International Journal of Advanced Multidisciplinary Research and Studies

Relationship between Addiction to Social Media Use and Attention Span among High School Students: A Cross-Sectional Survey

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Abstract

The advancement in information and communication technology transformed the way people communicate and interact with each other. The social media becoming the integral parts of daily life pave way for immense opportunities among adolescents including social connectedness, transfer of information and academic involvement. However, the excessive use of social media raised growing concern relating to behavior, cognitive and learning outcomes. This study employ descriptive cross sectional research design. A number of 230 high school students serve as the total sample of the study which was selected using convenience sampling. Findings have shown that excessive use of social media lead to decrease attention span of the adolescents. Majority of the students have moderate to high level of social media addiction accounted for 58% and 38% while attention span have 62% of students having moderate level. It was concluded that addiction to social media use has a negative inverse relationship with attention span. The age and time spent on social media are associated factors to social media addiction.

Introduction

The rapid development of information technology leads to frequent usage of social media. This becomes the critical avenue among people to connect, collaborate and exchange ideas within the social media ecosystem. Social media is a digital technology to pursue information and content sharing that leads to engagement while featuring user-generated content [1]. Global Web Index reported that people spend to social media an average of 2 hours and 23 minutes per day to communicate. They revealed that 98 percent of digital consumers were internet users tantamount to social media users. Frequent social media users facilitate an environment where comparison to unrealistic selves to the filtered versions of others online can be harmful to the mental well-being leading to self-consciousness [2].

A total of 5.17 billion social media users around the world accounted for about 64 percent of the world population [3]. The drastic increased of the social media users' means addiction to various platforms. Consequently, the social media decreases the attention span of the students. Previous studies explained that endless contents influence the difficulties of students to focus on tasks as it drops the level of concentration [4]. Pew Research Center reported that 31 percent of teenagers lost focus as to frequent mobile checking and almost 50 percent were doing off tasking which is distracting to them. The social media algorithmic contents influence how students behave in the classroom leading to social media addiction and attention span decline.

The social media affect the aspect of life while destroying the ability to focus. One of the articles stated that "When first got back to his place, he thought his attention was failing as it was dominated by his phone; this might affect his ability to think deeply" [5]. Studies have shown that teenagers spend more hours scrolling to their social media [6]. This result to decrease concentration and focus on studying. She cited that the social media is linked to attentional control and distraction (National Library of Medicine). With this, the researchers were provoked to study this timely issue of addiction to social media use and attention span of the high school students. Its implication to the learning of the students will guide the academic administration on the policy implementation inside the institution.

The rationale of the study is to impact awareness on the high school students and implicate rules and regulation of the schools.

This will help student achievement and achieve better academic results. As the National Institute of Health (2023) study found that teenagers who spend more than 2 hours on social media receive lower exam scores. Increasing focus to studies decrease the gravitate to social media towards a better learning experience.

Research Aims and Objectives

This study aims to investigate the relationship between addiction to social media use and attention span as perceived by the High School Students in Riyadh International Schools.

Specifically, it sought to answer the following objectives:

1. Identify the demographic profile of the high school students in terms of:
    1.1 Age
    1.2 High School Level
    1.3 Family Income
    1.4 Time spent in social media

2. Determine the level of addiction in social media use of the high school students.

3. Determine the attention span of the high school students

Based on the existing literature and the purpose of the study, two hypotheses were formulated:

Hypothesis 1 (H1). There is no significant relationship between addiction to social media use and attention span being perceived by the high school students.

Hypothesis 1 (H2). There is no significant difference on the level of social media addiction when grouped according to their demographic characteristics.

Materials and Methods
Study Design

This study utilized descriptive cross-sectional research design in order to determine the relationship between addiction to social media use and attention span as perceived by the High School Students. With this research design, the researchers rely on the data gathered by the researchers as to the outcomes of the study.

