

The Primary Impacts of Social Media Addiction on the Psychological and Physiological Well-Being of University Students

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Abstract. In today's internet-enabled world, where the popularity of social media use has become the norm. Social media, as a platform for people to exchange information and share their lives, tends to make people lose their sense of time and at the same time feel dependent on social media platforms. The emergence of this phenomenon just goes to show that social media can be addictive to people with poor self-control. To explore the impact of social media on people specifically, this study selects a group of college students and explores the key effects that social media addiction has on college students. At the same time to provide a theoretical basis for the prevention of students' physical and mental health in colleges and universities, this experiment used the questionnaire method to collect 111 samples, and the collected data were analysed for reliability and validity, and the Cronbach coefficient was obtained as 0.797 ($0.7 < \alpha < 0.8$) to prove that the survey has a good reliability. Through the correlation test, it was obtained that there is a negative correlation between social media addiction and college students' sleep quality, a negative correlation between social media addiction and college students' social relationships, and a positive correlation between social media addiction and college students' mood swings. The somatic and psychological health conditions of college students are significantly affected by social media dependence disorder, and the more addiction there is, the greater the impact on their physical and emotional health, including both physical and mental aspects.

Keywords: Social media, University students, Psychological well-being.

1. Introduction

As technology and science have advanced, Internet technology has gradually matured, social media applications (like Facebook, TikTok, and Weibo) have become an essential part of people's life, according to official statistics, social media has attracted a user base of over a billion globally, and college students as a group of social groups with the highest degree of acceptance of new things, how to control the time of engagement with social media has become a major concern in the society. The main concern in the society is how to control the time of using social media. Due to the timeliness, extensiveness, and interactivity of social media, it is difficult for some college students to

control the extent of their use of social media, thus neglecting their own health and real life. This study focuses on the emergence of such phenomena and investigates and analyses them accordingly.

The concept of social media addiction was developed by a team of researchers led by psychologist Cecily Andersen at the University of Bergen, Norway, who developed a Facebook Addiction Scale in order to study the rating of Facebook users' addiction, but with the rise of social media outlets such as Instagram, Twitter and other social media outlets, the Facebook Addiction Scale is beginning to become unsuitable for the general public's rating of social media addiction. So Anderson and his team replaced Facebook with social media and further improved the scale into Bergen Social Media Addiction Scale (BSMAS), which is important for the measurement and research of social media addiction.

Fung Gordon, a researcher at the University of Derby in the United Kingdom, has put forward the theory that social media helps people to become 'addicted to themselves', i.e., ontological addiction, which is analogous to alcohol addiction, drug addiction or gambling addiction. Meanwhile, researchers at Michigan State University in the United States are also exploring what is meant by the term 'social media addiction', and have found that people who use social media sites heavily exhibit behavioural characteristics similar to those of drug addicts. Instead, most of the research has been directed towards areas based on behavioural aspects, such as online game addiction, gambling addiction, mobile phone use addiction, and pornography addiction, among others [1-3]. Although research on related topics has addressed negative effects such as weakened memory, reduced attention span, and decreased executive functioning, the field still lacks attention to the physical and mental well-being of the college student cohort. Therefore, this study has important implications on how to mediate in college students' social media addiction and assess its effects on their physical and psychological well-being.

This study focuses on three important dimensions of social relationships, sleep quality, and mood swings of college students specifically. Meanwhile, finding and reading pertinent information is done using the literature analysis method, and the advantage of this method is that it can analyse the problem very well, which is conducive to the research. The core purpose of this research is to demonstrate how college students' physical and psychological health suffers due to social media addiction, in order to achieve this goal, a questionnaire survey was taken to compile and assemble data, and a scale was designed for the three dimensions of the college student group, so as to further explore the effects brought by social media addiction on the social relationships, sleep quality, and mood swings of university-attending scholars.

