013), and numerous internal antecedents, such as low self-control and unreasonable usage expectations (Wegmann et al., 2015).

Social Media Addiction and Social Anxiety Disorder

Social media addiction has been associated with social anxiety disorder (SAD). A study conducted in Turkey has determined that individuals with social media or smartphone addictions have higher levels of social anxiety (Darcin et al., 2016; Baltaci, 2019). Further studies have highlighted the importance of self-esteem and social comparison in this association, particularly in relation to platforms such as Instagram (Jiang & Ngien, 2020).

Some individuals who experience SAD prefer the internet as a medium of communication versus face-to-face interaction to avoid direct social encounters that could exacerbate symptoms and feelings of loneliness (Caplan, 2005; Antony et al., 2005).

Social Media Addiction and Body Dysmorphic Disorder

Excessive use of social media has also been associated with body dysmorphic disorder (BDD), a psychiatric disorder characterized by preoccupation with imagined defects in one's physical appearance (American Psychiatric Association, 2013). Appearance-related social networking sites, including Instagram and Facebook, are found to contribute to body

image distortion, body dissatisfaction, and disordered eating behaviors (Eckler et al., 2017; Rizwan et al., 2022).

Research indicates that daily exposure to images that have been altered or retouched or images of the “ideal” beauty on social media sites, can raise the risk of body dissatisfaction and developing eating disorders, particularly among adolescent girls (Tiggemann & Slater, 2017; Cohen & Blaszczynski, 2015).

Social Media Addiction and Histrionic Personality Disorder

Histrionic Personality Disorder (HPD), characterized by emotional intensity and a marked need for attention (APA, 2013), has also been associated with social media addiction. Individuals with HPD engage in excessive social media use as a way of getting approval and validation and attention-seeking behaviors that involve frequent posting of selfies (Sorokowski et al., 2016; Faruk et al., 2020).

Research studies have demonstrated that an overreliance on social media enhances the need for social approval, which is a basic characteristic associated with HPD (Savci et al., 2021).

Social Media Addiction and Insomnia

Insomnia, another problem related to social media addiction, is defined as poor quality of sleep or sleeping troubles. It has been demonstrated that extended and late-night engagement with social media platforms has negative effects on sleeping habits, one of which is sleep difficulty and waking up tired (Garrett et al., 2016; Malaeb et al., 2020).

Disrupted sleep further contributes to mental health issues such as anxiety and depression, creating a vicious cycle of poor well-being and excessive social media use (Raudsepp, 2019).

Social Media Addiction and Procrastination:

Many studies have also found an association between social media addiction and procrastination. A positive correlation was found between social media addiction and academic procrastination in a Saudi Arabian cross-sectional study (Al Shaibani, 2020). Another research study conducted in Indonesia highlighted that mild social media addiction is

associated with mild academic procrastination (Muslikah & Andriyani, 2018). The most recent study in Nigeria demonstrated that social media addiction is a predictor of both academic procrastination and academic performance (Anierobi et al., 2021). A survey of Turkish university students revealed that Instagram addiction significantly contributed to academic procrastination without adversely affecting academic performance (Pekpazar et al., 2021).

This review underlines the intricate and diverse interplay between social media addiction and various psychological disorders. Although these social media platforms offer connections and avenues for self-expression, their excessive use leads to a plethora of mental health issues, such as depression, anxiety, body image problems, and even insomnia. There is a growing trend of social media addiction globally, but scarce research has been conducted on this issue in Pakistan. This study tries to uncover an important issue by looking into the phenomenon for this particular group of young Pakistani adults with a view toward informing locally adapted mental health interventions.

Objectives:

- To examine the association between social media addiction and psychological outcomes, including depression, social anxiety disorder, body dysmorphic disorder, histrionic personality disorder, insomnia, and procrastination.
- To analyze the relationship between duration of social media use and levels of social media addiction, psychological disorders, and procrastination.
- To investigate the influence of different social media platforms (Facebook, Instagram, TikTok, Twitter) on social media addiction, psychological disorders, insomnia, and procrastination.

Hypothesis:

H1: There is a significant positive relationship between social media addiction and depression.

H2: There is a significant positive relationship between social media addiction and social anxiety disorder.

H3: There is a significant positive relationship between social media addiction and body dysmorphic disorder.

H4: There is a significant positive relationship between social media addiction and histrionic personality disorder.

H5: There is a significant positive relationship between social media addiction and insomnia.

H6: There is a significant positive relationship between social media addiction and procrastination.

H7: There are significant differences in social media addiction, psychological disorders, and procrastination across groups based on daily duration of social media use.

