



RESEARCH ARTICLE

Section: *Digital Humanities***Social media addiction and its relationship to aggressive behavior among high school students in Riyadh**AlotayanTurki¹ * & Alhoushan Nawal¹¹Imam Mohammad Ibn Saud Islamic University (IMSIU) , Saudi Arabia*Correspondence: tmotayan@imamu.edu.sa**ABSTRACT**

Background/purpose: Addiction and violence are learnt reactions reinforced by environmental stimuli, making this relationship relevant to examine in Saudi female adolescents. This study examines the association between social media addiction and aggressive conduct in Riyadh's 16–17-year-old female high school students and if socioeconomic position affects addiction.

Materials/methods: A descriptive–correlational design was utilized for the research project, which included 170 female high school students in Riyadh, Saudi Arabia, who were between the ages of 16 and 17 and were recruited by a systematic random sample process. In this study, we utilized two validated instruments, namely the Social Media Addiction Scale and the Aggressive Behavior Scale. Both of these instruments shown a high level of reliability, with a coefficient of α equal to .892 and .817 respectively.

Results: Upon doing an examination of the data, it was discovered that the distribution of scores for both scales satisfied the standards of normalcy, A statistically significant positive association was observed between addiction to social media and aggressive conduct ($r = .281, p < .01$). This suggests that higher levels of addiction to social media are connected with increased aggression. The physical aspect of addiction to social media was found to have the most significant correlation with aggressive conduct ($r = .468, p < .01$). On the other hand, the psychological and social aspects of addiction did not exhibit any significant link with aggressive behavior. Furthermore, the research revealed that there were no significant differences in the levels of addiction to social media across different socioeconomic categories. This finding lends credence to the notion that excessive usage of social media is a condition that is prevalent across a variety of social strata.

Conclusion: The study concludes that social media addiction is a significant predictor of aggressive behavior among female adolescents, emphasizing that excessive digital engagement reinforces learned patterns of aggression. These findings highlight the need for preventive educational programs promoting balanced and responsible social media use.

KEYWORDS: social media, aggressive behavior, high school students

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1. Introduction

In the digital age we live in today, social media has become one of the most prominent means through which individuals and communities interact. It provides opportunities for instant communication and widespread sharing, with the majority of its users being teenagers. It has become an integral part of their daily lives, as they spend long hours each day interacting with it, immersing themselves, and enjoying what these various platforms offer. Excessive use has even reached the point of addiction, as (Ismail, 2007) pointed out. Hardey (2002) noted that one in every 200 social media users show signs of addiction, and these platforms have the ability to attract their users, such as Facebook, Instagram, YouTube, TikTok, and X platform. These critics believe that social media has intruded into family life, reducing opportunities for interaction and communication within the family, and has negative effects on the youth (Amirthalingam & Khera, 2024). High school girls live through a sensitive stage characterized by psychological fluctuations and social changes, which makes them more vulnerable to the effects of the digital environment surrounding them, as both (Laghbi & Ali., 2017) and (Hassina et al., 2023) indicated the relationship between aggressive behavior and the use of social networking sites.

Nomar (2012) indicated that social media sites negatively affect face-to-face personal communication, and frequent use of social media sites leads to organic problems such as eye strain, neck and back pain, sleep disorders, weight gain, and lack of physical activity, in addition to behavioral effects, including increased aggressive behavior in its various forms, verbal, physical, and indirect aggression. Mahriz (2015) indicated that social media addiction leads to various behavioral disorders. The report on social media usage in the Kingdom of Saudi Arabia (2024) indicated that 94.3% of Saudis use social media daily, averaging three hours and six minutes. Meanwhile, Al-Ghoul (2007) A recent study conducted in the Kingdom of Saudi Arabia highlighted the prevalence of violent behaviors among high school students. The findings revealed that approximately one-third of students (33%) reported experiencing physical violence within the school during one academic year, while 26% had been subjected to some form of bullying in the 30 days prior to the survey. The study also found a significant association between school violence and both mental health issues and poor academic performance. These results suggest that school violence is a growing concern that poses a serious threat to students' well-being and development (AlBuhairan et al., 2017)

