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The Impact of Social Media Usage On Attention Span And Cognitive Control In Adults Aged 20-40.

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Abstract: The growing usage of social media has raised some concerns about its potential impact on attention span and cognitive functioning among individuals who use social media for extended periods of time. The studies in the past suggest that there is a significant impact on attention span that is reduced attention capacity has been noticed when there is frequent digital engagement and multitasking. Studies and literature that is already existing has highlighted both positive and negative effects of social media such as global connectivity and increased distractibility has shown the need for standardized investigation. Quantitative and cross sectional, cor-relational methods have been used in this study to examine the relationship between social media usage, attention span and cognitive control. Around 63 samples were collected from adults aged 20-40 years via online and social media. The data was collected through personalized questionnaires about usage of social media and included standardized questionnaires such as including the Social Media Usage Scale (SMUS), Mindful Attention Awareness Scale (MAAS), and Cognitive Failures Questionnaire (CFQ). The findings indicated that higher levels of social media usage were significantly associated with lower mindfulness (attention) and increased cognitive failures, indicating reduced cognitive control.

Keywords : *Social media usage, attention span, cognitive control, mindfulness, cognitive failures.*

1. Introduction:

In recent years, social media has become an integral part in everyday life, significantly influencing how individuals communicate, access information, make purchases and even generate income through content creation. Early 1990s-2000s platforms such as sixdegrees.com (1997) and black planet(1999) introduced the concept of networking online.Later websites like Myspace brought in the concept of individual profiles and their profile based communication which further circulated and increased the use of these platforms. The real explosion occurred with the launch of well known Social media platforms, Facebook (2004), Youtube (2005) and Twitter (2006) together increasing the usage with user generated content along with profiling.With increased connectivity and digital access, users of social media are not only increasing in numbers but each individual is spending a significant amount of their time on these applications(Perrin, 2015)With global connectivity the geographic barriers between people merged together bringing in online communities of different interests under one umbrella. The constant news consumption, the need for entertainment and networking has also increased.There's a growing body of research suggesting that heavy engagement with digital media, especially social media may be linked to changes in attention. Sustained focus, in particular, seems to be affected (Ophir et al., 2009). Studies have indicated that frequent interruptions, even brief ones, may reduce the ability to maintain focus on a single task over time (Rosen et al., 2014). Research suggests that individuals who frequently engage in media multitasking may show reduced attentional control, along with increased distractibility (Ophir et al., 2009). For individuals who engage with social media frequently, there can be some difficulty in sustaining attention during routine tasks. Social media platforms aren't exactly neutral spaces. They're built quite deliberately, it seems to keep people engaged for as long as possible. Features like infinite scrolling, autoplay, notifications, algorithm-based feeds. They appear to work together in a way that keeps attention moving, almost continuously and there's rarely a clear stopping point (Montag et al., 2019; Wilmer et al., 2017). From a cognitive point of view, this kind of environment can place ongoing demands on attention. Attention isn't something we have in unlimited supply , it needs to be directed, shifted, and sometimes pulled back. When content keeps changing quickly, that process becomes more frequent. In a way, social media seems to rely on that. This current study holds a significant value at multiple levels, including individual, societal, and academic domains, by providing a deeper understanding of how social media usage interacts with core cognitive processes such as attention and cognitive control.

2. Review of Literature :

Foundation work regarding the relationship between multimedia and attentional control has been raised by Ophir,Nass & Wagner (2009) in their research where they examined media multitasking and found reduced attentional control, increased distractibility, and difficulty filtering irrelevant information among heavy users. This topic of social media and cognition has been approached from multiple perspectives. Melina R. Uncapher and Anthony D. Wagner (2018) reported comparable deficits in cognitive control and attentional regulation. Studies centered on smartphone usage, such as Andrew Wilmer, Lauren Sherman, and Jason Chein (2017), highlight how frequent interruptions and notifications contribute to attentional lapses, task-switching, and reduced cognitive efficiency.

However recent research is shifting towards examining the structural and design features of social media platforms. Jorge Giraldo-Luque (2020) and Matthew Epstein and colleagues (2022) emphasize how algorithm-driven feeds, infinite scrolling, and reward-based mechanisms are designed to capture and sustain user attention. Present days, digital media is being ruled by short form content research on short-form content by Chiossi and colleagues (2023) suggests that fast-paced media may reduce sustained attention, increase cognitive load, and promote superficial processing.

