Journal Website

Article history:
Received 14 April 2025
Revised 12 June 2025
Accepted 28 June 2025
Published online 30 June 2025

Iranian Journal of Neurodevelopmental Disorders

Volume 4, Issue 2, pp 1-10

Journal of Neurodevelopmental Disorder

E-ISSN: 2980-9681

Predicting Internet Addiction Based on Attachment Styles to Parents and Peers, Personality Traits, and Experiential Avoidance Among High School Students

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A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Ghasem Aljazayeri, M. F., Bahramipour Isfahani, M., Shallal, A. A., & Yousef, Z. (2025). Predicting Internet Addiction Based on Attachment Styles to Parents and Peers, Personality Traits, and Experiential Avoidance Among High School Students. *Iranian Journal of Neurodevelopmental Disorders, 4*(2), 1-10.
https://doi.org/10.61838/kman.jndd.4.2.6

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A B S T R A C T

Purpose: The present study aimed to determine the prediction of internet addiction based on attachment styles to parents and peers, personality traits, and experiential avoidance among high school students in Baghdad.

Methods and Materials: The research method was applied in terms of purpose and descriptive-correlational in terms of data type and research procedure. The statistical population included all high school students (second cycle) in Baghdad during the 2024–2025 academic year. Using multistage random sampling and based on the sample size formula by Tappachick and Fidel (2013), which suggests selecting 10 to 20 participants per variable in correlational studies, 12 participants were selected per variable and sub-variable, resulting in a total sample size of 300 students. Data were collected using the following instruments: Kimberly Young's Internet Addiction Questionnaire, Armsden and Greenberg's Attachment to Peers and Parents Scale, the NEO Five-Factor Inventory, and the Experiential Avoidance Questionnaire by Gámez et al. The collected data were analyzed using stepwise multiple regression through SPSS version 26.

Findings: The results of the internal correlation analysis revealed a significant relationship between internet addiction and the following variables: parental attachment (β = 0.45), peer attachment (β = 0.32), neuroticism (β = 0.50), extraversion (β = 0.41), openness to experience (β = 0.43), agreeableness (β = 0.44), conscientiousness (β = 0.46), and experiential avoidance (β = 0.43), with all relationships being significant at $p < .001$. Moreover, the results of the stepwise regression analysis indicated that among the predictor variables, the personality traits of neuroticism, conscientiousness, openness to experience, and agreeableness played a significant and effective role in predicting internet addiction in high school students ($p < .001$), while extraversion did not have a significant role in this regard ($p > .001$). Among the dimensions of attachment, parental attachment followed by peer attachment had a significant role in predicting internet addiction among high

school students ($p < .001$). Experiential avoidance also emerged as a significant predictor of internet addiction ($p < .001$).

Conclusion: Therefore, considering the significant influence of personality traits in predicting internet addiction, implementing practical interventions can help reduce this issue among high school students and foster healthier relationships and more balanced use of digital technologies.

Keywords: *Internet addiction, attachment styles to parents and peers, personality traits, experiential avoidance.*

1. Introduction

In recent decades, the digital age has brought with it profound transformations in communication, learning, and entertainment. Among adolescents in particular, the internet has become an integral part of daily life, offering unprecedented access to information and social interaction. However, the overuse and compulsive engagement with the internet has also led to concerns about a growing behavioral phenomenon—Internet addiction (IA)—which has been recognized as a significant mental health issue, especially among youth (Pan et al., 2020; Theopilus et al., 2024). Defined as the excessive or poorly controlled preoccupation, urges, or behaviors regarding internet use that lead to impairment or distress, IA is associated with detrimental outcomes such as academic underachievement, emotional dysregulation, and social withdrawal (Bahrami et al., 2024; Rezazadeh et al., 2021).

Adolescents are particularly vulnerable to developing IA due to their ongoing psychological development, social sensitivity, and need for autonomy and identity formation. The high prevalence rates of IA across different regions and demographic groups underscore the need for comprehensive models to understand its predictive mechanisms (Pan et al., 2020). Previous studies have emphasized that IA is not a singular outcome of environmental exposure but rather a complex interplay between individual predispositions, psychological traits, familial relationships, and emotional regulation capacities (Abboud & Atik, 2021; Rashad et al., 2019). This complexity necessitates a multidimensional framework to identify key psychological and relational variables that place adolescents at heightened risk.