While the final aspect of the research problem lies in the scarcity of studies addressing the use of social media and its relationship with aggressive behavior, the research problem is summarized by studying social media addiction and its relationship with aggressive behavior among high school female students in the Kingdom of Saudi Arabia, This research aims to study the relationship between social media addiction and aggressive behavior among high school female students in Riyadh, by analyzing the factors influencing this relationship and exploring the extent of this phenomenon. The research relies on collecting data from a sample of students and analyzing it to understand the psychological and social dimensions linking excessive use of social media to the emergence of aggressive behaviors, with the goal of providing recommendations that contribute to raising community awareness and mitigating the negative effects of this phenomenon. The current research problem appears in several aspects; the first aspect is the researcher's direct observation of adolescents in general and high school female students in particular regarding the excessive and repeated use of social media platforms such as Facebook, Instagram, Twitter, TikTok, and other applications. This usage occurs at home, school, street, and on public transportation, to the point of addiction and an inability to refrain from browsing, liking, posting, and commenting with or without a purpose.

Hypotheses:

H₁: There is a relationship between social media addiction and aggressive behavior among high school girls in Riyadh

H₂: There is differences in social media addiction among high school girls in Riyadh attributed to economic and social status

Theoretical Framework

The Addiction to Social Media

Social media platforms are among the most prominent tools of new media, consisting of a network of electronic networks that allow users to create personal pages and connect them to an electronic social system with other

individuals who share the same interests and hobbies (Tanaboo et al., 2017) The National Center for Statistics and Information (2019) defines social media as “an electronic platform - which can be a website, application, or online service that allows people to build networks or social relationships with others and share content such as photos, videos, links, and opinions with them. These are platforms established to bring together people with a common link and a goal they wish to achieve. Some of these platforms are specialized, while others are multidisciplinary and allow everyone to participate and create personal pages within them. Thus, they are an effective and rapid means of communication (Muti & Hussein, 2015) It is a state of excessive and uncontrolled use of social media platforms, such as Facebook, Twitter, Instagram, TikTok, and others, Symptoms of social media addiction include: Continuous checking of notifications and messages, Feeling stressed or anxious when unable to access the network, Neglecting daily activities or social relationships due to excessive time spent on platforms, Mood swings or feelings of isolation if there is no interaction on the posts, This type of addiction is considered an increasing problem in the digital age, and it may be associated with negative effects on mental health, such as depression and anxiety, in addition to decreased productivity.(Regier et al., 2013; Sturmey & Dalfern, 2014)

Allah and Al-Awad (2022) mentioned that social media networks can be divided into several types based on their objectives and main functions as follows, Public social media networks, Professional networking platforms, Multimedia sharing networks, Blogging and text content networks, Examples: WhatsApp, Telegram, Facebook Messenger, These networks focus on direct messaging between individuals or groups, whether through texts, voice calls, or video calls, Social gaming networks: Examples: Twitch, Discord, These networks bring players together and provide them with spaces to interact while playing or discussing video games, in addition to live game streaming and communication within gaming communities, Private interest networks, These networks focus on specific interests such as arts, design, books, and other hobbies, allowing users to share ideas and content related to those fields, Each of these types meets the needs of different user groups and provides various ways to interact and engage in diverse fields.

Features of Social Media

Social media networks possess a number of characteristics that make them unique and contribute to their widespread use and popularity (Talal & Fawaz, 2022) **Interactivity:** Social media networks are interactive platforms that allow users to participate instantly in conversations, engage with content through likes, comments, and shares, thereby enhancing real-time communication between individuals. **Ease of use:** These networks feature a simple and flexible user interface, making it easy for users to create personal accounts, upload photos and videos, and join groups or communities with shared interests. **Wide accessibility:** Social media networks allow communication with others anywhere around the world. It transcends geographical boundaries, helping to enhance interaction between different cultures and languages. **Media pluralism:** These networks allow the publication and exchange of various types of media, such as texts, images, videos, links, and articles. This enhances content diversity and makes communication more vibrant and varied. **Personalization:** Users can customize their personal pages according to their preferences, whether in terms of photos, personal information, or the content they share. **Instant updates:** Social media networks allow for the instantaneous dissemination of information and news, keeping users constantly informed about everything new in the world or within their personal social circles(Fenton, 2012; Hansen et al., 2010; Oyighan & Okwu, 2024)

