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Social Media Addiction Among High School Students in Iraqi Kurdistan Region

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A B S T R A C T

Background: The using of social media platforms has increased dramatically in recent years, particularly among young people and teenagers. **Objective:** To determine social media prevalence addiction among high school students in Iraqi Kurdistan region. **Methods:** a cross-sectional design was conducted, involving 384 high school students who were interviewed directly to collect data on various aspects, such as socio-demographic data, social media usage history, and addiction to these platforms. The Bergen Social Media Addiction Scale (BSMA) was employed as the instrument for measuring addiction levels. The analysis of the collected data was adopted using SPSS, version 23. **Results**: The majority (78.2%) of students utilized multiple social media platforms. A significant proportion (68.8%) of students reported social media usage at bedtime. Approximately 17.4% of high school students had social media addiction. There was a significant association between social media addiction and the following factors: age ≥18 years (p=0.004), using multiple social media platforms (p=0.007), particularly using four or more platforms, and bedtime use of social media (p<0.001). However, gender and grade did not emerge as significant factors in relation to addiction of social media. **Conclusions**: Social media addiction among a sample of Iraqi high school students is high compare with many other countries. It is notably linked to age, using multiple platforms of social media, and bedtime social media usage. These findings indicate the importance of monitoring the utilization of digital tools. Further studies are required to explore the impact of awareness program and corrective measures.

INTRODUCTION

Social media (SM), also referred to as social networking, encompasses online platforms that enable the formation, distribution, and interchange of information, thoughts, and content within virtual communities. These platforms allow users to connect with others, engage in different types of communication such as text, images, videos, and audio. In today's world, social media plays significant role in communication, greatly impacting the way people interact, share information, and consume content, [1] and significantly influences various aspects of society. Instagram, Facebook, and TikTok are all well-known social media platforms, which enable individuals to maintain connections in an online environment irrespective of geographical barriers.[2] Social media usage ranks among the most popular online activities. The global number of social media users surpassed 4.59 billion individuals in 2022, rising to nearly 4.9 billion users in 2023. By January 2024, the numbers had increased further, reaching a total of 5.04 billion users worldwide, which accounted for 62.3% of the global population.

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Projections suggest that these rates will continue to rise, potentially reaching around 6 billion users by the year 2027.[3]

The prevalence of individuals using SM platforms has shown a significant increase in the last few years.[4] Additionally, the largest group users of social media globally consist of individuals who are younger than 24 years old, [5] particularly among children and adolescents, and these platforms have become an indispensable component of daily life,[6] as they offer easily accessible means of mass communication and serve various purposes including social interaction, gaming, entertainment, and academic pursuits.[7] The stringent measures adopted by numerous nations to combat the COVID-19 pandemic, such as lockdowns, quarantine, and social distancing protocols, have intensified the dependence on social media for communication, entertainment, and information dissemination.[8]

Despite the widespread utilization of social media and its various advantages such as facilitating connections, shaping one's identity, and acquiring knowledge about the world[9], the increased usage has also given rise to Social Media Addiction (SMA) and Problematic Internet Use (PIU) among young individuals. The growing dependence on social media for activities beyond seeking information has raised concerns regarding the potential negative impacts related with excessive use.[10, 11] Overuse of social media platforms has been linked to negative mental health consequences, including increased suicidal tendencies, feelings of isolation, and anxiety.[12] This can lead to a decline in mental health,[13] depressive symptoms,[14] unhealthy lifestyles,[15] fear of missing out, and social comparison.[16] Additionally, excessive use can lead to problematic behaviors like monitoring others,[17] engaging in online harassment,[18] and contributing to security violations.[19] Adolescents are at risk for increased paranoia, anxiety disorders, and aggressive emotions, making addiction to these platforms a significant concern.[20]

Additionally, recent studies have highlighted the adverse effects of social media platforms on different aspects of human life. Issues concerning individual privacy have also been raised by Ac.lar & Mersin[21], pointing out the vulnerabilities that come with online exposure. Furthermore, these platforms can have negative impacts on the academic performance, social behavior, and interpersonal relationships of adolescents.[22,23] The addictive nature of social media often leads individuals to become dependent on it without realizing.[24] Social media addiction defined as engaging excessively in online activities due to an irresistible compulsion to scroll through various social media channels and platforms, leading individuals invest excessive time and energy and can negatively impact other significant aspects of their lives. [25] The study of the social media addiction phenomenon among Iraqi high school students has not been previously conducted. Thus, this study was carried out to determine the prevalence of social media addiction among high school students in the Kurdistan region of Iraq.