2. Research methodology

2.1. Questionnaire design

This study used several well-established psychometric tools in order to conduct a comprehensive assessment of the degree of addiction, quality of sleep, emotional state, and changes in interpersonal relationships presented by college students during social media use. Firstly, the intensity of addiction to social media among individuals was assessed based on the Bergen Social Media Addiction Scale (BSMAS) developed by Andreassen et al. An inquiry into the social media addiction state of adolescents was carried out with the Social Media Addiction Scale formulated by Andreassen et al. as the basis. The scale was rated on a Likert 5-point scale ranging from '1 = not at all' 1 to '5 = completely' 5, and contained five entries with questions such as 'I can't help but swipe on social media'. Range of scores from 5 to 25, greater addiction scores imply a stronger personal dependence on social media, and a Cronbach's alpha coefficient of 0.858 for good reliability.

To explore the potential impacts of social media use on sleep status, the study further employed the Pittsburgh Sleep Quality Index (PSQI). The scale assesses individual college students' overall perception of their own sleep quality, including several dimensions such as sleep quality, time to sleep, sleep duration, sleep efficiency, sleep disorders, etc., and is scored on a 5-point scale, with range of scores from 1 = not at all in accordance with the scale to 5 = completely in accordance with the scale. 'There are six questions, including 'I have trouble falling asleep'. Scores ranged from 6 to 30, in which higher scores imply poorer composition quality, with a Cronbach's alpha coefficient of 0.873.

At the emotional level, the study referred to the SCL-90 Symptom Self-Rating Scale (SSRS) items related to anxiety, depression and other emotions to assess whether college students feel anxious, depressed and other emotions when using social media. The relationship between college students' mood swings was explored by asking about social media use on a 5-point scale from "1 = not at all consistent" 1 to "5 = completely consistent" 5 questions with a range of 5-25 points with a total of 5 questions. There were 5 questions ranging from 5-25 points, with questions such as 'I feel that social media has affected my emotional stability'. With a higher score, social media's influence on an individual's emotional wellness becomes more marked, and the Cronbach's alpha coefficient is 0.872, which is a high level of reliability.

In addition, scrutinize the consequences of social media addiction for the real - world social bonds of college students, the study integrated relevant items from the Social Avoidance and Distress Scale (SAD) and the Interpersonal Competence Scale, and designed five items reflecting the reduction of real-life interactions, changes in socialising styles, and perceptions of interpersonal quality. Scores range from 5 to 25, and scores that are higher denote a more significant magnitude of perceived decline in social functioning by the individual, and the Cronbach's α for this part of the measure is 0.873. The impact of social media addiction on college students' social relationships was determined by the level of the scores, in terms of a reduction in real social interaction, changes in social interaction, and perceptions of the quality of social interaction to assess the impact of social media addiction's impact on college students' social relationships.

2.2. Data collection

The college student group is surveyed using a questionnaire survey method in this study, which is distributed and collected through the questionnaire star, in an effort to maintain the accuracy and randomness of the data, it also passes through the school's clubs and circles of friends, and finally collects 111 pieces of valid data, with an average age between 17-23 years old, and carries out the research of this experiment through the data collected in this time. Subsequently, SPSS30.0 software was used to carry out various analyses, including descriptive statistics, correlation analysis, and reliability and validity tests. Through these methods of analysis, the relevant hypotheses were verified and the results of the study were drawn.

2.3. Descriptive statistics

After descriptive statistics of the data, it was found that the college student population had a pronounced level of social media dependency with a mean value of 3.9159. With the rise of short-video platforms, social media has become more and more tempting for college students, and it is easier for college students with less self-control to become addicted to social media. On the variable of mood swings, the mean value of the collected group of university students reached 3.5701, which shows that the respondents are more volatile and less stable (Table 1).

Table 1: Descriptive statistics

	Minimum	Maximum	Mean	Standard	Deviation Variance
Social media addiction	1.33	5.00	3.9159	.80985	.656
Sleep quality	1.00	4.80	2.0112	.90317	.816
Mood swings	1.40	4.80	3.5701	.95554	.913
Social relationships	1.00	5.00	2.2935	.89919	.809

2.4. Correlation analysis

This study endeavors to comprehensively investigate the relationship within quantitative data through the method of correlation analysis, specifically concerning the degree of closeness of the relationship between each variable, through correlation analysis can better understand the interactions between the variables, to provide a strong support for the subsequent experiments. As demonstrated in Table 2, social media addiction has a negative correlation with sleep quality ($r=0.482$, $p<0.01$) and social relationships ($r=0.525$, $p<0.01$); The correlation between mood swings and social media addiction was significant and positively correlated ($r=0.440$, $p<0.01$) (Table 2).