H8: There are significant differences in social media addiction, psychological disorders, and procrastination across different social media platforms

Method

Research Design

A cross-sectional survey research design was employed to examine the association between social media addiction, mental health disorders, and procrastination.

Participants and Sampling

The sample size was determined through the G*Power 3.1 software (Faul, Erdfelder, Buchner, & Lang, 2009). Thus, adopting a medium level of effect size, a confidence level of 95%, and $\pm 5\%$ precision with $p = 0.05$ centering the sample, the number of participants required was at least 200 individuals. Altogether, convenience sampling yielded a total of $N = 230$ participants comprising young adults who were used in the study. Data collection was done both online and face-to-face.

Inclusion Criteria

Participants were required to:

1. Be between the ages of 18 and 40 years.
2. Use various social media platforms.
3. Reside in Pakistan, including Azad Jammu and Kashmir (AJK) and Gilgit-Baltistan (GB).

Exclusion Criteria

The study excluded:

1. Adolescents, children, and older adults.
2. Individuals who do not use social media.

3. Individuals diagnosed with any psychiatric or medical disorders.

Setting, Data Collection, and Duration

Data collection was conducted online via social media platforms and physically through questionnaires distributed among university students. The research was carried out from June to September 2022.

Instruments

1. Demographics Sheet

The demographics sheet included information such as name, age, gender, socioeconomic status, nationality, and occupation. Additional questions assessed participants' social media usage, the most used platform, time spent with friends, and satisfaction with their relationships.

2. Bergen Social Media Addiction Scale (BSMAS)

Developed by Andreassen et al. (2017), the BSMAS assesses social media addiction using six items based on Griffiths' criteria (salience, mood modification, tolerance, withdrawal, conflict, and relapse). It is rated on a 5-point Likert scale (0 = very rarely, 4 = very often), with high reliability ($\alpha = 0.88$).

3. Patient Health Questionnaire-9 (PHQ-9)

Developed by Kroenke et al. (1999), this 9-item instrument assesses the severity of depression, with responses ranging from 0 (not at all) to 3 (nearly every day). A total score of 10 or above indicates the presence of depression. It has demonstrated high reliability ($\alpha = 0.86-0.89$).

4. Severity Measure for Social Anxiety Disorder (SM-SAD)

Developed by the American Psychological Association (2014), the SM-SAD is a 10-item scale used to assess the severity of social anxiety disorder in adults. It has excellent reliability ($\alpha = 0.86$).

5. Appearance Anxiety Inventory (AAI)

Developed by Veale et al. (2013), the AAI measures body dysmorphic disorder symptoms. It includes 10 items divided into two subscales:

avoidance (items 1, 3, 4, 7, 9, and 10) and threat monitoring (items 2, 4, 6, and 8). Scores range from 0 to 40, with high reliability ($\alpha=0.89$).

6. Irrational Procrastination Scale (IPS)

Developed by Steel (2002), this 9-item scale measures irrational delay tendencies, with scores ranging from 9 to 45. Reliability for this study's sample was moderate ($\alpha=0.41$).

7. Brief Histrionic Personality Disorder Scale (BHPS)

Developed by Ferguson and Negy (2014), the BHPS assesses attention-seeking and seductiveness through 11 items rated on a 4-point Likert scale (1-4). Total scores range from 11 to 44, with acceptable reliability ($\alpha=0.79$).

8. Insomnia Severity Scale (ISI)

Developed by Morin et al. (2001), the ISI evaluates the nature, intensity, and impact of insomnia. It is rated on a 5-point Likert scale (0 = no problem, 4 = very severe problem). Higher scores indicate greater severity of insomnia. The ISI has high reliability ($\alpha=0.90-0.91$).

Result

The present study examined the relationships between social media addiction, mental health disorders, and procrastination among participants. Descriptive statistics were applied to summarize the demographic characteristics of the participants, and the internal consistency of the study instruments was assessed using Cronbach's alpha coefficients. Pearson correlation analyses and one-way analyses of variance were conducted to examine associations and group differences among the study variables. All statistical analyses were performed using IBM SPSS Statistics (Version 20).

Table 1 Demographic Characteristics of Participants (N=231).