Data Collection Methods

The researchers used an adapted questionnaire as the main collecting tool in order to meet the goals of the study. This research tool consists of 3 sections. The first section gathers the demographic characteristics of the respondents. The next was the Social Media Addiction Scale by Sahin (2018). This SMAS measure the level of addiction to social media use. It is composed of 29 statements which is answerable by a 5 point Likert scale where (5) Strongly agree; (4) Agree; (3) Neither agree nor disagree; (2) Disagree; (1) Strongly disagree. All items from the SMAS were scored in the same direction without reverse coding. The scoring categories utilized this mean score range as: 1.0-2.33 (low level of addiction); 2.34-3.66 (moderate level of addiction); 3.67-5.00 (high level of addiction). The last part was the Mindful Attention Awareness Scale (MAAS) by Brown (2003) which measures the level of attention. It has a 6 point Likert scale as (6) Almost always; (5) Very frequently; (4) Somewhat frequently; (3) Somewhat infrequently; (2)Very infrequently; (1)Almost never. In terms of validity, the adapted questionnaires underwent pretesting to 10 high school students which are not be part of the actual study. In MAAS, all items are worded in the same direction without reverse coding being done. The scoring categories utilized this mean score range as: 1.00 – 2.49 (low mindfulness); 2.50 – 4.49 (moderate mindfulness); 4.50 – 6.00 (high mindfulness).

Sample Characteristics

Using convenience sampling technique, the researcher chooses 285 high school students from 5 International Schools in Riyadh. With the 285 responses, only 230 responses were complete and considered accepted in the study. The total number of study participants was calculated using Slovins formula derived from the 1000 total population of the five International Schools. Those with incomplete answer to the questionnaire and do not have consent to this study will not be part of the study.

Survey Administration

The present study was conducted on January 5 to March 31, 2025 upon obtaining approval from the university research center and REU Institutional Review Board. Using an online tools e.g., Google forms, the link was sent to the respondents once they consented to the study. It took three times to follow up the responses to the research collection tool. This study used only one email address for each respondent to prevent multiple participation of the respondents.

Study Preparation

Before conducting the survey, the researchers made sure that all necessary documents and approval letters were handed. The researchers attended the meeting with their research supervisors on approaches that will be used before collecting data.

Ethical Consideration

Securing respondent's informed consent and Institutional Review Board (IRB) approval were necessary before the conduct of the study. The information that was gathered was treated with strictly confidentiality. The research information was disseminated. The study participants were recruited based on their willingness to participate in the study, the information concerning the study was availed to them through a consent form.

Statistical Analysis

All data were entered into the Statistical Package for Social Sciences, Version 29.0 (SPSS 29, IBM Corporation, Armonk, NY, USA); the 0. 05 level of significance was set for all tests, and all the necessary analyses were performed accordingly. The initial analysis included the calculating the demographic characteristics using frequency and percentage. One way Analysis of Variance was computed to examine the significant differences between demographics and all variable of interest (addiction to social media usage, attention span). Additionally, Pearson's correlation was computed to explore association between addiction to social media usage and attention span.

Results

Table 1: Demographic Characteristics of the High School Students (n=230)

Variable	Indicators	Frequency	Percentage
Age	10-12 years old	21	9.13%
	13-15 years old	46	19.57%
	16-19 years old	163	71.30%
High School Level	Level 7	21	9.13%
	Level 8	9	3.91%
	Level 9	11	4.79%
	Level 10	26	11.30%
	Level 11	95	41.3%
	Level 12	68	29.57%
Family Income	10,000-20,000	129	56.09%
	21,000-30,000	83	36.09%
	31,000-50,000	11	4.78%
	51,000 above	7	3.04%
Time spent in social media	1 to 2 hours per day	11	4.78%
	2 to 3 hours per day	27	11.73%
	3 to 4 hours per day	43	18.69%
	4 to 5 hours per day	149	64.80%

The table above presents the demographic characteristics of the high school students. The table reveals predominantly older adolescents were age ranging from 16-19 years old. This population has a significant engagement to social media. It can be seen in the table that majority of the respondents were late adolescents garnering a 71.3% with as much as 65% of digital engagement of up to 4 to 5 hours per day. There are 41% of the teenagers who engaged to social media use where mental health is very poor. They explicated that 1% with the highest social media usage have greater risk of suicidal tendency [6].