Table 2: Table of correlation analysis

	Social media addiction	Sleep quality	Mood swings	Social relationships
Social media addiction	--			
Sleep quality	-.482 ^{**}	--		
Mood swings	.440 ^{**}	-.301 ^{**}	--	
Social relationships	-.525 ^{**}	.459 ^{**}	-.298 ^{**}	--

^{**}. Correlations are significant at the 0.01 level (two-tailed).

3. Research findings

For the college population, social media addiction has no benefits other than negative effects on physical and mental health, especially when compared to the real-life rich college population, In the prevalence of social media platforms has become more and more widespread, and college students are intoxicated by the virtual environment created by social media platforms. Therefore, their own physical and mental health seems more insignificant, but in fact, the cause of college students addicted to the Internet world is not only due to the information cocoon created by social media, but also due to the current social environment and employment pressure. Based on the influence exerted by social media upon the physical and mental health of university students, this study pays more attention to the study of sleep quality, mood swings and social relationships of college groups. And the data were collected through questionnaires, and the following conclusions were drawn.

3.1. The correlation between social media usage and sleep quality

According to the studies have found that college students who leverage social media platforms for longer periods of time tend to experience a substantial decrease in sleep quality, while a small

number experience insomnia, difficulty falling asleep, and early morning wake-up with no energy. Specifically, the use of social media will directly take up the time of sleep, making the time of falling asleep delayed, which leads to a reduction in the length of sleep. Meanwhile, the rich and varied information on social media is more likely to make the brain produce emotions of excitement and anxiety, which makes the brain unable to achieve a state of relaxation, thus affecting the speed and quality of sleep. Moreover, the blue light emitted by social media can inhibit the secretion of melatonin and disturb the biological clock of college students, which in turn affects the quality of sleep in collegiate learners physiologically.

3.2. Social media addiction and social relationships

Social relationships among college students are negatively influenced by social media addiction. Through the study, it can be seen that college students' addiction to social media causes them to spend a lot of time on virtual social networking, thus reducing the chance of face-to-face communication with people in reality, and excessive reliance on social media will also cause college students' interpersonal communication ability to decline, thus reducing the ability to organise their language, which is the most significant manifestation of 'social fear'. Social media platforms are often superficial, college students can't understand each other's real information through cold text communication, which makes them more susceptible to deception by fraud gangs. Shallow and fragmented social networking cannot replace deeper face-to-face communication in reality, which in turn affects the overall social environment and social quality.

3.3. Mood swings and social media addiction

The results of this study show that social media addiction can easily affect the mood swings of college students, social media was created to serve the public and provide emotional value for users, so social media is filled with a large number of individual users of the good life of the display, and college students are in the beginning stage of social integration, addiction to social media, easy to fall into the comparison with others to go, and can This may lead to negative emotions such as low self-esteem and anxiety. A large amount of fragmented information can also cause stress and irritation among college students, leading to mood swings.

4. Discussion

4.1. Social media affects sleep quality

Sleep is a command given by the brain when people become tired, and is an excellent way to relax by relieving oneself. It is generally accepted that sleep is a periodic state of unresponsiveness, where the level of consciousness decreases or simply disappears while the individual is in the sleep stage, and many physiological functions go into a state of hibernation [2]. And the quality of sleep often determines the individual's mental state in the next day's study or work. Consequently, sleep is a vital physiological need of human beings, and with the rapid development of society, era, and science and technology, the improvement of Internet technology, and the popularity of social media platforms, the frequency of college student groups in the night time to increase the use of social media, especially for the active use of social media, and mobile phones are still kept in networked state after going to bed which has a detrimental effect on sleep quality[3]. The results of this experiment show a significant negative correlation between social media addiction and sleep quality, which more clearly confirms the deep impact of social media addiction on college students' sleep

quality, and according to the report of the 2025 China Sleep Health Survey, nearly half of the people have sleep problems, and the post-90s and post-00s young people are suffering from a lack of sleep, resulting in a decline in energy and a prominent sense of sleepiness. Similarly, unreasonable sleep time will also lead to the reduction of sleep quality. Reasonably formulating sleep time, curtailing social networking platforms usage among college students and have a regular sleep schedule is a key task essential to regulating the psychological well-being of college students.