Characteristics	Categories	f	%
Gender	Male	155	67.1
	Female	76	32.9
Age	18- 25 year	200	86.6
	26-34 year	25	10.8
	35-40 year	6	2.6
Education	Intermediate	21	9.1
	Bachelor	201	87.0
	Masters	9	3.9
SES	Lower Class	9	3.9
	Middle Class	218	94.4
	Higher Class	4	1.7
Occupation	Students	218	94.0
	Unemployed	11	4.8
	Government servant	2	0.9
Nationality	Pakistani	225	97.4

Characteristics	Categories	f	%
Gender	Male	155	67.1
	Foreigner	6	2.6

Table 1 presents the demographic characteristics of the participants (N = 231). The majority of the sample consisted of males (67.1%) and individuals aged 18–25 years (86.6%). Most participants held a bachelor's

degree (87.0%) and belonged to the middle socioeconomic class (94.4%). The sample was predominantly Pakistani (97.4%), with a small proportion of foreign nationals (2.6%).

Table 2 *Bivariate correlation among Study Major Variables*

Variable	M	SD	1	2	3	4	5	6	7
1 Social Media Addiction	11.3	5.02	~						
2 Depression	11.1	5.74	.54***	~					
3 Social Anxiety	13.6	8.69	.47***	.62***	~				
4 Body Dysmorphic	13.6	8.95	.41***	.49***	.59***	~			
5 Histrionic Personality	21.9	6.27	.33***	.38***	.47***	.56***	~		
6 Insomnia	11.2	6.56	.43***	.47***	.42***	.43***	.37***	~	
7 Procrastination	26.2	4.69	.48***	.49***	.46***	.43***	.23***	.43***	~

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As shown in Table 2, social media addiction was significantly and positively correlated with depressive symptoms ($r = .54, p < .001$), social anxiety symptoms ($r = .47, p < .001$), body dysmorphic symptoms ($r = .41, p < .001$), histrionic personality traits ($r = .33, p < .001$),

insomnia symptoms ($r = .43, p < .001$), and procrastination ($r = .48, p < .001$). These findings indicate that higher levels of social media addiction were associated with greater psychological distress and increased procrastination.

Table 3 *Mean differences in social media addiction, mental health symptoms, and procrastination across daily social media use duration*

Variables	0-2 hours		2-4 hours		4-6 hours		6-8 hours		More than 8 hours		F (4, 226)	p
	M	SD	M	SD	M	SD	M	SD	M	SD		
SMA	7.38	5.21	11.6	4.61	12.0	4.43	12.5	5.15	11.8	4.88	7.01	.000
PHQ	7.91	5.18	11.7	5.36	11.5	5.11	12.8	6.49	10.6	6.53	3.95	.004
SM-SAD	10.7	8.47	13.4	8.59	13.3	8.31	17.0	7.64	14.3	10.4	2.42	.04

AAI	11.8	8.28	13.6	8.65	12.9	8.57	15.8	9.62	14.8	10.1	1.15	.33
IPS	24.0	3.94	26.2	5.21	26.6	3.86	26.5	4.90	27.2	5.36	2.36	.05
BHPS	18.4	6.06	21.7	5.63	22.1	6.40	24.6	6.39	22.4	5.80	4.62	.001
ISI	6.79	6.02	10.5	5.81	11.7	6.81	11.5	5.51	22.8	6.36	7.69	.000

Note. SMA = Social Media Addiction; PHQ = Patient Health Questionnaire-9 (depressive symptoms); SM-SAD = Severity Measure for Social Anxiety Disorder; AAI= Appearance anxiety inventory; IPS = Irrational Procrastination Scale; BHPS =Brief Histronic

Personality Scale (BHPS); ISI = Insomnia Severity Index.

Table 3 presents the results of one-way analyses of variance examining mean differences in social media addiction, mental health disorders, and procrastination across categories of daily social media use duration.

Table 4

Mean differences in social media addiction, mental health symptoms, and procrastination across social media platforms

Variable	Facebook		Instagram		Tiktok		Twitter		F(3, 227)	p
	M	SD	M	SD	M	SD	M	SD		
SMA	11.5	5.13	10.3	4.97	11.8	4.68	13.8	4.44	1.84	.12
PHQ	11.4	5.99	10.0	5.58	11.3	5.24	14.4	4.77	2.09	.08
SAD	13.7	8.65	12.0	8.97	15.8	7.57	17.9	8.32	2.22	.06
AAI	14.1	8.85	12.8	9.54	14.1	7.8	13.4	9.09	.261	.90
IPS	26.5	5.01	25.8	4.82	25.5	3.25	27.3	4.08	.639	.63
BHPS	21.8	6.32	21.8	6.42	21.5	5.87	23.3	6.54	.316	.86
ISI	11.3	5.92	10.6	7.53	10.5	6.48	15.8	3.14	2.21	.06

Note. SMA = Social Media Addiction; PHQ = Patient Health Questionnaire-9 (depressive symptoms); SM-SAD = Severity Measure for Social Anxiety Disorder; AAI= Appearance anxiety inventory; IPS = Irrational Procrastination Scale; BHPS =Brief Histronic Personality Scale (BHPS); ISI = Insomnia Severity Index.