When compared to international literature, Indian studies show strong alignment in findings, particularly in academic contexts. Research by Bhakta (2017), Elantheraiyan and Shankarkumar (2019), and Vanithamani and colleagues (2021) consistently report increased distraction, reduced attention span, and lower academic performance associated with excessive social media use. Recent Indian studies focusing on short-form content are further reinforcing these findings.

However, differences emerge in terms of focus and methodology. International studies tend to explore underlying cognitive mechanisms and platform design, whereas Indian research more often emphasizes behavioral outcomes such as academic performance and study habits, frequently relying on survey-based methods.

Despite the predominance of negative findings, some studies offer a more nuanced perspective. Catherine Cardoso-Leite and colleagues (2021) suggest that the impact of digital media varies based on usage patterns, context, and individual differences, with certain forms of engagement potentially supporting selective attention and rapid information processing.

Overall, the literature suggests a consistent association between excessive social media usage and reduced attentional control, while also highlighting variations based on context, methodology, and patterns of use.

3.Research Methodology:

The present study adopts a quantitative, cross-sectional, correlational research design to examine the relationship between social media usage, attention span, and cognitive control among adults aged 20–40 years.

3.1 Research Objectives

Assess levels of social media usage,Examine attention span using standardized measures,Evaluate cognitive control in everyday functioning.

3.2 Research Design

A quantitative approach was used to enable objective measurement of variables through standardized instruments. The cross-sectional design allowed data collection at a single point in time, providing a snapshot of current usage patterns and cognitive functioning. A correlational framework was employed to examine the relationship between social media usage (independent variable) and attention span and cognitive control (dependent variables). While this design does not establish causation, it is suitable for identifying patterns of association in naturally occurring behaviors such as social media use.

3.3 Sample Size and Sampling Technique

The study included 63 participants aged 20–40 years who actively use social media.A non-probability sampling method was used, combining: Convenience sampling and Snowball sampling.

Participants were recruited through online platforms such as WhatsApp and Instagram. While this method supports accessibility and relevance to the research context, it may limit generalizability.

3.4.1 Inclusion Criteria

Adults aged 20–40 years, regular social media users (minimum ~1 hour/day), basic proficiency in English, Provided informed consent

3.4.2 Exclusion Criteria

Diagnosed neurological or severe psychiatric conditions, attention-related disorders (e.g., ADHD), use of psychoactive medication affecting cognition, Incomplete or inconsistent responses

3.5 Tools and Instruments

Social Media Usage Questionnaire (self-structured) – to assess usage patterns, mindful Attention Awareness Scale (MAAS) – to measure attention span, cognitive Failures Questionnaire (CFQ) – to assess cognitive control. Higher MAAS scores indicated lower attentional awareness, while higher CFQ scores reflected greater cognitive failures.

3.6 Procedure

Data were collected using an online survey via Google Forms. Participants completed: Demographic details, Social media usage questionnaire, MAAS, CFQ

Participation was voluntary, and informed consent was obtained. Responses were screened for completeness before analysis.

3.7 Ethical Considerations

The study adhered to ethical guidelines including: Informed consent, voluntary participation, confidentiality and anonymity, no psychological or physical harm.

3.8 Statistical Analysis

Data was analyzed using the following: Descriptive statistics (mean, standard deviation), Pearson's correlation coefficient (r)

The level of significance was set at $p < 0.05$.

4. Data & Interpretation:

Table 1: Descriptive Statistics for Social Media Usage, Attention Span, and Cognitive Control (N = 63)

Variable	Mean	SD	Min	Max
SMU	32.81	3.19	27	38
MAAS	2.19	0.21	1.80	2.53
CFQ	57.81	3.19	52	63

Interpretation : The descriptive statistics indicate a moderate to high level of engagement with social media platforms. Since higher MAAS scores indicate lower attentional awareness, the results suggest moderate levels of attentional functioning within the sample. The mean score is indicating a moderate level of cognitive failures among participants.

Table 2 : Pearson's Correlation Between Social Media Usage, Attention Span, and Cognitive Control (N = 63)

Variable	SMU	MAAS	CFQ
SMU	—-		
MAAS	0.54	—--	
CFQ	0.78	0.62	—-

Note. r = Pearson's correlation coefficient. All correlations are significant at $p < .05$.