4.2. Social media addiction affects real-life socialising

Social relationship is an essential social skill for human beings as herd animals, but with the emergence of a large number of social media, fragmented life as well as the current social environment, which makes it difficult for college students to carry out in-depth social activities in reality to carry out, whether it is clubs and some ice-breaking activities more to promote the close relationship between people, but most of the college students still chose to put into the social software. The embrace of strangers to go, to college students as a representative of young people, may be due to different psychosocial needs and network social networking, so as to improve the construction of identity and the perfection of self-worth [4]. It is not denied that social media is fast and flexible for contemporary young people to meet friends and even lovers, but being in the network environment surrounded by fragmentation for a long time will lose the sense of reality for real life, that is to say, interpersonal relationships in the age of social media unconsciously weaken the sense of bodily presence in the mode of diversification of forms of interaction [5]. Due to the weakening of physical sensations, the emotional experience will be magnified, which will lead to college students pay too much attention to the feelings of others and neglect themselves, which will lead to the bias of self-perception, anxiety and uneasiness, and this negative influence will often be shown in reality, making the communication with others contradictory and unnatural, and will hinder the good establishment and development of social relations between themselves and the real society. Development [6,7]. As a result, social media addiction will not only reduce the social ability of college students, but also obstruct the progress of genuine interpersonal relationships, so contemporary college students, should properly adjust the use of social media plan, more into the experience of real life.

4.3. Fluctuating mood states

The release of information on digital social interaction platforms is an important means for college students to vent their emotions, and a large amount of fragmented and emotional information fills the network environment of social media, thus making the physical and mental health of college students affected. The results of this study show that there is a significant positive correlation between the mood fluctuations of college students and social media addiction, which shows that the longer the time of social media use, the more serious the impact on college students' emotions. This phenomenon may cause campus violence or interpersonal tension and other problems, so how to avoid this kind of tragedy is also a problem that society needs to focus on. As social media platforms can enable college students to freely share and express their emotions, thoughts and experiences so as to gain the understanding and empathy of others, this is one of the main reasons why the college population uses social media; On the other hand, the redundant fragmented information makes college students unable to correctly distinguish the authenticity of the information, at the same time, people tend to show their perfect side, which makes college students will produce inferiority complex and jealousy psychological feelings, making the network environment more hostile, more

likely to lead to the occurrence of network violence [8-10]. Reasonable control of the use of social media, reduce the browsing of negative information, focusing on the academic cultivation of collegians themselves, so as to reduce the mood swings caused by the Internet.

5. Conclusion

This study focuses on the main effects of an unhealthy fixation on social media platforms on the physical and mental health of collegians, and focuses on three dimensions of sleep quality, social relationships, and mood swings through data collection. From the results of the study, it can be concluded that social media addiction not only causes irreversible physical damage to college students, but also has a serious impact on their mental health. Theoretically, the results of the study provide university students with knowledge of the dangers of social media addiction; practically, they provide warnings for major universities about interventions to prevent social media addictive behaviours. Similarly, the present study has some limitations. First, this study is a cross-sectional study, and although it can reveal the bond in relation to dependence on social media and college students' sleep quality, social relationships, and mood swings, it cannot deeply explore the causal relationship between several variables. Therefore, subsequent research projects can consider exploring the relationship between different dimensional variables by controlling variables; second, this study only covered the representative group of college students, but it did not divide and study the group in detail, and reviewing the whole research process, it did not study college students of different genders and college students of different ages in detail, which may affect the universality of the research results and lead to a certain bias in the research results. Finally, this study only systematically analyses the collected data without experimental control, which can only provide a certain theoretical basis for social media addiction. Future studies can conduct in-depth analyses in different dimensions for different groups to study how social media addiction affects people even further.

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