

INTERNET ADDICTION AND THE TENDENCY TOWARD AGGRESSION AMONG ADOLESCENTS IN THE CITY OF TETOVO

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Abstract

The use of the internet is an inseparable part of life, especially for young people and adolescents. Despite the positive effects that the internet has brought to the contemporary world, excessive use also has negative consequences, particularly during adolescence. In this regard, our study aims to predict the tendency for aggression among adolescents based on internet addiction.

A total of 190 adolescents from two high schools in the city of Tetovo participated in the study, specifically from the Medical High School "Nikola Shtejn" and the Gymnasium "Kiril Pejčinović." The average age of the students is 16.6 years.

The results show that, compared to girls, boys exhibit a higher level of internet addiction and that there are no gender differences regarding the tendency for aggression. Linear regression confirmed that internet addiction predicts the tendency for aggression among adolescents.

Keywords: adolescent, addiction, internet, tendency for aggression.

1. Introduction

The use of the internet is a facilitating factor in modern life as it enables information exchange, academic research, entertainment, communication, trade, and business (Shaheen et al., 2019). However, its negative effects can be observed when individuals are unable to control their internet use, leading to psychological dependency issues (Curran, Smyth & Kelvey, 2018).

Internet Addiction Disorder (IAD) is a term first introduced by Ivan Goldberg in 1995, describing addiction as excessive technology use, often without the individual's intention, accompanied by difficulties in controlling the impulse to use it (Saliceti, 2015). In various studies, internet addiction is described using different terminologies, such as Internet Addiction Disorder, Internet addiction (Wang et al., 2024), problematic use of social media (Osmani Ballazhi et al., 2024), and compulsive internet use (Shaheen et al., 2019). Young et al. (2000) proposed five types of internet addiction (according to Goswami & Singh, 2016), including: Cybersexual Addiction: Characterized by the use of pornographic materials and participation in adult chat rooms. Cyber-Relationship Addiction: Manifested through the formation of online relationships, which can sometimes lead to relationship issues or marital infidelity. Social Network Addiction: Overuse of social networking platforms. Information Overload: Exhibited through compulsive information seeking and data organization, leading to reduced work productivity. Computer Addiction: Including addiction to various computer games.

Adolescence is a sensitive and potentially risky period for developing addictions due to the changes and challenges adolescents face as part of their growth (Harvard Health Publishing, 2018). Studies report a prevalence of problematic social media use among adolescents ranging from 3.22% to 14.17% across different countries, as one of the forms of internet addiction (Boer et al., 2020). Regarding adolescents from North Macedonia, research indicates that 13.7% of adolescents report problematic use of social media (Osmani Ballazhi et al., 2024). Internet addiction is present among both genders. Wichstrøm (2019) reports a higher prevalence of

internet addiction among boys, while other studies indicate a higher prevalence among girls (Chae et al., 2018).

Research highlights the impact of internet usage on the well-being of adolescents in all life domains. The negative effects of prolonged internet use on adolescents' physical health have been established by previous studies. According to Shaheen et al. (2019), the consequences include back pain, neck pain, joint and shoulder pain, headaches, and low levels of physical activity. Adolescence is characterized by the adolescent's tendency to become independent from parents and explore opportunities that aid their growth (Osmani Ballazhi, 2015). In this context, the social impact of internet addiction is most evident in relationships with the family. Adolescents who spend a lot of time online tend to have weaker relationships with their friends and family (Liang et al., 2016), experience frequent conflicts with parents and friends (Diotaiuti et al., 2022), and exhibit increased feelings of loneliness (Boz & Aksoy, 2011). Studies also indicate that adolescents who spend more time on the internet face difficulties managing activities, resulting in lower school performance (Diotaiuti et al., 2022; Kuss et al., 2013). Excessive internet use also has psychological consequences. Previous studies have found a link between internet use and social anxiety (Neziri & Hasani, 2024), mental health issues (Kuss et al., 2013), depression (Bozzola et al., 2022), internalizing problems (Bexheti et al., 2024), and aggressive behavior (Wang et al., 2024).

In social psychology, aggression is most commonly defined as behavior intended to harm another person who is motivated to avoid that harm (Bushman & Huesmann, 2010). The most common form of aggressive behavior reported is physical aggression, which includes actions intended to physically harm others, such as hitting, biting, or kicking. Verbal aggression involves actions meant to hurt others through words, such as yelling or name-calling (Warburton & Anderson, 2015). There is variability in the expression of aggression during adolescence. In some countries, alarming data have emerged, such as in India, where every second adolescent is involved in aggressive behavior (Sidhu et al., 2019). Studies report that males exhibit slightly higher levels of aggression than females (Grover & Soni, 2024). However, authors note that while males are more prone to physical aggression, females tend to express aggression in indirect (Björkqvist, 2018) or hostile forms (Sidhu et al., 2019). Aggressive behavior has been linked to depressive symptoms (Quan et al., 2024), perceived stress, low self-esteem, low life satisfaction, and low empathy (Lopez, Jimenez & Moreno, 2018), as well as high levels of loneliness (Grover & Soni, 2024). In the academic sphere, aggressive behavior is associated with lower academic performance (Vuoksima et al., 2021), fewer friends in class, and lower teacher support at school (Lopez, Jimenez & Moreno, 2018). Within the family, aggressive behavior has been found to correlate with family conflicts and low levels of open communication (Lopez, Jimenez & Moreno, 2018).