One of the most salient predictors of IA, particularly during adolescence, is the quality of interpersonal attachment. Attachment theory posits that early relational experiences with caregivers shape internal working models of self and others, which in turn influence emotional regulation and coping strategies later in life (Salehi et al., 2023; Tamannaifar & Khaneshan, 2023). Insecure attachment styles—marked by anxiety, avoidance, or ambivalence—have been associated with increased susceptibility to IA, as adolescents may use digital engagement as a maladaptive means to fulfill unmet emotional needs or to escape from distressing real-world interactions (Jozi et al., 2023; Karimi-Farsani & Bahrami-Pour Isfahani, 2024). Moreover, peer attachment, which becomes increasingly significant during adolescence, plays a critical role in either buffering or exacerbating internet-related vulnerabilities. Secure peer attachments can promote resilience and reduce the likelihood of problematic digital behavior, while peer rejection or isolation can intensify the appeal of online alternatives (Bajoori & Saravani, 2017; Salehi et al., 2023).

In parallel with attachment patterns, personality traits—particularly those classified within the Five-Factor Model—are also critical in explaining variations in susceptibility to IA. Studies have consistently found that traits such as high neuroticism and low conscientiousness are positively associated with IA, reflecting emotional instability, impulsivity, and diminished self-regulatory capacities (Akbari & Forget, 2019; Costa Jr et al., 2019). Individuals with high neuroticism may turn to the internet to manage anxiety or mood disturbances, while those low in conscientiousness may struggle with impulse control and time management. Additionally, low agreeableness and openness have been linked to impaired social functioning and restricted emotional insight, which may predispose adolescents to maladaptive digital escapism (Abboud & Atik, 2021; Rashid El-Tah et al., 2018). Ghorbani (2022) further demonstrated that specific personality profiles could serve as effective screening indicators for adolescents at risk of developing addictive digital behaviors (Ghorbani, 2022).

Another important construct that has recently gained empirical attention in IA research is experiential avoidance (EA). Rooted in Acceptance and Commitment Therapy (ACT), EA refers to the tendency to evade or suppress unwanted internal experiences such as thoughts, emotions, or memories—even at the expense of long-term goals or

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values (Ahmadi et al., 2022; Rezapour et al., 2023a). Adolescents with high EA may excessively engage in online activities as a form of psychological escape or emotional numbing, making them particularly vulnerable to IA (Farhadi & Tabatabaei Zavareh, 2020; Seçer & Ulaş, 2021). Research by Rezapour et al. (2023a) found that EA mediated the relationship between emotional dysregulation and social anxiety among adolescents, suggesting its transdiagnostic role across several maladaptive outcomes (Rezapour et al., 2023a). Furthermore, EA has been associated with impulsivity, lack of self-control, and cognitive avoidance—traits that often co-occur with IA (Eynipour et al., 2021; Rashad et al., 2019).

Within the family context, parenting styles and emotional climate can significantly influence the development of both attachment security and emotion regulation patterns in adolescents. Authoritarian, neglectful, or inconsistent parenting can foster insecure attachment and hinder the development of effective coping mechanisms, thereby increasing vulnerability to IA (Hosseini et al., 2016; Tamannaifar & Khaneshan, 2023). Conversely, warm and responsive parenting supports adaptive self-regulation and digital literacy, serving as a protective factor. Hosseinpour Pakzad and Farhadi (2023) showed that targeted behavioral interventions such as play therapy could effectively reduce gaming addiction in children by improving emotional and behavioral self-regulation (Hosseinpour Pakzad & Farhadi, 2023). This underscores the malleability of early risk factors and the importance of preventive interventions.

The COVID-19 pandemic has further complicated the landscape of IA among youth. Prolonged home confinement, school closures, and limited social interaction have driven adolescents to rely more heavily on digital platforms for connection, education, and entertainment (Seçer & Ulaş, 2021). While these adaptations were often necessary, they also amplified digital overuse and weakened natural regulatory structures such as school routines and parental supervision. This context underscores the urgency of investigating underlying psychological and relational predictors of IA to inform targeted interventions for post-pandemic recovery and resilience.