These characteristics make social media networks powerful tools for communication and interaction between individuals and communities, and they contribute to shaping social and political behavior in today's world.

Interpretation of the Behavioral Theory of Aggressive Behavior

This perspective has its theoretical roots in the work of Ivan Pavlov and other behavioral theorists who stressed that the majority of human activities are learnt responses to environmental stimuli. These thinkers are responsible for the development of this perspective. According to this point of view, human beings are born neutral, meaning that they are neither good nor bad. As a result of their interactions with their surroundings, individuals develop behavioral patterns that are influenced by reinforcement and experience (Bashir, 2009) Within the context of this concept, violent or delinquent behavior is regarded to be a learnt response that is

reinforced by the environment. More than ninety percent of American programs include at least one act of aggression, indicating a strong presence of violent models that may influence viewers (Martins & Wilson, 2012) (Glascok, 2008). This notion is supported by research that has been conducted on the media, which has shown that aggression is prevalent across a variety of forms of entertainment. A significant amount of study has been conducted to investigate the connection between employing social media platforms and engaging in hostile behavior. According to Laghbi and Ali. (2017) for example, there is a positive association between the negative impacts of social media use and aggression among high school students in Saudi Arabia. This finding brings to light issues such as decreased family engagement, moral deterioration, and exposure to hate and violence. In a similar vein, Wakli (2019) found that addiction to social media among adolescents leads to many expressions of aggressiveness, including hostility, anger, verbal aggression, and physical aggression. This suggests that excessive participation online can impair emotional regulation. A large-scale Russian study conducted by Sobkin and Fedotova (2021) found that aggression on social media is prevalent among adolescents, with differences based on gender and social status. According to the findings of the study, socially “isolated” youth have a tendency to express aggression as a means of compensating for real-life frustrations, whereas “leaders” use social media through more constructive means. Saeed (2020) presented more evidence, which demonstrated that both social networking and violent video games significantly lead to aggressive behaviors among college students, with the bad effects outweighing the good ones. Saeed’s findings were presented in the context of the university student population. (Moro et al., 2022) came to the same conclusion, stating that abusive use of the internet and social media is associated with antisocial and violent behaviors in teenagers from the Basque Country, independent of the gender of the adolescents. Jamal (2023) made the observation that the extensive usage of social media platforms by Egyptian adolescents, such as Facebook, Instagram, and YouTube, is associated with behavioral disorders such as lying, violence, substance abuse, and dangerous interactions. In conclusion, Hassina et al. (2023) discovered that there is a substantial connection between addiction to electronic devices and violent conduct among postgraduate students, despite the fact that the overall levels of addiction were relatively low. In conclusion, research consistently reveals that excessive, unregulated, or addicted use of social media tends to support violent behavior, emotional dysregulation, and social maladjustment. This assertion holds true across a variety of cultural and age situations. The findings of this study highlight the critical need for preventative educational and counseling programs that are focused at encouraging good digital habits, media literacy, and psychological resilience among young adults and adolescents.

Methodology

Ethical Considerations

The Institutional Review Board (IRB) of Imam Mohammad Ibn Saud Islamic University and the administrations of the participating schools approved the study protocol in accordance with the Declaration of Helsinki (2013 revision). All participants were informed that their participation was voluntary, confidential, and used solely for research purposes. Written informed consent was obtained from all participants prior to data collection. The survey was administered in a private and secure environment, and any student showing signs of emotional distress was promptly referred to the school counselor for appropriate psychological support.

