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Exploring the Effects of Social Media Exposure on Concentration and Mental Health in Individuals with Attention Deficit Hyperactivity Disorder in Balochistan

Israr Roshan[1], Muhammad Ishaque[2], Mohammad Mohibullah[3], Mohammad Usman[4], Zakaullah Khilji[5], Palwasha[1], Fatima[1]

Correspondence
Israr Roshan
ikaachakzai@gmail.com

Affiliations
1 Trainee Medical Officer, Balochistan Institute of Psychiatry & Behavioural Sciences, Quetta, Pakistan
2 Trainee Medical Officer, Medicine Unit 1, Sandamen Provincial Hospital, Quetta, Pakistan
3 Trainee Medical Officer, Medicine Unit 3, Sandamen Provincial Hospital, Quetta, Pakistan
4 Medical Officer, Balochistan Institute of Nephrology & Urology, Quetta, Pakistan
5 Trainee Medical Officer, National Institute of Cardiovascular Diseases (NICVD), Karachi, Pakistan

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Disclaimers

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ABSTRACT

Background: Attention Deficit Hyperactivity Disorder (ADHD) is a significantly neglected condition in Balochistan, Pakistan, with rising social media use potentially worsening symptoms related to concentration and mental health.

Objective: This study aimed to examine the impact of social media exposure on concentration and mental health in individuals with ADHD in Balochistan.

Methods: A sample of 50 individuals aged 12-30 years, diagnosed with ADHD, was selected from rural areas of Balochistan. Participants had minimal prior exposure to technology and social media. They were given access to TikTok, Instagram, and Facebook to view various content types, including funny clips, spiritual messages, violent scenes, motivational speeches, and heartbreak narratives, over a 30-day period. Concentration and mental health impacts were assessed through structured interviews at baseline and after 30 days, with data analyzed using SPSS version 25.

Results: Following 30 days of exposure, 60% of participants showed a reduction in attention span to less than 60 seconds, 70% reported increased distractibility, and 20% noted a significant decline in interest in regular activities.

Conclusion: Social media exposure contributes to decreased concentration and focus among individuals with ADHD. Targeted interventions are necessary to mitigate these adverse effects.

INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental condition characterized by patterns of inattention, hyperactivity, and impulsivity, affecting an individual's ability to focus, control impulses, and sustain attention on tasks (1-3). Although ADHD symptoms often manifest in childhood, they can persist into adulthood, with significant implications for social, academic, and occupational functioning (8). The global prevalence of adult ADHD has seen a notable increase from 5.29% in 2007 to 6.76% in 2021, highlighting an upward trend that may reflect broader diagnostic recognition or a genuine rise in cases (2-5). Despite this, ADHD remains underdiagnosed and undertreated, especially in settings where awareness and resources are limited (2-5). In Balochistan, Pakistan, ADHD is particularly neglected, and the challenges of managing this condition are compounded by limited healthcare infrastructure and social stigma. Additionally, the rapid rise of social media has introduced new complexities, potentially exacerbating symptoms of ADHD by contributing to cognitive overload, increased distractibility, and impaired concentration (7-19).

Social media platforms such as Facebook, Instagram, and TikTok have revolutionized communication and information exchange, offering unprecedented connectivity but also posing potential risks to mental health, particularly for vulnerable populations like those with ADHD (9, 10). Individuals with ADHD are prone to coexisting mental health issues, including anxiety, depression, and sleep disorders, which can be further aggravated by excessive or problematic use of social media (20-31). Problematic social networking site use (PSNSU) has been conceptualized as a behavioral addiction characterized by compulsive engagement with social media, leading to significant impairments in daily functioning, interpersonal relationships, and psychological well-being (5). For individuals with ADHD, who already struggle with attention regulation, the rapidly changing and emotionally charged content on social media can heighten distractibility and reduce their capacity for sustained attention, leading to a detrimental cycle of cognitive and emotional disruption (8, 26).