Despite the growing body of research on IA, few studies have simultaneously examined the integrated role of attachment styles (both parental and peer), personality traits, and experiential avoidance in a single predictive model. This comprehensive approach is critical because these variables are not isolated predictors but dynamically interrelated factors that may reinforce or buffer against one another. For instance, insecure attachment may enhance EA, while personality traits such as neuroticism may mediate the link between EA and IA (Abboud & Atik, 2021; Jozi et al., 2023). A multivariate perspective enables researchers to better understand the interactive contributions of dispositional and relational factors in the development of IA and to identify high-risk adolescents who may benefit from preventive interventions.

The current study, therefore, seeks to explore the predictive power of parental and peer attachment styles, Big Five personality traits, and experiential avoidance in relation to Internet addiction among high school students in Baghdad.

2. Methods and Materials

2.1. Study Design and Participants

The present study was applied in terms of its objective and conducted using a correlational method. The statistical population included high school students (ages 15 to 18) in Baghdad during the 2024–2025 academic year, with a total of 3,000 students based on available statistics. Using multistage random sampling and the sample size formula proposed by Tappachick and Fidel (2013), which recommends selecting 10 to 20 participants per variable in correlational research, 12 individuals were selected per variable and sub-variable, resulting in a total sample size of 300 participants.

Inclusion criteria for this study were: being within the age range of 15 to 18 years; not using psychiatric medications; absence of acute or chronic psychological disorders (as confirmed by a psychiatrist or clinical psychologist); not receiving concurrent psychological treatments; and informed willingness and consent of both students and their parents (in accordance with the regulations of the Iraqi Ministry of Education) to participate in the study. Ethical considerations in sample selection followed fully accepted ethical protocols. No participant was included involuntarily (coercively), and confidentiality of participants' information was strictly observed.

2.2. Measures

Internet Addiction Test (IAT) by Kimberly Young: This questionnaire was developed by Kimberly Young in 1998. The IAT measures the degree of internet addiction and its items are designed based on the DSM-IV-TR criteria for pathological gambling, due to its clinical similarity with

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internet addiction. The questionnaire consists of 20 items, rated on a five-point Likert scale ranging from "always" to "rarely." The total score is calculated by summing the responses to all items, yielding a score between 20 and 100. Scores above 50 indicate a higher level of internet addiction. This is a standardized instrument, and its reliability and validity have been confirmed in prior studies, with a Cronbach's alpha of .90. In Iran, the Persian version has also been used, and its reliability has been reported with a Cronbach's alpha of .81 by Nasti Zayi and .88 by Ghasemzadeh. In the present study, the internal consistency of the scale was .89.

Attachment to Parents and Peers Questionnaire by Armsden and Greenberg (1987): This questionnaire was developed by Armsden and Greenberg (1987) and includes 67 items. It is a self-report tool rated on a five-point Likert scale from "strongly disagree" = 1 to "strongly agree" = 5. Items 1, 2, 4, 5, 7, 12, 13, 15, 16, 19, 20, 21, 22, 24, and 25 measure secure attachment style, while items 3, 6, 8, 9, 10, 11, 14, 17, 18, and 23 assess insecure attachment. There are no reverse-scored items in this questionnaire. In terms of reliability, Neuss et al. (2003) reported a mean Cronbach's alpha of .78 for its subscales. Construct validity was examined through factor analysis. Ashraf (2005) reported satisfactory reliability and a valid Persian version. In the studies by Hashemi and Jokar (2013), reliability was assessed using Cronbach's alpha, and construct validity was evaluated using factor analysis. The alpha coefficients for the subscales of attachment to parents and peers were .87 and .81, respectively.