Study Design

The researchers use the correlational descriptive method to understand the relationship between social media addiction and aggressive behavior among high school female students.

Participants

The study population comprised female teenagers aged 16–17 years attending public high schools in Riyadh, Saudi Arabia. A rigorous random sampling technique was employed to guarantee equitable representation of students from diverse geographic and socioeconomic backgrounds. The first sample had 200 students, however after removing 30 incomplete or incorrect responses, the final sample that was evaluated had 170 students. Participation was voluntary and contingent upon well stated inclusion and exclusion criteria. Eligible participants were female teenagers aged 16 to 17 years who regularly utilized social media sites and provided written informed consent. Students diagnosed with a psychological or behavioral condition or those who

submitted incomplete questionnaires were eliminated from the final analysis. Data were gathered during standard school hours in partnership with school administrations and counselors. The Social Media Addiction Scale and the Aggressive Behavior Scale were given in quiet classrooms with the researcher watching over them. Before answering, each participant was told what the study was about, how it would be done ethically, and how to do it. The surveys were filled out by the participants themselves, took about 15 to 20 minutes to finish, and were collected right away to make sure the data was correct. During the entire procedure, confidentiality and the well-being of participants were paramount, and any student displaying emotional discomfort was directed to the school counselor for suitable assistance.

Measurement

The study tools consist of two Instruments, which are:

The Scale of Social Media Addiction

After reviewing the scales available in the field, the researchers did not reach a modern scale for social media addiction among adolescent girls that is standardized in the Saudi environment, as the Prince Scale (2024) was reviewed, which was prepared for social media addiction among mothers of kindergarten children, and the scale and Hassina et al. (2023) for the use of social media among adolescents in the Egyptian environment, and Ahmed (2025) for social media addiction among university students. Therefore, a scale consisting of three dimensions was prepared according to the definition of social media addiction, so that the first dimension, the psychological aspect, consists of 10 items, while the second dimension, the social aspect, consists of 8 items, while the third dimension, the physical aspect, consists of 6 items, meaning that the scale in its initial form consists of 24 items, and in front of each item there are four alternatives for the answer, which are (rarely, sometimes, often, always), so that rarely gets one score, sometimes gets two scores, often gets three scores, while always gets four scores.

Psychometric Properties of the Scale

Calculating the Internal Consistency of the Scale

Internal consistency was conducted as the first step in the scale construction process to ensure the extent of the components' interrelation, by examining the correlation of each item with the total score of the scale, in addition to the correlation of each item with the dimension it belongs to, as well as the correlation of each dimension's score with the total score of the scale. Upon revealing the correlation of each item with the total score of the social media addiction scale, no item was deleted as shown in the table.

Table 1: The correlation coefficient of each item with the total score of the social media addiction scale.

Item	correlation coefficient	Item	correlation coefficient	Item	correlation coefficient
1	.611**	11	.509**	21	.580**
2	.576**	12	.576**	22	.569**
3	.665**	13	.467**	23	.668**
4	.695**	14	.397**	24	.671**
5	.481**	15	.590**		
6	.493**	16	.417**		
7	.556**	17	.484**		
8	.452**	18	.492**		
9	.574**	19	.580**		
10	.617**	20	.509**		

** sig (01,0)

It is clear from **Table 1** that the correlation coefficients between each item of the scale and the total score of the scale were significant at the level of significance. (01,0).the correlation study demonstrates that all dimensions of the social media addiction scale—psychological, social, and physical—are substantially and positively linked with the total score, with correlation values from.809 to.836, all significant at 0.01. The scale's parts appear consistent and homogeneous. All item-dimension correlation coefficients were statistically significant at the 0.01

level, proving that each item matches the construct it assesses, all pieces were maintained for scale coherence. Overall, the scale's Cronbach's alpha score was .892, showing strong reliability ($\alpha > 0.70$) in line with norms. All items contribute to reliability, as item-deletion statistics indicated that removing any item had a lower alpha value than the scale, The psychological, social, and physical subscales had .778, .797, and .805 reliability coefficients, whereas the overall scale was .833. Internal consistency and reliability across all aspects make the social media addiction scale valid and dependable.