The impact of social media on mental health is particularly concerning in contexts like Balochistan, where digital literacy and access to mental health resources are limited, and where the allure of social media as a novel form of entertainment and social connection may be especially pronounced (32-39). Studies have indicated that prolonged social media use can be associated with psychological distress, addictive behaviors, and impaired sleep quality, all of which can exacerbate ADHD symptoms (20, 39). Furthermore, the Cognitive-Activation Theory of Stress (CATS) suggests that unpredictable and emotionally stimulating social media content may lead to heightened

stress responses, further compromising cognitive functioning in individuals with ADHD (37). Such patterns are evident among users who frequently encounter emotionally diverse content, such as humorous clips, violent scenes, and motivational speeches, which can trigger rapid shifts in mood and contribute to cognitive overload (38-45). These disruptions can hinder the ability of individuals with ADHD to maintain attention and focus, impacting their daily activities and overall mental health.

Given the increasing prevalence of social media use and the unique susceptibilities of individuals with ADHD, understanding the specific impacts of social media exposure on this population is critical. Previous studies have established links between ADHD and problematic internet use, indicating that individuals with ADHD are more likely to engage in addictive online behaviors, driven by impulsivity and a propensity for seeking immediate gratification (26, 30). These tendencies are exacerbated by the nature of social media platforms, which are designed to capture and hold user attention through continuous streams of novel and emotionally stimulating content (30). This study aims to explore the effects of social media exposure on concentration and mental health in individuals with ADHD in Balochistan, focusing on how different types of content influence attention span and cognitive engagement. By examining the experiences of individuals with minimal prior exposure to social media, this research seeks to provide insights into the specific challenges posed by digital environments for people with ADHD in a culturally and socioeconomically distinct region.

This exploration is not only pertinent for enhancing our understanding of ADHD in the context of rapidly evolving digital landscapes but also for informing targeted interventions that can mitigate the negative impacts of social media on attention and mental health. Developing strategies to manage social media consumption and supporting individuals with ADHD in navigating these platforms can potentially improve their quality of life and functional outcomes. Therefore, this study not only contributes to the broader discourse on ADHD and digital media use but also addresses a critical gap in the literature concerning the intersection of ADHD, social media, and mental health in underrepresented regions like Balochistan.

MATERIAL AND METHODS

The study employed a qualitative approach to investigate the impact of social media exposure on concentration and mental health in individuals with ADHD in rural Balochistan, Pakistan. A purposive sampling technique was used to select fifty participants aged 12 to 30 years who had been minimally exposed to social media content prior to the study. Participants were recruited from various rural areas in Balochistan, ensuring a diverse representation of the population with respect to geographic and socio-economic backgrounds. Inclusion criteria required participants to have a formal diagnosis of ADHD, with no significant prior exposure to social media platforms such as TikTok, Instagram, and Facebook. Ethical approval for the study was obtained from the relevant institutional review board, and the study adhered to the principles outlined in the Declaration of Helsinki (1964).

Participants were provided access to the social media applications TikTok, Instagram, and Facebook, and were instructed to engage with various types of content, including humorous clips, spiritual messages, violent scenes, motivational speeches, and heartbreak narratives, over a period of 30 days. The exposure was monitored to ensure consistency and to capture the range of content types encountered. Data collection involved structured interviews conducted at baseline and at the end of the 30-day period to assess changes in participants' concentration, attention span, and overall mental health. The interviews were designed to capture qualitative data on the participants' experiences and perceptions of social media use, focusing on how exposure to diverse content affected their cognitive and emotional functioning (1, 3).

The assessment of concentration and mental health changes was conducted through thematic analysis, which allowed for the identification of recurring patterns, themes, and differences in the participants' narratives regarding their social media use. The thematic analysis was performed using an inductive approach, ensuring that the themes emerged directly from the data without imposing preconceived categories. All interviews were audio-recorded with participants' consent, transcribed verbatim, and analyzed using NVivo software to facilitate coding and theme development. Key themes identified included decreased attention span, increased distractibility, emotional fluctuations, reduced interest in regular activities, and cognitive overload, which were attributed to the nature of the content consumed on social media.