These results indicate a moderate positive correlation between social media usage and attention span ($r = .54$, $p < .05$). Here, higher MAAS scores represent lower attentional awareness; therefore, this finding suggests that increased social media usage is associated with reduced attention. A strong positive correlation was observed between social media usage and cognitive control ($r = .78$, $p < .05$), this indicates that higher social media usage is associated with increased cognitive failures and also reduced cognitive control. Along with these, a moderate positive correlation was found between attention span and cognitive control ($r = .62$, $p < .05$), this suggests that lower attentional awareness is associated with higher cognitive failures.

5. Analysis and Discussion :

The findings indicate that social media engagement constitutes a significant part of participants' daily routines, with most individuals reporting moderate to high levels of usage. With respect to attention span, participants demonstrated moderate levels of attentional awareness. Given that higher scores on the Mindful Attention Awareness Scale (MAAS) reflect lower

attentional awareness, the results suggest the presence of occasional attentional lapses, indicating reduced sustained focus among individuals with higher digital engagement. Similarly, cognitive control, as measured by the Cognitive Failures Questionnaire (CFQ), showed moderate levels of cognitive failures. The variability in scores indicates that while some individuals maintain stable cognitive functioning, others experience frequent lapses in attention, memory, and action.

Correlation analysis revealed a moderate positive relationship between social media usage and attention span ($r = 0.54$). Considering the scoring direction of MAAS, this finding indicates that increased social media usage is associated with reduced attentional awareness. In other words, higher engagement with social media corresponds to greater difficulty in sustaining attention. A strong positive relationship was also observed between social media usage and cognitive control ($r = 0.78$), indicating that higher levels of usage are associated with increased cognitive failures. This suggests that individuals who engage more intensively with social media may be more prone to distraction, forgetfulness, and reduced cognitive regulation in everyday tasks.

These findings can be understood in light of the nature of social media environments, which involve continuous exposure to rapidly changing stimuli, frequent task-switching, and increased cognitive load. Such conditions place sustained demands on attentional systems, potentially leading to attentional fragmentation and cognitive fatigue over time. The strong association between attention span and cognitive control further aligns with theoretical perspectives that position attentional regulation as a core component of executive functioning.

At the same time, certain methodological factors may have influenced the strength of the observed relationships. The use of self-report measures may have resulted in aligned subjective perceptions of attention and cognitive functioning. Additionally, the relatively homogeneous sample in terms of age and digital exposure may have contributed to more consistent patterns across variables.

6. Conclusion :

The present study examined the relationship between social media usage, attention span, and cognitive control among adults aged 20–40 years. In the context of increasing digital engagement, the findings highlight that social media usage represents not just a routine activity, but a behavioral pattern with measurable cognitive associations.

The results indicate that higher levels of social media usage are associated with reduced attentional awareness and increased cognitive failures. Individuals with greater engagement demonstrated more frequent lapses in attention, difficulty sustaining focus, and reduced cognitive control in everyday functioning. These findings suggest that excessive interaction with social media may contribute to attentional fragmentation and diminished cognitive efficiency. However, the impact of social media is not uniformly negative. Its effects appear to depend on patterns and intensity of use, as well as individual differences. While moderate and intentional use may support connectivity and access to information, excessive and unregulated engagement may interfere with attentional stability and cognitive control.

7. Limitations of the study:

The study limits the ability to establish causal relationships between social media usage and cognitive functioning because of its cross-sectional nature. Personality traits, mental health status, sleep patterns or type of content consumed plays a significant role on how the attention and cognitive control is affected, which this study did not take into account. The primary focus of this study was quantitative which did not include qualitative aspects that could provide a deeper understanding of participants experiences.

8.Suggestions for future research:

Including larger and more diverse samples will help increase generalisability across different age groups, professions, and socio-cultural backgrounds. Using probability sampling techniques might further improve representativeness and also reduce sampling bias. While examining causal relationships between social media usage and changes in attention span and cognitive control over time longitudinal designs could be employed. Future designs could conduct research on specific type of content such as Reels and Youtube shorts to explore specific types of effects. Additional variables can also be included such as personality traits, mental health status, sleep patterns, and lifestyle factors that may provide a more comprehensive understanding. Including qualitative research by conducting open ended questions and conducting interviews may benefit by giving personalised correlation. Future studies may also focus on developing and evaluating interventions aimed at improving attentional control and cognitive functioning among individuals with high levels of social media usage.

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