The Aggressive Behavior Scale

After reviewing the available measures of aggressive behavior, as in Sadouki (2021) on the Algerian environment and Al-Saleh (2012) study in Palestine, a measure of aggressive behavior was developed. The measure consists of three dimensions, each with 6 items: the first dimension is physical aggression, the second is verbal aggression, and the third is indirect aggression. Thus, the measure in its initial form consists of 18 items, with four response alternatives for each item: (rarely, sometimes, often, always). A response of "rarely" scores one point, "sometimes" scores two points, "often" scores three points, and "always" scores four points.

Psychometric Properties of the Scale:

Calculating the Internal Consistency of the Scale:

Internal consistency was conducted as the first step in the scale construction process to ensure the extent of the components' interrelation, by correlating each item with the total score of the scale, in addition to correlating each item with the dimension it belongs to, as well as the correlation of each dimension's score with the total score of the scale. When examining the correlation of each item with the total score of the Aggressive Behavior Scale, no item was deleted as shown in the table.

Table 2: The correlation coefficient of each item with the total score of the aggression behavior scale

Item	correlation coefficient	Item	correlation coefficient	Item	correlation coefficient
1	.727**	7	.536**	13	.677**
2	.563**	8	.446**	14	.556**
3	.663**	9	.351**	15	.616**
4	.522**	10	.255*	16	.519**
5	.537**	11	.310*	17	.508**
6	.377**	12	.343**	18	.460**

** sig (01,0)

Except for items (10,11), which were significant at 0.05, all Aggressive Behavior Scale items significantly affected the total score at 0.01. It appears the things match the scale's construct. Physical aggression, verbal aggression, and indirect aggression correlate highly with the total score, ranging from .710 -.777, demonstrating their internal homogeneity and interrelatedness, Internal consistency investigation showed that all item-dimension correlation coefficients were significant at the 0.01 level, confirming that no item required to be deleted, This consistency indicates the scale and items' conceptual coherence in measuring violence.

Cronbach's alpha coefficient of .817 is within the high dependability category ($\alpha \geq 0.70$). All alpha values were lower than the overall dependability coefficient after item deletion, indicating scale stability from all items, Physical, verbal, and indirect aggression subscale reliability alpha coefficients were .763, .785, and .744, while scale reliability was .797. These findings indicate that the Aggressive Behavior Scale is internally consistent and trustworthy across its dimensions, making it suited for the main research population.

Statistical Analysis

Descriptive statistics, including means and standard deviations, were used to Pearson correlation coefficient Test T, One-way ANOVA test, The arithmetic mean and the standard deviation, Cronbach's alpha coefficient, Percentages and frequencies

Results

Verifying the Assumptions of Parametric Statistical Analysis

Before deciding on the appropriate statistical method to verify the validity of the research hypotheses, the researchers attempted to implement a number of statistical procedures to ensure that the data meet the assumptions of parametric statistical analysis for selecting the optimal method for data analysis, through three methods for each scale as follows:

Social Media Addiction Scale

Calculating dispersion measures (skewness coefficient and degree of curvature) as a statistical guide for the social media addiction scale scores.

Table 3: Descriptive statistics for the social media addiction scale

Statistics	overall scale	Psychological	social	Physical
Twisting	.262	.400	.390	.301
Standard error	.186	.186	.186	.186
The curvature	.415	.072	.359	.447
Standard error	.370	.370	.370	.370
Average	55.87	23.66	18.45	13.74

It is evident from Table 4 that all skewness and kurtosis values are confined between (0.5, -0.5), indicating the data's normality,

Social Media Addiction Scale:

Calculating the coefficient of skewness and curvature as a statistical indicator for the scores of the aggressive behavior scale. It was found that the value of the coefficient of skewness and flatness is as follows

Table 5: Descriptive statistics for the Aggressive Behavior Scale

Statistics	overall scale	Psychological	social	Physical
Twisting	-.769-	-.659-	-.391-	-.709-
Standard error	.186	.186	.186	.186
The curvature	.563	-.314-	-.111-	.072
Standard error	.370	.370	.370	.370
Average	41.34	13.00	14.24	14.08

It is clear from Table 5 that all values of skewness and curvature are between (0.5, -0.5), which indicates the normality of the data

The relationship between social media addiction and aggressive behavior among high school female students in Riyadh.”