Table 4 presents the analysis of variance for the study variables across different social media platforms. The results indicate no significant mean differences between the variables and the platforms. Although mean scores were descriptively higher for Twitter users, these differences did not reach statistical significance.

Discussion

This study explored the association between frequent social media use, mental health disorders, and procrastination among young adults in Pakistan. In light of the widespread use of social media and its growing connection with mental health concerns in the country (Data Report, 2022), the findings provide meaningful insight into how social media addiction relates to psychological conditions such as depression, social anxiety disorder, body dysmorphic disorder, histrionic personality disorder, insomnia, and procrastination. The results align with existing international research, reinforcing evidence that problematic social media use is closely associated with psychological distress and diminished productivity among young adults.

Social Media Addiction and Depression:

The primary hypothesis examined the relationship between social media addiction and depressive symptoms. The findings revealed a significant moderate association between the two variables, indicating that greater levels of social media addiction are linked to higher levels of depression. This result is consistent with prior research by Hand and Shuwang (2020), which also reported a positive association between social media dependence and depressive symptoms, suggesting that increased engagement is associated with worsening emotional well-being. These findings may be explained by patterns of passive consumption, frequent exposure to idealized portrayals, reduced face-to-face social interaction, and increased social comparison. Together, these factors can foster feelings of inadequacy, emotional strain, and a general decline in mood.

Social Media Addiction and Social Anxiety Disorder:

The second hypothesis examined the relationship between social media addiction and social anxiety disorder, and the findings strongly supported this association. A significant positive correlation was observed, indicating that higher levels of social media addiction are linked to an increased risk of social anxiety. This finding is consistent with earlier work by Koo et al. (2015), which

reported that excessive social media use can negatively influence face-to-face social behavior and overall well-being. Heavy reliance on online interaction may reduce self-confidence and weaken interpersonal communication skills, making direct social encounters more stressful. In contrast to studies that examine how social anxiety influences social media use, the present research approaches the relationship from the opposite direction, suggesting that problematic social media use may contribute to the development of social anxiety disorder.

Social Media Addiction and Body Dysmorphic Disorder

The findings related to the third hypothesis also confirmed a positive association between social media addiction and body dysmorphic disorder. This relationship aligns with earlier research by Ryding and Kuss (2020), which identified frequent engagement with appearance-focused social media as a factor linked to body image concerns and BDD symptoms. In the Pakistani context, where this issue has received limited scholarly attention, the present study highlights how repeated exposure to unrealistic beauty ideals on social media may foster body dissatisfaction and feelings of inadequacy, ultimately contributing to BDD. Image-centered platforms, in particular, appear to intensify concerns about physical appearance by promoting idealized standards that are difficult to attain, leading to increased psychological distress.

Social Media Addiction and Histrionic Personality Disorder

The fourth hypothesis examined the association between social media addiction and histrionic personality disorder. The results revealed a significant positive relationship, suggesting that excessive engagement on social networking platforms may intensify traits associated with HPD. In particular, frequent reassurance-seeking and attention-focused interactions appear to contribute to the expression of these symptoms. These findings are consistent with previous studies by Sorokowski et al. and Renner et al., which reported that behaviors such as frequent image sharing, monitoring likes and comments, and active self-presentation online are commonly linked to

histrionic traits. Social media platforms, by encouraging visibility and attention-oriented interaction, may therefore reinforce image-focused and attention-seeking behaviors characteristic of HPD.

Social Media Addiction and Insomnia

The fifth hypothesis explored the relationship between social media addiction and insomnia, revealing a strong positive association between the two. This finding aligns with earlier research by Malaeb et al. (2020), Nursalam et al. (2018), and Garrett et al. (2016), which showed that excessive social media use, particularly during nighttime hours, disrupts sleep patterns and increases the risk of insomnia. Factors such as prolonged screen exposure, stimulating content, and extended online engagement may delay sleep onset and reduce overall sleep quality (Vandewalle, 2009). These sleep disturbances can have broader effects, contributing to reduced well-being and impaired daily functioning.