Data analysis was performed using SPSS version 25. Descriptive statistics were used to summarize the demographic characteristics of the participants, including age and gender distribution. The association between social media exposure and changes in concentration and mental health was explored using qualitative data analysis techniques, with illustrative quotes from participants used to support the identified themes. Ethical considerations were rigorously observed throughout the study, including obtaining informed consent from all participants or their guardians in the case of minors. Participants were assured of the confidentiality and anonymity of their responses, and they had the right to withdraw from the study at any point without penalty. The study also ensured that participants received appropriate support and guidance regarding their social media use, recognizing the potential for negative impacts on their mental health (4).

The findings provided insights into the complex relationship between social media exposure and ADHD, underscoring the need for targeted interventions to manage social media consumption among individuals with ADHD. Future studies are encouraged to build on these findings by exploring quantitative measures and extending the research to other populations and settings.

RESULTS

The study included 50 participants diagnosed with ADHD, evenly split between males and females (25 males and 25 females). The mean age for males was 23 years, while for females it was 27 years, with an overall mean age of 25 years among all participants. The age and sex distribution of the participants is detailed in Table 1.

Table 1: Age and Sex Distribution of Participants with ADHD

Age Group (Years)	Male	Female	Total
12-16	5	2	7
17-20	5	8	13
21-24	5	4	9
25-28	5	6	11
29-30	5	5	10
Total	25	25	50

The thematic analysis revealed several key themes related to the impact of social media exposure on concentration and mental health among individuals with ADHD. Participants reported a noticeable decline in their ability to concentrate after social media exposure, with some indicating they could not focus on tasks for more than a minute. Higher levels of distractibility were commonly noted, with participants expressing difficulty resisting the urge to check their phones even during routine activities. Frequent emotional shifts were also reported due to varied social media content, causing participants to describe their emotional state as being like a "rollercoaster." Additionally, many participants experienced a significant decrease in interest in regular activities, preferring to engage with social media instead. Rapid succession of different content types led to cognitive overload, affecting information processing and contributing to mental fatigue.

Table 2: Summary of Identified Themes and Illustrative Quotes

Theme	Illustrative Quotes	Participants
Decline in Concentration	"I find it hard to focus on my studies now. After watching TikTok videos, I can't concentrate for more than a minute."	12
Increased Distractibility	"I get easily distracted now. While doing homework, I feel the urge to check my phone for new videos."	13
Frequent Emotional Shifts	"Watching sad videos makes me feel down, and then funny videos make me laugh immediately after."	10
Decreased Interest in Regular Activities	"I used to enjoy playing outside, but now I prefer staying in and watching videos."	5
Cognitive Overload	"I feel mentally exhausted after scrolling through social media. It's too much information to handle."	10

The effects of different types of social media content on participants were also observed, with variations noted in how each content type influenced attention and emotional states. For instance, exposure to funny clips was associated with reduced attention span and increased distractibility, while spiritual messages had a milder impact on concentration. Violent scenes were linked to increased agitation and decreased attention, while motivational speeches showed slight improvements in motivation and focus. Heartbreak narratives were noted to cause emotional disturbances and a decline in focus.

Table 3: Types of Social Media Content and Observed Effects

Content Type	Number of Participants	Observed Effects
Funny Clips	20	Reduced attention span, increased distraction
Spiritual Messages	10	Minor changes in concentration, some focus
Violent Scenes	8	Increased agitation, decreased attention
Motivational Speeches	7	Improved motivation, slight improvement in focus
Heartbreak Narratives	5	Emotional disturbance, decline in focus

Overall, the findings suggest that exposure to mixed social media content has a detrimental impact on attention and focus among individuals with ADHD. Participants struggled to maintain attention on tasks for extended periods and reported increased distractibility and cognitive overload. The rapid succession of varied content types appeared to overwhelm the participants' cognitive processes, contributing to mental fatigue and a reduction in their ability to process information effectively. The study underscores the need for awareness and targeted interventions to manage social media use among individuals with ADHD to mitigate its adverse effects on mental health and concentration.