To verify the hypothesis, the Pearson correlation coefficient was calculated to determine the relationship between social media addiction and aggressive behavior, as shown in the following table.

Table 7: The correlation coefficient between social media addiction and its dimensions and the total score for aggressive behavior (N= 170)

The overall score for aggressive behavior		
Social media addiction	Correlation coefficient	Significance level
Overall score	.281**	0.001
Psychological	.067	.382
Social	.081	.294
Physical	.468**	** 0.01

** sig. (01,0)

Table 7 shows a statistically significant relationship at the 0.01 level between the total score of aggressive behavior and both the total score of social media addiction and the physical dimension, while the relationship between the total score of aggressive behavior and both the psychological dimension and the social dimension was not significant.

Table 8 The correlation coefficient between aggressive behavior in its dimensions and the overall degree of addiction to websites. Social media (n= 170)

The overall degree of addiction to social media.		
Social media addiction	Correlation coefficient	Significance level
Overall score	.281**	0.001
Physical	.148	.054
Verbal	.287**	0.001
In direct	.276**	0.001

Table 8 shows a statistically significant relationship at the 0.01 level between the overall score of social media addiction and both the overall score of aggressive behavior and the dimension of verbal aggression and the dimension of indirect aggression, while the relationship between the overall score of social media addiction and the dimension of physical aggression was not significant.

Differences in Social Media Addiction Among High School Female Students in Riyadh Attributed to Economic and Social Status

To verify this, the researcher used the independent samples t-test, where three levels of socioeconomic status were established for the students to respond to through the scale, and the levels are (low, medium, high). The following table shows the results of the independent samples t-test for the socioeconomic level using the social media addiction scale.

Table 9: The statistical description of the social media addiction scale

Social media addiction	Low (n = 59)		Medium (n = 85)		High (n = 26)	
	Mean	Standard Dev	Mean	Standard Dev	Mean	Standard Dev
Overall score	55.61	.87	55.90	.83	56.11	1.12
The psychological aspect	23.81	.48	23.62	.44	23.46	.64
The social aspect	18.35	.47	18.51	.41	18.50	.60
The physical aspect	13.59	.44	13.72	.31	14.15	.50

Table 10: Results of the one-way ANOVA for social media addiction and its dimensions

Social media addiction	Source of variance	Sum of squares	Degrees of freedom	Mean square	F	Significance level
Total score	Between the groups	5.45	2	2.72	.05	.94
	Within the groups	8457.9	167	50.64		
	Total	8463.38	169			
The psychological aspect	Between the groups	2.52	2	1.26	.08	.91
	Within the groups	2455.36	167	14.70		
	Total	2457.88	169			

The social aspect	Between the groups	.96	2	.481	.03	.96
	Within the groups	2209.24	167	13.22		
	Total	2210.21	169			
The physical aspect	Between the groups	5.72	2	2.86	.31	.73
	Within the groups	1528.39	167	9.15		
	Total	1534.12	169			

The previous table shows that the differences in the overall degree of social media addiction and its dimensions according to the variable of social and economic level did not reach the level of significance despite the existence of differences.

Discussion

The Relationship Between Social Media Addiction and Aggressive Behavior

The findings demonstrated a significant positive correlation between social media addiction and aggressive behavior among female high school students ($r = .281, p < .01^*$). This suggests that as social media addiction increases, aggressive behavior also rises. Such a relationship aligns with the behavioral learning theory, which explains that repeated exposure to reinforcing stimuli—such as likes, comments, and digital validation—conditions individuals to respond aggressively in emotionally charged or competitive online settings.