Social Media Addiction and Procrastination

The sixth hypothesis investigated the relationship between social media addiction and procrastination, revealing a notable positive correlation. The results indicate that spending excessive time on social media limits the time available for other responsibilities, thereby fostering procrastination. This aligns with earlier studies conducted by Muslikah and Andriyani (2018), which found a link between social media addiction and academic procrastination, as well as similar conclusions reported by Al Shaibani. Within the context of Pakistan, this area remains largely unexplored, underscoring the necessity for greater awareness of time management and self-regulation techniques to diminish the effects of social media on productivity.

Duration of Social Media Use and Mental Health

The seventh hypothesis examined how social media addiction, psychological disorders, and procrastination varied across groups based on daily social media usage. Findings indicated that participants who spent six to eight hours per day online reported the highest levels of social media addiction, depressive symptoms,

social anxiety, and histrionic personality traits. Those exceeding eight hours daily showed increased procrastination and insomnia. Interestingly, some psychological indicators were comparatively lower in this highest-use group (more than 8 hours), suggesting that the impact of social media is shaped not only by duration but also by the purpose of use. Engaging in functional activities, such as academic tasks, content creation, online work, or seeking social support, may help mitigate negative mental health outcomes, emphasizing that time alone is an insufficient measure of risk (Coyne et al., 2020; Riehm et al., 2019). Notably, body dysmorphic disorder scores did not differ significantly across usage groups, indicating that the type of content exposure may play a more critical role than duration in influencing body image concerns.

Comparison of Psychological Variables Across Social Media Platforms

The final hypothesis explored differences in social media addiction, psychological disorders, and procrastination across various social media platforms. The results showed no statistically significant differences in mental health outcomes among Facebook, Instagram, TikTok, and Twitter, suggesting that the choice of platform alone may not determine psychological risk. However, Twitter users reported higher average scores for addiction, depression, social anxiety, insomnia, and procrastination, which could be linked to the platform's content environment, including greater exposure to cyberbullying, misinformation, and politically charged material, rather than entertainment-focused use. TikTok users, on the other hand, exhibited higher levels of body image-related concerns, likely influenced by the platform's visual emphasis, use of filters, and culture of comparison. These findings indicate that psychological outcomes are shaped more by the type of content consumed, engagement patterns, and individual motivations than by platform choice alone. They underscore the need for future research to examine platform-specific features, user interactions, and how these factors relate to mental health.

Conclusion

This study provides strong evidence that higher levels of social media use are associated with poorer psychological well-being and reduced productivity among young adults in Pakistan, with significant relationships observed between social media addiction and depression, anxiety, body dysmorphic disorder, histrionic personality disorder, procrastination, and sleep disturbances, alongside notable differences across gender and socioeconomic groups. The findings further indicate that psychological outcomes are influenced by more than duration of use alone, as patterns, motives, and platform-specific engagement also play an important role in shaping mental health outcomes. Overall, these results emphasize the need for culturally relevant intervention strategies to address problematic social media use and reduce its adverse psychological effects.

Limitations and Future Directions

Despite offering meaningful insights, the present study has certain limitations that should be acknowledged. First, the use of a cross-sectional survey design restricts the ability to determine causal relationships among the study variables. Future studies would benefit from adopting longitudinal or mixed-methods designs to provide deeper and more explanatory evidence.

Second, the sample consisted of a relatively small and homogeneous group of young adults. This limits the extent to which the findings can be generalized to broader populations. Subsequent research should include larger and more diverse samples to strengthen external validity.

Third, the reliance on self-report measures may have introduced social desirability bias, potentially affecting the accuracy of participants' responses. The use of cross-informant ratings and further validation of assessment tools within the local context is therefore recommended.

Finally, the measurement instruments were originally developed within individualistic cultural settings. Their applicability in collectivist societies, such as Pakistan, requires careful examination. Future research should focus on the translation, cultural adaptation, and cross-language validation of these

instruments to ensure cultural relevance and measurement accuracy.

Implications:

This study demonstrates a significant association between social media addiction and mental health outcomes, particularly depression, social anxiety disorder, and body dysmorphic disorder. These findings highlight the necessity for focused mental health strategies aimed at identifying and managing excessive social media use. Educational institutions can contribute to mitigation efforts by fostering digital literacy and promoting effective time-management practices to help reduce procrastination among students.

Furthermore, the results stress the importance of culturally sensitive interventions, as patterns of addictive behavior vary across gender and socio-cultural groups. Public health programs may play a critical role in increasing awareness among young adults about the psychological risks linked to excessive social media engagement. Future research should examine causal pathways and adapt psychological interventions to collectivist cultural contexts. Overall, these implications provide meaningful direction for intervention development, policy formulation, and subsequent research.

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