NEO Five-Factor Inventory (NEO-FFI): This study used the NEO-FFI developed by Costa and McCrae (1992) to assess personality traits. Originally designed in 1985, the NEO Personality Inventory was revised in 1992 and finalized with 240 items. Initially, the inventory included Neuroticism, Extraversion, and Openness to Experience. In the 1992 version, Agreeableness and Conscientiousness were added. The short form (NEO-FFI) includes 60 items, derived through factor analysis of the full version, with 12 items per dimension based on highest factor loadings (John & Srivastava, 1999, as cited in Nilforoushan, 2010). The internal consistency of this inventory has been confirmed in multiple studies (Nilforoushan, 2010). Respondents rate their agreement with each item on a five-point scale from (1) "strongly agree" to (5) "strongly disagree." Higher scores indicate higher levels of Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Cronbach's alpha coefficients for the subscales in this study were: Neuroticism (α = .71), Extraversion (α = .72), Openness (α = .80), Agreeableness (α = .81), and Conscientiousness (α = .83).

Experiential Avoidance Questionnaire by Gámez et al. (2014): The Experiential Avoidance Scale by Gámez et al. (2014) consists of 15 items rated on a six-point Likert scale. The test–retest reliability was reported as .70 by the developers. Its convergent validity with psychological distress measures has been confirmed. Construct validity was also verified through factor analysis, revealing a single factor structure. In Iran, Farhadi et al. (2022) reported acceptable psychometric properties for this scale and demonstrated its significant relationship with childhood trauma. In the current study, the internal consistency of the scale was .82.

2.3. Data Analysis

In this study, descriptive statistics (mean and standard deviation) were used, and for inferential analysis, stepwise multiple regression was conducted using SPSS version 26.

3. Findings and Results

The demographic data of the study indicated that the mean age of participants was 16.12 (SD = 3, range = 13–19). Table 1 presents the descriptive indices (mean and standard deviation) for the research variables along with the correlation between the variables among students (N = 300).

Table 1

Mean and Standard Deviation of Research Variables

Variables	N	Mean	Standard Deviation	Min Score	Max Score
Attachment to Parents	300	29.25	3.52	22	38
Attachment to Peers	300	29.98	4.42	22	40
Neuroticism	300	39.87	6.73	26	54
Extraversion	300	40.96	6.78	28	60
Openness to Experience	300	41.60	6.15	25	55
Agreeableness	300	39.02	5.96	24	51
Conscientiousness	300	39.60	6.19	27	56
Experiential Avoidance	300	200.39	18.40	162	247

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As shown in Table 1, the mean of the criterion variable—Internet addiction—was 64.65. The means for the predictor variables were as follows: attachment to parents (M = 29.25), attachment to peers (M = 29.98), neuroticism (M = 39.87), extraversion (M = 40.96), openness to experience (M = 41.60), agreeableness (M = 39.02), conscientiousness (M = 39.60), and experiential avoidance (M = 200.39).

Conducting regression analysis requires fulfilling several assumptions.

Assumption 1: For sampling, multistage random sampling was used due to the nature of the population and the inclusion/exclusion criteria.

Assumption 2: To estimate sample size, the formula by Tappachick and Fidel (2013) was applied, recommending 10 to 20 participants per variable. Thus, a sample size of 300 was deemed adequate for statistical analysis.

Assumption 3: To verify normal distribution, the normality of data was examined. This assumption implies that the difference between the sample's score distribution and the population's normal distribution equals zero. The Kolmogorov–Smirnov test and the skewness and kurtosis indices were used. The results showed that all variables had skewness and kurtosis within ±1.98, indicating normal distribution. The Kolmogorov–Smirnov test also supported the null hypothesis of normality for all variables (all $p > .05$).

Assumption 4: To assess linear relationships between variables, scatterplots were used, confirming linearity for all variables.

Assumptions 5 and 6: Multicollinearity arises when predictor variables in multiple regression show high correlations, increasing standard error and uncertainty in estimated parameters. Tolerance and Variance Inflation Factor (VIF) were used to assess multicollinearity (Miles & Shevlin, translated by Kiamanesh & Kabiri, 2016). The VIF values were less than 2.5, and tolerance values exceeded 0.40, confirming the absence of multicollinearity. The Durbin–Watson statistic, used to assess the independence of residuals, ranged between 1.5 and 2.5, indicating no violation of the independence assumption.

The results of the Pearson correlation analysis between Internet addiction and the predictor variables (attachment to parents and peers, personality traits, and experiential avoidance) are presented in Table 2.