This result is consistent with (Laghbi & Ali., 2017), who found a positive relationship between negative social media use and aggressive behavior among secondary school students in Saudi Arabia, and (Wakli, 2019), who confirmed that internet addiction triggers multiple forms of aggression (physical, verbal, and indirect) among adolescents. Similarly, Hansen et al. (2010) reported a significant correlation between electronic addiction and aggressive tendencies among university students, and Jamal (2023) found that excessive social media engagement contributes to behavioral disorders, including violence, lying, and substance abuse. However, the present findings partly diverge from Moro et al. (2022), who suggested that the relationship between social media use and violent behavior depends on the quality and purpose of digital interaction rather than its intensity. This indicates that not all social media usage leads to aggression, but rather specific content types—such as exposure to online hostility, provocation, or cyberbullying—are the primary triggers. The current findings therefore reinforce the principle of observational learning proposed by Bandura and Walters (1977) which posits that individuals imitate behaviors rewarded or normalized within their social environment—an effect amplified in digital spaces.

The relationship between social media addiction and aggressive behavior among high school students can be explained by the fact that social media platforms may be full of content that contains forms of violence or aggressive behavior, whether in comments, posts, or even videos. Students' constant exposure to this type of content may affect their behavior and increase the likelihood of them adopting aggressive behavior. In addition, social media sites greatly encourage social comparison, where individuals compare themselves to others through the images and content that others publish. This comparison may lead to feelings of jealousy, frustration, or even anger, which may turn into aggressive behavior in their school or social environment. In the same context, cyber bullying is a common problem on social media platforms, and students who are exposed to cyber bullying may react aggressively in response to these attacks, whether by responding aggressively online or by displaying aggressive behavior in real life, And addiction to social media may distance students from real social interactions with their friends and families, leading to feelings of isolation or emotional deprivation. This lack of real social interaction may generate feelings of frustration or anxiety, which could drive them to act aggressively. Additionally, excessive use of social media can reduce the ability to self-regulate and control emotions, as students may become accustomed to displaying immediate reactions on social platforms, whether in the form of comments or quick responses. This pattern can transfer to real life, where it becomes difficult to control emotions and aggressive behaviors and the study by Hamdi (2015) which indicated a relationship between the use of social media sites and aggressive behavior in both verbal and physical dimensions, and the

study by Hakima (2011) which indicated a correlational relationship between internet addiction and aggressive behavior among high school students.

The Stronger Link Between the Physical Dimension of Addiction and Aggressive Behavior

The second finding revealed that the physical symptoms of social media addiction (e.g., fatigue, headaches, sleep disturbance, and physical discomfort) had the strongest correlation with aggressive behavior ($r = .468$, $p < .01^*$). This suggests that physiological strain and body stress resulting from excessive screen time weaken emotional regulation, increasing irritability and impulsive responses. This result aligns with Nomar (2012) who found that prolonged digital exposure leads to psychosomatic problems that impair emotional control and increase aggression. Likewise, Mahriz (2015) demonstrated that excessive engagement with electronic media elevates neural arousal and weakens impulse regulation, predisposing individuals to aggression.

This can be explained by the spread of technology among all social classes in the current era, as access to the Internet and smart devices has become widely available among different economic and social classes, even in families with limited income. Smartphones and the Internet may be available thanks to the decline in technology prices and communication services, which makes the intensive use of social media a phenomenon that is not related to the economic level in itself. In addition, social media platforms are considered a means of communication and interaction between individuals regardless of their economic and social backgrounds. Young people and adolescents use these platforms for entertainment, communication with friends, and to feel belonging to certain groups. This psychological and social need is shared by all female students regardless of their social and economic level, which explains the similarity in addiction levels.

Social media platforms are designed to be attractive and enticing to all users, specifically targeting the teenage age group by offering content that aligns with their interests. For this reason, the way female students use these platforms, whether in terms of duration or the purposes for which they are used, may be very similar across different groups, reducing the likelihood of differences in addiction levels based on economic and social status.