METHODS

The research utilized a cross-sectional study design to meet its objectives in high schools in Duhok City, Kurdistan region, Iraq, from August 25th to December 20th, 2023.

In this study, researchers selected a sample of high school students from 10 different high schools using a multistage random sampling technique. The study involved high school students of both genders who either gave their own consent or had their parents' consent to participate. However, students with psychological or mental health issues were not included in the research.

Sample size was calculated using the Cochran formula ($x = Z^2pq/e^2$), which is commonly employed to estimate the sample size for large populations exceeding 1000 individuals. The formula incorporates the level of error (e), estimated prevalence of social media addiction (p), and its complement (q). In this research, the error level was set at 0.05, with both the estimated prevalence of social media addiction and q being 0.5. Based on these parameters and an estimated population of 18500 to 19000 students from 53 high schools in Duhok City with sex composition 52.6% females and 47.4 males, the study aimed to include approximately 384 students in its sample.

Numbers were assigned to the 15 schools and randomly 10 schools were chosen using a digit number chart. Within each selected school, five classes were picked randomly from a total of 8 to 10 classes, each containing 45 to 50 students. From each of these classes, 12 students were chosen at random based on a pre-generated list of student numbers ranging from 1 to 50. In total, 384 students encompassing 10^{th}, 11^{th}, and 12^{th} grades participated in the study.

The study's objective was communicated to the participants through direct interviews, and their

Table 1: Socio-demographic characteristics of high school students (n=384)

Characteristics	Frequency	Percentage
Age groups (years)		
15-	261	68.0
18- 20	123	32.0
Gender		
Male	195	50.8
Female	189	49.2
Grade		
10th	138	35.9
11th	146	38.0
12th	100	26.1

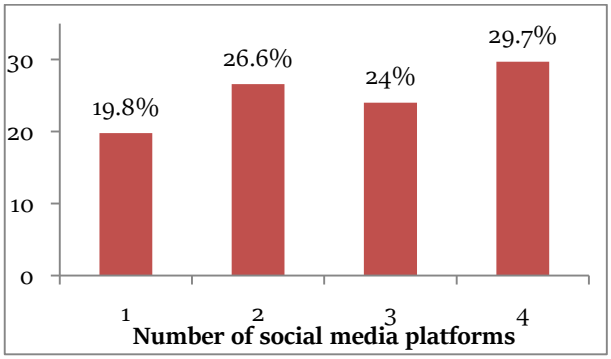

Figure 1: Prevalence of social media use by the number of platforms used among high school students (n=384)

consent to take part in the study was confirmed. Following a concise overview of the study's purpose, the authors individually administered questionnaires, ensuring that the students were briefed on the confidentiality of the gathered data.

The present research utilized a survey comprising two Parts:

Part one: Structured interviewing questionnaire which composed of two sections: The first section encompassed the sociodemographic data of the students, including age, gender, and school grade. The second part of the study focused on the history of social media usage, including the number of social media platforms utilized and social media usage at bedtime.

Part two: Bergen Social Media Addiction Scale (BSMAS). The Bergen Social Media Addiction Scale created by Andreassen and colleagues in 2017, as a designation instrument to assess an individual's addictive behavior concerning social media.[26] This scale consists of six items including: 1) salience, 2) tolerance, 3) mood modification, 4) relapse/loss of control, 5) withdrawal, and 6) conflict/functional impairment, that aim to recognize the challenges individuals encounter due to excessive social media use. It offers a concise and direct assessment of social media addiction, with respondents rating the six items on a 5-point Likert scale, ranging from 1 for "very rarely" to 5 for "very often." A higher score on the BSMAS suggests a higher vulnerability to social media addiction. The present research employed the BSMAS cut-off point of 24, which was chosen based on the established gold standards for diagnosis SMA. The scale's internal consistency reliability coefficient, assessed using Cronbach's alpha, is 0.801.