Internet addiction has been found to correlate with aggression (Wang et al., 2024), and self-control has been identified as a mediator between internet addiction and aggressive behavior (Agbaria, 2021). Wang et al. (2024) emphasize that individuals with a higher profile of internet addiction also exhibit higher levels of aggression compared to those with a low profile of internet addiction. In this context, our study aims to predict aggressive behavior based on internet addiction.

Methods

Sample

The sample is purposeful and consists of 190 adolescents from the first to the fourth year of high school at the Medical High School "Nikolla Shtejn" and the Gymnasium "Kirili Pejčinović" in Tetovo. The average age of the students included in the study is 16.6 years. Of all the students involved in the study, 36.3% are male and 63.7% are female. Regarding the place of residence, 46.3% are from the city, and 53.7% are from rural areas.

Instruments

Internet Addiction (Internet Addiction Test – IAT, Young, 1998) is an instrument used to measure internet addiction, consisting of 20 questions with a 5-point response scale ranging from 0 “never” to 5 “always”. It also includes 6 sub-dimensions: salience (5 items), excessive internet use (5 items), neglect of work (3 items), anticipation (2 items), lack of control (3 items), and neglect of social life (2 items). A score higher than the expected average indicates a higher level of internet addiction. This scale shows high reliability in our study ($\alpha = .88$).

Aggression Tendency (The Buss-Perry Aggression Questionnaire – BP-AQ, Buss & Perry, 1992) is an instrument used to measure the tendency for aggression, containing 29 questions with a 5-point response scale ranging from 1 "not at all like me" to 5 "very much like me". It also has 4 sub-dimensions: anger (7 items), physical aggression (9 items), hostility (8 items), and verbal aggression (5 items). A score higher than the expected average indicates a higher level of aggression tendency. This scale shows high reliability in our study ($\alpha = .78$).

Results

Based on the data, the mean internet addiction score ($M=53.91$) with a standard deviation ($SD=16.43$) resulted above the expected real average ($M=50$), indicating a moderate level of internet addiction presence among the subjects involved in our study. The aggression tendency has a mean ($M=85.95$) and a standard deviation ($SD=13.27$). This value shows that the mean aggression tendency among the subjects is slightly below the expected real average ($M=87$), indicating a moderate level of aggression tendency.

Regarding the differences between boys and girls included in our study, the data show that boys ($M = 88.32$; $SD = 11.75$) and girls ($M = 84.60$; $SD = 13.94$) do not differ significantly in their tendency to express aggression ($t = 1.866$, $p=.06$). There are also no differences ($t = 1.109$, $p=.26$) between adolescents living in rural areas ($M = 84.96$; $SD = 13.89$) and those living in urban areas ($M = 87.10$; $SD = 12.50$) in terms of aggression tendency. There are no statistically significant differences between adolescents from rural and urban areas regarding internet addiction ($z=-1.865$, $p=.06$). However, there are statistically significant differences in internet addiction between boys and girls ($z=-3.811$, $p=.000$). Boys (Mean Rank - MR = 112.55) show a higher level of internet addiction compared to girls (MR= 85.78).

In our study, internet addiction and aggression tendency show a positive correlation ($r=.287$, $p=.000$), indicating that as internet addiction increases, the tendency for aggression also increases. Simple linear regression shows that 8% of the variation in aggression tendency is explained by the variation in internet addiction, with a statistically significant model (Table 1).

Table 1. Predictive Model of Aggression Tendency Based on Internet Addiction

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|--------------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 72.651 | 3.471 | | 20.929 | .000 |
| Internet Addiction | 5.137 | 1.292 | .279 | 3.977 | .000 |

$$B^2 = .08; F = 15.813; P = .000$$

Discussion and Conclusion

Our study aimed to predict the tendency for aggression among adolescents based on internet addiction.

The adolescents included in our study demonstrated a moderate level of internet addiction. They showed a below-average expected level, indicating a moderate tendency toward aggression. Studies from other countries report much higher levels of aggression tendency (Sidhu et al., 2019), differences that may result from the use of different measurement instruments as well as cultural aspects.

Our study data indicate no significant statistical differences between adolescent girls and boys regarding aggression tendency. However, significant statistical differences by gender were observed regarding internet addiction. In our study, boys exhibited a higher level of internet addiction compared to girls. These findings are in contrast with other studies (Chae et al., 2018; Osmani Ballazhi et al.), but align with the findings of Wichstrøm (2019), which reported that boys use the internet more than girls.

Adolescents from rural and urban areas did not differ in their tendency to express aggression or in their level of internet addiction. Other studies indicate that adolescents from urban environments use the internet more than those from rural areas (Dhawan, Kang & Sharma, 2020; Loan, 2011). Our data suggest that both rural and urban adolescents use the internet at similar levels, possibly because rural areas surrounding the city of Tetovo are well equipped with internet networks.

Internet addiction in our study emerged as an important predictor of aggression tendency, meaning that higher internet addiction levels are associated with a greater tendency to express aggression. Findings from other studies align with ours, as Jamil & Akhtar (2016) indicate that internet addiction predicts aggression.

This study also has limitations. The sample was purposeful and not randomly selected, which limits the generalization of our findings.

Another limitation of our study is the use of measurement instruments, which were used for the first time in our country, raising concerns about their validity.

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