Therefore, it can be said that the lack of differences in social media addiction among high school female students due to changes in economic and social levels is because these platforms have become equally available and influential across all groups, with similar motivations and usage methods.

No Significant Differences in Social Media Addiction by Socioeconomic Status

The third result showed no statistically significant differences in social media addiction levels across socioeconomic groups. This implies that social media addiction is a cross-socioeconomic phenomenon, driven more by psychological and cultural factors than by material access or privilege.

This result is consistent with (Moro et al., 2022), who found no significant differences in internet addiction across gender or socioeconomic strata, and with (Hansen et al., 2010) who observed similar addiction levels across social groups. Both studies suggest that universal smartphone accessibility and widespread internet penetration have minimized the traditional social divides that once determined digital engagement.

However, this finding partially differs from (Jamal, 2023), who noted small differences in social media behavior based on school type (public vs. private), implying that institutional context and peer culture might moderate usage intensity. Overall, the absence of socioeconomic differences in the present study underscores that the psychological mechanisms underlying social media addiction are universal, reflecting the pervasive influence of technology in shaping youth behavior regardless of social background.

Limitations and strengths

The scope of this investigation is limited by objective, spatial, and temporal parameters. Objectively, the study examines social media addiction and aggressive conduct in 16–17-year-old female high school students, limiting its applicability. Students in Riyadh, Saudi Arabia, were studied because cultural, social, and educational factors may affect behavior and online involvement. Data was collected temporarily throughout the 2024–2025 academic year, reflecting digital and societal situations. These boundaries assure methodological precision and contextual depth but may limit population or period applicability.

Despite these limitations, the study had numerous strengths. It sheds light on a pressing societal issue

in a specific adolescent demographic, advancing behavioral and media psychology. Validated measurement instruments and rigorous statistical analysis improve dependability and internal consistency. Focusing on a Middle Eastern female adolescent sample adds cross-cultural relevance to the worldwide knowledge of social media addiction and aggressiveness, laying the groundwork for future comparative and longitudinal research.

Conclusion

In the current research, we attempted to encompass both the concept of social media addiction and aggressive behavior among high school female students. An introduction, problem statement, significance, and research questions were formulated, along with theoretical and practical importance. The research concluded that there is a relationship between social media addiction and aggressive behavior among high school female students. Additionally, there were no differences in the students' social media addiction attributed to their economic and social levels (low, medium, high). In light of these results, a set of recommendations can be presented.

Suggestions

Based on this study's findings and limitations, various strategies are suggested to enhance future research and inform educational and preventive actions. **First**, future studies should compare social media addiction and aggressive behavior across genders, particularly male teenagers, to see if similar behavioral patterns and psychological causes are found. Comparative analysis would improve generalizability and help explain gender-based online behavior variations. **Second**, clinical and longitudinal studies should investigate the psychological, cognitive, and neurobiological causes of social media addiction and aggression, this research would improve theory and reveal causal pathways rather than correlations. **Third**, the findings suggest prevention and education initiatives for female students, instructors, and parents, including awareness and guiding programs. Responsible and balanced social media use, digital literacy, and the psychosocial hazards of excessive online interaction should be the goals of such programs.

These recommendations emphasize the importance of integrating scientific inquiry with social responsibility to advance academic knowledge and improve adolescents' psychological well-being and social adjustment in a digital world.

Declarations

Author Contributions. (For example; A.B.: Literature review, conceptualization. C.D.: methodology, data analysis. E.F.: review-editing and writing, original manuscript preparation. All authors have read and approved the published on the final version of the article)

Conflicts of Interest. The authors declare no competing interests.

Ethical Approval. Ethical approval for this study was obtained in accordance with the principles of the Declaration of Helsinki, following the approval of the Scientific Research Ethics Committee at Imam University. All procedures adhered strictly to the ethical standards of scientific research, ensuring the voluntary participation, confidentiality, and anonymity of respondents, as well as the responsible handling and reporting of data throughout all stages of the study.

Data Availability Statement. (Please provide a statement about where data supporting the results reported in this study)

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