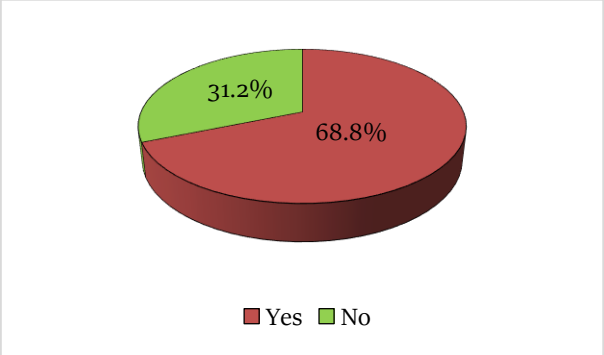

Figure 2: Prevalence of social media use at bedtime among high school students (n=384)

Two independent translators who are academic staff in the language department at the University of Duhok were responsible for translating the questionnaire into Kurdish, their native language. This was done to ensure that the nuances of the target language were accurately captured. Both translators were well-versed in the concepts the questionnaire aimed to measure, resulting in a translation that closely resembled the original instrument. Importantly, there were no discrepancies between the two translators regarding the translation of the original questionnaire.

Data analysis

The data collected was analyzed through the utilization of SPSS (version 23) for the application of descriptive statistical methods, such as frequency and percentage. The chi-square analysis was conducted to explore the association between high school students' socio-demographic characteristics and Social Media Addiction (SMA). Results with p-values below 0.05 were considered statistically significant for the examinations.

RESULTS

Table 1 illustrates that the majority 68% of students were in the age range of 15 to less than 18 years old. Additionally, male students outnumbered female students, making up 50.8% of the total student population. Furthermore, most students were enrolled in the 11th grade, comprising 38% of the total student body.

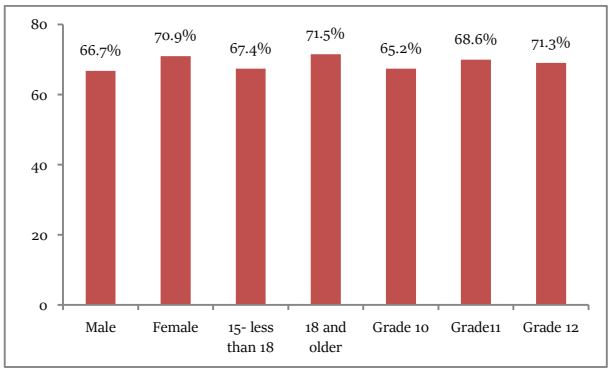

Figure 3: Prevalence of social media use at bedtime by gender, age, and grades groups among high school students (n=384)

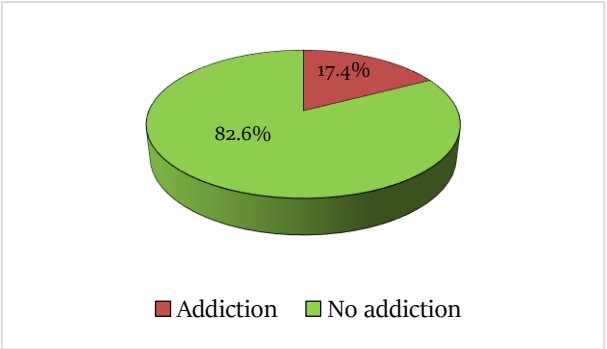

Figure 4: Prevalence of social media addiction among high school students (n=384)

The vast majority 78.2% of the students used several social media sites, with a majority of them using four platforms (29.7%). However, 19.8% of the students only used one social media platform, as shown in Figure 1.