In the academic level, the students were grade 11 and 12 which represents the 70% of the entire population. Interestingly, this segment of the high school students was older adolescents. Adolescence is the phase of life between child and adult years with age ranging from 10 to 19. The level 8 and 9 were the lowest portions of the high school study sample with 4 percent each level [7]. This implies the social media attributes to academic setting as social media foster collaboration and knowledge sharing. The social media is incorporated to education in order to increase student engagement and teaching benefits. Previous studies have shown that social media fostered differentiated

instructions while digital literacy gap persist [8].

In terms of family income, majority of the students have a family income of 10,000-20,000 monthly. Studies have revealed that social capital have more influence on the use of technology while increasing the educational level of the family is significantly increase the family income [9]. Lastly, the overall time spent per day in social media revealed that almost two-third of the high school students engaged more than 5 hours to social media. This shows that 65% were heavy users relying to internets and social media. Recent studies indicate that a significant higher number of adolescents in the digital media have higher risk of issues in mental health [10]. This suggests that those students spending 4 to 5 hours per day are vulnerable to digital fatigue and decrease well-being.

Table 2: The Distribution of Addiction to Social Media Use and Attention Span of the High School Students

Variable		Low	Moderate	High
Social Media Addiction	N	7	133	89
	percent	3.04%	58.2%	38.69%
Attention Span	N	10	142	78
	percent	4.30%	61.80%	33.91%

The above table shows the level of social media addiction and attention span among high school students. Based on the table, a large number of students have moderate social media addiction accounted for 58.2% (n=133) while a substantial almost 40% have high addiction to digital engagement. Previous studies concluded that social media use is correlated with the internet use duration. They also found that high school students use social media for many purposes while others struggle to control the use of internet [10].

Meanwhile for attention span, it can be seen that the majority of the students have moderate attention span having 62 % (n=142) and 34% representing students with high attention span. Recent studies reveal that 10 to 15 minutes is the average attention span of the students during lecture. This is a dropping from the previous 10 to 30 minutes. This means that most students have decrease learning engagement. The researchers reiterated that students learned differently which needs various teaching methods that fit to them. Certain tool is necessary to succeed on the part of the educators [11].

Table 3: Association between Addiction to Social Media Use and Attention Span

Variables	Statistical Test	Correlation Coefficient (r)	p-value (Sig.)	Decision rule	Interpretation
Social Media Addiction and Attention Span	Pearson r	-0.472	0.001	Reject the H_0	Statistically Significant

*Statistically significant at 0.05 significance level

The table shows the relationship between addiction to social media use and attention span. Based on the results, the pearson r test yielded a value of -0.472 indicating a negative correlation. This has an inverse relationship exists that means when the level of addiction to social media use increases, their attention span tends to decrease. Social media is a way of digital communication establishes connections and communities for socializing, shared instructions and posting user-created content. The use of social media expose majority of the adolescents to a multifaceted stimulating content online which condition the brain about the societal world [12]. Consequently, it can impair the ability of the mind to sustain its longer attention.

These tasks include studying, listening, reading during teaching sessions. Studies have shown that frequent usage of social media affects cognitive function such as less concentration, distraction and task-switching behavior. Since the frequency of notification is continuous, attention will be affected. One study reveals that social media influence the attention span of the secondary students resulting to disrupted focus to academic tasks caused by intense notification [13]. This agreed with the current study, that while the students spent more hours to social media, their sustained attention decline. A strong evidence of a negative strength of relationship between the two variables of interest.