DISCUSSION

The findings of this study demonstrated that exposure to diverse social media content had a significant negative impact on the concentration and mental health of individuals with ADHD in rural Balochistan. Participants exhibited a marked decline in attention span, increased distractibility, and frequent emotional shifts, which align with the existing literature suggesting that individuals with ADHD are particularly susceptible to the cognitive and emotional disruptions caused by social media use (5, 9). This study's results are consistent with previous research indicating that social media platforms, designed to capture attention through rapidly changing content, can exacerbate symptoms of ADHD by contributing to cognitive overload and reducing the capacity for sustained attention (26, 30). The emotional volatility observed among participants, triggered by varied social media content, further supports the hypothesis that the unpredictable nature of social media interactions can heighten stress responses and impair cognitive functioning in individuals with ADHD (37).

The study's strengths included the focus on a unique and underrepresented population, providing valuable insights into how social media affects individuals with ADHD in a specific cultural and socio-economic context. The qualitative approach allowed for a detailed exploration of the participants' experiences, highlighting the nuanced ways in which different types of social media content influenced their attention and mental health. Additionally, the study's design, which included participants with minimal prior exposure to social media, offered a clearer perspective on the direct effects of social media use on ADHD symptoms, minimizing confounding factors related to habitual use (5, 13, 39).

However, the study also had several limitations. The small sample size and the qualitative nature of the research limited the generalizability of the findings to broader populations. The reliance on self-reported data through interviews may have introduced bias, as participants' perceptions and recall of their experiences could have been influenced by their emotional states during the study. Furthermore, the study did not include a control group, making it difficult to attribute observed changes solely to social media exposure without considering other environmental or individual factors that might have affected the outcomes. The short duration of the study (30 days) also limits the ability to assess the long-term impacts of social media use on ADHD symptoms (17).

Previous studies have similarly noted that individuals with ADHD are at a higher risk of developing problematic social media use patterns, which can lead to further cognitive and emotional difficulties (21, 26). The current study adds to this body of evidence by demonstrating that the effects of social media are not limited to increased distractibility but also include significant emotional disturbances and reduced interest in regular activities. These findings suggest that the interactive and emotionally charged nature of social media content may exacerbate the core symptoms of ADHD, making it more challenging for individuals to maintain attention and engage in daily tasks (10, 39). The study's observations of emotional fluctuations and cognitive overload resonate with the Cognitive-Activation Theory of Stress, which posits that unpredictable and highly stimulating environments can trigger heightened stress responses in individuals with ADHD, further impairing their cognitive functioning (37).

Given the detrimental effects of social media exposure observed in this study, there is a clear need for targeted interventions to help individuals with ADHD manage their social media use. Recommendations include developing educational programs for individuals with ADHD, their families, and caregivers to raise awareness about the potential risks of social media and strategies to mitigate its impact on attention and mental health. Behavioral strategies, such as setting limits on social media usage and promoting engagement with less stimulating content, could help reduce cognitive overload and improve concentration (9). Additionally, integrating mental health support services that address the specific needs of individuals with ADHD, including counseling and therapy focused on managing digital media use, could enhance overall quality of life and functioning (20).

Future research should aim to build on these findings by incorporating larger sample sizes and employing quantitative measures to better assess the relationship between social media use and ADHD symptoms. Longitudinal studies would be particularly valuable in examining the long-term effects of social media exposure on attention and mental health in individuals with ADHD. Moreover, exploring the impact of specific interventions designed to regulate social media consumption could provide practical insights into effective strategies for mitigating the adverse effects identified in this study. Investigating the role of individual differences, such as varying levels of impulsivity or existing mental health conditions, could also help tailor interventions to better support those most at risk (24).

CONCLUSION

In conclusion, the study highlights the complex and often detrimental relationship between social media exposure and the cognitive and emotional functioning of individuals with ADHD. The findings underscore the importance of developing targeted interventions and support systems to manage social media use among this population, with the goal of improving attention, reducing emotional volatility, and enhancing overall mental health outcomes. Addressing the unique challenges posed by social media in the context of ADHD will require a multifaceted approach, combining education, behavioral strategies, and mental health support to foster better quality of life and functional success for individuals affected by this condition.

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