The data presented in Figure 2 indicated that a significant proportion (68.8%) of the students reported admitted to using social media at bedtime. The utilization of social media (SM) at bedtime was prevalent across various demographic characteristics, including gender, age groups, and grades. The data indicated that a significant proportion of students from different backgrounds engaged with social media before going to sleep. Regarding gender, the data showed that many students of both genders used SM at bedtime (males 66.7%, females 70.9%). Also, concerning age groups, many of the students used SM at bedtime (67.4%, 71.5%). Moreover, most of the students in all grades showed that they are using SM at bedtime (65.2%, 68.6%, and 71.3%, respectively), as shown in Figure 3. The data presented in Figure 4 illustrates that 17.4% of high school students were identified as being addicted to social media.

Table 2 shows that students aged 18 and above were more susceptible to social media addiction, with a significant difference (p=0.004). Regarding gender, female students displayed a higher frequency of social media usage than male counterparts, although this difference was not statistically significant (p=0.78). Moreover, 11th-grade students used social media more than students in other grades, but this difference was not significant (p=0.14). However, using various platforms of social media was significantly correlated with increased susceptibility to social media addiction among students (p=0.007). Students who used multiple platforms were more addicted to social media compared to those using only one platform, particularly those who used 4 or more platforms were significantly more addicted. Lastly, using social media before bedtime was significantly correlated with social media addiction (p<0.001).

DISCUSSION

The current study is the initial attempt to assess the social media addiction among high school students in the Kurdistan Region of Iraq. Adolescents have increasingly gravitated towards social media platforms including Instagram, Facebook, Snapchat, TikTok, and WhatsApp as popular forms of recreational activity. This upsurge in social media usage among adolescents has prompted concerns regarding its potential negative impacts on their health and well-being, such as addictive behavior and disrupted sleep patterns.[27] Social media addiction, which is encompassed within the broader category of internet addiction, is prevalent in the population, particularly among young individuals. Evidence indicates that prolonged and excessive engagement with social networking sites (SNS) could cause symptoms typically linked to substance-related addictions.[28]

The current study was determined that 17.4% of high school students were identified as having an addiction on social media. The prevalence of SMA among high school students varies significantly across different countries, with India reporting the highest rate (57%),[29] while results from Turkey and Italy reported lower rates (10.3% and 11%) respectively.[30,31] These findings underscore the importance of addressing SMA in high school students, particularly in countries with high prevalence rates. It has been noted that adolescence is a period of heightened susceptibility to addiction, including PSMU.[32] Brand and colleagues (2019) introduced the Interaction of Person-Affect-Cognition-Execution (I-PACE) model, which offers a comprehensive framework for understanding the

Table 2. Association between socio-demographic characteristics and social media addiction among high school students (n=384)

	Addiction	No addiction	P-value
Age groups (years)			
15- < 18	38 (14.6%)	223 (85.4%)	0.004
18- 20	29 (23.6%)	94 (76.4%)	
Gender			
Male	29 (14.9%)	166 (85.1%)	0.78
Female	34 (18%)	155 (82%)	
Grade			
10th	15 (10.9%)	123 (89.1%)	0.14
11th	29 (19.9%)	117 (80.1%)	
12th	19 (19%)	81 (81%)	
Number of social media platforms			
One	9 (11.8%)	67 (88.2%)	0.007
Two	13 (14.1%)	79 (85.9%)	
Three	17 (16.7%)	85 (83.3%)	
Four	24 (21%)	90 (79%)	
Nighttime use			
Yes	56 (21.2%)	208 (78.8%)	<0.001
No	7 (5.8%)	113 (94.2%)	
Time of social media use			
1-2 years	11(18.6%)	48 (81.4%)	0.002
3-4 years	18(17.3%)	86 (82.7%)	
More than 4 years	48(21.7%)	173(78.3%)	

vulnerability to specific addictive behaviors by considering psychological and neurobiological factors. According to this model, imbalances in the inhibitory control and reward systems within the limbic region of the brain may significantly contribute to the initiation and perpetuation of addictive behaviors.[33]