Table 4: Difference on the level of social media addiction as to their demographic profile

Independent predictor variables	N	Statistical test	Test Statistic result	p-value (Sig.)	Decision rule	Interpretation
Age	230	ANOVA	13.16	0.000	Reject the H_0	Statistically significant
High School Level	230	ANOVA	8.34	0.082	Accept the H_0	Not statistically significant
Family Income	230	ANOVA	0.688	0.067	Accept the H_0	Not statistically significant
Time spent in social media	230	ANOVA	6.298	0.001	Reject the H_0	Statistically significant

*Statistically significant at 0.05 significance level

The table above shows the differences on the addiction on social media use when grouped according to their demographic profile. Based on the results, age and the time spent in social media yielded statistically significant results having a test statistic result of 13.16 and 6.298 with a p-value of 0.000 and 0.001 respectively. This means that the high school students demonstrated different time in social media use and various ages is associated with addiction to social media. However, the high school level and family income has no significant differences on social media addiction. The most active demographic in social media is the millennials [14]. Approximately there are 69% that use social media wherein age ranging from 18 to 24 makes u the largest share among all the generation that use instagram.

Discussion
Social media engagement among adolescent has been a growing behavioral concern that contributes to continued negative consequences. These concerns are decrease ability to focus, impaired cognitive function and excessive use of social media apps. Apparently, the use of social media is becoming a part of daily life either in school or home used for communication, learning and social connections. Attention, however, is a critical part of the student life in learning which is affected by the social media. The high school student's sustained attention was greatly affected as influenced by the frequent notification, multitasking and constant integration to daily live that reduce attention span and become distracted. The current studies have shown a negative moderate correlation between excessive social media use and attention span which tends to decrease the focus of concentration on most academic tasks as they increase exposure to social media.

For the age of the adolescents, this study found that age plays a significant role in the excessive digital engagement making them more vulnerable to certain developmental factors. These factors made adolescents more impulsive, peer connections and attention difficulties. Internet usage is a habitual art of the lives where 9 in 10 teens use social media. Their survey found that most of these social media has 13 minimum age requirement and that 8 to 12 children use social media. The major concern relating to social media is the mental health of this population [15]. Although it's expected but there are also positive effects of social media. Some include affirming sexual identities, connection with friends of similar interest and way of relieving stress.

The high school level is not a factor towards addiction related behavior on social media usage. Since the high school level is not a determining factor, the behavior related effects are influenced by the psychological factors and social media usage patterns. Another variable of interest is the family income. This predictor variable affects the social medial usage regardless of family income. Despite the socio economic status of the adolescents, the widespread availability and affordability of the smartphones made them more acquainted to social media. Similarly, studies have

concluded that majority of the high school students lived in urban areas with monthly family income of 300,000 to 600,000 Iraqi Dinars. It was found that 60.4% of students demonstrated social media addiction in moderate levels [16].

The time spent to social media by the high school students support the current literature that prolonged used of social media is correlated with high levels of addiction. With frequent checks to the notification at the mobile, the likelihood of habitual focus to social media instead of learning task is inevitable. This negatively affects the attention span of the high school students. Study found that majority of the high school students use mobile for sending messages, 33% used for social media and 35% used Facebook platform. This means that the high school students access social media frequently and sent more hours in a day [17].

Conclusion
The current study concludes that excessive social media usage has negative correlations with attention span among high school students in Riyadh International Schools. Based on the findings, a moderate inverse correlation exist signifying students engagement and addiction to social media and their ability to maintain focus. A large number of student's reported a moderate to high levels of addiction to social media while majority have moderate attention spans stressing the growing concern to high school students cognitive function as affected by social media.

Further, the findings reveals that age and time spent on social media were significant factors associated with social media addiction, while high school level and family income were not statistically significant predictors. This suggests that excessive social media use cuts across socioeconomic backgrounds and academic levels, emphasizing that accessibility and usage patterns play a more critical role than demographic profile alone.

Overall, this study underscores the need for increasing mindfulness to digital engagement such as social media as to educate students, parents and teachers. The international school will be benefitted from implementing digital literacy programs, attention-enhancing teaching strategies, and policies that promote balanced technology use. By addressing excessive social media engagement, educational institutions can help foster better attention, improved academic performance, and healthier learning environments for high school students.

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