The influence of social media platforms can have varying effects on society, encompassing both advantageous and detrimental outcomes. It offers access to a vast array of information and online services, as well as numerous benefits in terms of education and leisure. Nevertheless, the improper use of social media can disrupt different life aspects, including family, education, and even physical health, due to sedentary behavior and low self-esteem. In addition, the extensive social media usage and easy availability and accessibility to the internet are potential risks of social media addiction. Adolescents frequently view social media as secure environments where they can openly communicate their thoughts and feelings.[34]

The societal acceptance of adolescents is often measured by their online presence, as indicated by the number of “friends,” “likes,” and “views” they accumulate on social media platforms.[35] Nevertheless, the overuse of social media can negatively impact individuals' psychosocial well-being. This can manifest as diminished self-esteem, social isolation associated to social anxiety, and the adoption of new abnormal behaviors like Fear of Missing Out (FoMO) and Phubbing.[36, 37] Additionally, research has demonstrated a notable connection between feelings of anxiety and the amount of time spent on social media platforms, especially regarding the increase in the duration individuals spend on social media platforms, [38, 39] and the tendency to passively use these platforms.[40]

Addictive use of social media will resemble other substance abuse and may involve mood alteration (such as feeling better emotionally when using social media), salience (being preoccupied with social media behaviorally, cognitively, and emotionally), tolerance (requiring increasing amounts of social media over time), withdrawal symptoms (experiencing unpleasant physical and emotional effects when social media use is limited or stopped), conflict (experiencing interpersonal issues due to social media use), and relapse (quickly returning to

excessive social media use after a period of abstinence).[41]

Results regarding social media usage found that approximately two-thirds of internet users worldwide are between the ages of 15 and 24.[42] In the current study, the frequency of social media addiction among students aged 18-20 is significantly higher compared to their younger counterparts. A consistent finding was found in a previous study by Lukayská et al. indicating that older adolescents exhibit a significant positive relationship between restrictive mediation and PIU than younger adolescents.[43] These findings may be linked to the cultural perspectives that influence the level of control exerted on adolescents based on their age. Younger adolescents, typically under the age of 18, are subject to more parental control and supervision, which may limit their access to social media and online communication. In contrast, individuals aged 18 and older are often granted more freedom, allowing them to engage more extensively with social media and communicate with peers. This increased freedom is associated with the maturation process and cultural norms that shape the behaviors of individuals in this age group.

The study found that gender did not play a significant role in determining the rate of social media addiction. These results align with similar findings in previous studies, which also indicated that there was no significant correlation between SMA and gender.[44-47] It is crucial to note that some other research has identified gender as an influential factor in social media addiction.[48] This suggests that the effect of gender on social media usage may vary across different cultures, emphasizing the need for deeper cultural studies specific to each region. The current study also indicated that there was no statistically significant association between addiction to social media among high school students and their grade level. These results are consistent with the results reported by Afacan and Ozbek, 2019 and Ramazanoğlu, 2020.[49, 50]

The findings of this study indicate that the use of different social media platforms significantly influences the development of social media addiction among high school students. This indicates that constant exposure to different platforms and engagement with various social media platforms can lead to increased usage and social media addiction. This behavior can lead to increased time spent on social media, which in turn may escalate social media usage and contribute to addiction.

The scientific evidence suggesting that excessive use of SNS can result in symptoms commonly associated with substance-related addictions. When individuals create accounts on multiple platforms of social media to connect with family and friends, they tend to generate diverse content on each platform. The constant checking of various social media accounts and experiencing anxiety or irritability when unable to access them can become ingrained habits that are challenging to break, ultimately leading to a sense of compulsion or addiction to social media. Multiple research studies have emphasized the social dimensions linked to addiction to social media, such as the frequency of usage, fulfillment of psychological needs, and social comparison.[51] The utilizing of social media platforms is consistently increasing each year, accompanied by a growing number of users.[41] On the contrary, other results revealed that people who become addicted to a specific social media platform usually reduce their usage of other social media platforms.[52]

The study findings indicated that the majority of the students from different backgrounds engaged with social media before going to sleep, this behavior has emerged as a significant contributing factor associated with the development of social media addiction among high school students. Recently, the vast majority of high school students use social media, primarily on portable devices, and they can access social media at night. Screen-based devices are now essential in the society and are deeply embedded in the daily lives of many people. Young individuals, especially, use these devices regularly for activities like playing video games, watching movies and TV shows, and using social media platforms.[2] Social media platforms facilitate continuous online social interactions, even during nighttime, due to their easy accessibility through smartphone apps and their deliberate use of artificial intelligence algorithms to trigger the release of dopamine in the brain's reward pathway, Dopamine, referred to as the "reward neurotransmitter," is secreted in response to social media interactions such as receiving likes, texts, or messages, resulting in a gratifying feeling.[53] Social media platforms employ artificial intelligence algorithms to create a high level of comfort, seemingly always capturing the user's attention. As fleeting as they may be, people are constantly looking for new sources of excitement once the initial thrill diminishes, and this desire persists regardless of the time of day or night. [54] Previous research indicated that students with higher levels

of addiction tended to have increased evening screen time and highlighted the potential impact of social media addiction, indicating that addressing addictive social media use could be an intervention target to reduce evening screen time.[55] Additionally the previous study results indicated that the use of screens significantly impacts both the duration and quality of students' sleep, with nighttime screen usage having a more significant effect on sleep than overall daily screen time and has established a significant association between the use of social media and the sleep patterns of adolescents, particularly in terms of delayed onset of sleep.[56]

A study conducted on Norwegian students revealed that a notable 76% of participants used their mobile phones after going to bed; while only 5% claimed to never use screen-based devices in bed.[57] Cognitive-behavioral therapy (CBT) has been extensively researched and proven effective for addressing issues related to excessive social media use. The CBT approach involves three main components: modifying behavior, restructuring cognitive patterns, and implementing harm reduction strategies. Additionally, the utilization of an electronic monitoring device for limiting screen time and the importance of schools in regulating the amount of time children spend on screens both in and out of the classroom, as well as informing students and parents about these guidelines, have been suggested. The American Psychiatric Association (APA) has suggested various strategies to address and manage social media addiction. These strategies include monitoring the time spent on social media, disabling notifications, reducing the number of social media platforms used regularly, seeking support from a partner to stay motivated, allocating specific times for social media usage, designating specific times during the day to disconnect from social media, and taking occasional breaks from social media, such as abstaining for a day or longer.[58]

CONCLUSIONS

Social media addiction among a sample of Iraqi high school students is high compare with many other countries. The excessive utilization of social media platforms has been associated with a variety of health and social concerns among high school students. Age as a socio-demographic element has been determined to impact the vulnerability to social media addiction (SMA) in this particular demographic. It is notably linked to age, using multiple platforms of social media, and bedtime social media usage. These findings indicate the importance of monitoring the utilization of digital tools. Further studies are required to explore the impact of awareness program and corrective measures.

Ethical Approval

The current study has received approval from the scientific committee of the College of Nursing at Duhok University as well as agreement approval from the General Directorate of Education in Duhok City. Additionally, agreements have been established with all selected schools participating in the study, and informed consent has been obtained from all participants. For participants under the age of 18, parental consent has been acquired to ensure informed participation in the study. The confidentiality of the collected data has been maintained.

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Conflict of interest: All authors have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author's contributions: Conception: RYA, BMS and HQE. Performance of work: RYA. Data collection: HQE and HAS Interpretation or Analysis of Data: RYA and BMS Preparation of the Manuscript: RYA and HAS. Revision for Important Intellectual Content: RYA and BMS. All authors have read and approved the manuscript.

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List of abbreviations: Social Media Addiction (SMA), Problematic Internet Use (PIU), social networking sites (SNS), problematic social media use (PSMU), Person-Affect-Cognition-Execution (I-PACE), Fear of Missing Out (FoMO)

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