Table 2

Pearson Correlation Between Internet Addiction and Predictor Variables (N = 300)

Variable	r	p-value
Attachment to Parents	-0.457	.001
Attachment to Peers	-0.334	.001
Neuroticism	0.505	.001
Extraversion	-0.411	.001
Openness to Experience	0.432	.001
Agreeableness	-0.440	.001
Conscientiousness	-0.460	.001
Experiential Avoidance	0.434	.001

As shown in Table 2, the correlations between the predictor variables and Internet addiction were statistically significant. The correlation coefficients between Internet addiction and attachment to parents and peers were -0.457 and -0.334, respectively ($p < .001$), indicating that greater attachment to parents and peers is associated with lower levels of Internet addiction among students.

The results also demonstrated that the correlation coefficients between the personality traits and Internet addiction were as follows: neuroticism (r = 0.505), extraversion (r = -0.411), openness to experience (r = 0.432), agreeableness (r = -0.440), and conscientiousness (r = -0.460), all statistically significant at $p < .001$. These results suggest that Internet addiction increases with higher neuroticism and openness to experience and decreases with higher extraversion, agreeableness, and conscientiousness.

Furthermore, the correlation between experiential avoidance and Internet addiction was r = 0.434, which was also statistically significant ($p < .001$). This indicates that higher experiential avoidance is associated with higher levels of Internet addiction among students.

The results of the simultaneous regression analysis to predict Internet addiction using all predictor variables—attachment styles to parents and peers, personality traits, and experiential avoidance—are presented in Tables 3 and 4.

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Table 3

Multiple Correlation Coefficients and ANOVA for Predicting Internet Addiction Based on Predictor Variables

Step	Variables Entered into the Equation	R	R^2	SE	R^2 Change	Df1	Df2	F	*p*
1	Neuroticism	0.521	0.272	5.97	0.272	1	298	111.19	.001
2	Neuroticism + Conscientiousness	0.640	0.410	5.38	0.138	1	297	69.71	.001
3	Neuroticism + Conscientiousness + Openness	0.665	0.443	5.25	0.033	1	296	17.38	.001
4	Neuroticism + Conscientiousness + Openness + Agreeableness	0.676	0.457	5.18	0.015	1	295		

The results of the simultaneous regression analysis in Table 3 indicate that among all predictor variables, the personality trait of neuroticism had the strongest predictive power for Internet addiction in students. Neuroticism alone accounted for 27% ($R^2 = 0.272$) of the variance in Internet addiction, and this was statistically significant ($F = 111.19$, $p < .001$). In the second step, with the addition of conscientiousness, the explained variance increased to 41%, with conscientiousness contributing an additional 13.8%, which was also significant ($F = 69.71$, $p < .001$). In the third step, adding openness to experience increased the explained variance to 44.3%, with a unique contribution of 3.3% ($F = 17.38$, $p < .001$). In the fourth step, including agreeableness raised the explained variance to 45.7%, with a unique contribution of 1.5%, also statistically significant ($F = 7.89$, $p < .01$). Other predictors, including attachment to parents and peers, experiential avoidance, and extraversion, did not significantly predict Internet addiction when all variables were included.

Table 4

Simultaneous Regression Coefficients for Predictor Variables in Predicting Internet Addiction

Predictor	B	SEb	β	*t*	*p*
Constant	70.27	3.95	–	17.77	.001
Neuroticism	0.282	0.054	0.272	5.22	.001
Conscientiousness	-0.167	0.064	-0.147	-2.60	.010
Openness	0.148	0.060	0.130	2.47	.014
Agreeableness	-0.132	0.066	-0.112	-1.99	.043

As shown in Table 4, among the predictor variables, neuroticism ($t = 5.22$), conscientiousness ($t = -2.60$), openness to experience ($t = 2.47$), and agreeableness ($t = -1.99$) significantly predicted Internet addiction in students. Based on the standardized beta coefficients, a one-unit increase in conscientiousness and agreeableness predicted decreases in Internet addiction by 0.147 and 0.112 units, respectively. In contrast, a one-unit increase in neuroticism and openness predicted increases of 0.272 and 0.130 units in Internet addiction, respectively.

Table 5

Stepwise Multiple Regression and ANOVA for Predicting Internet Addiction Based on Predictor Variables

Step	Variables Entered	R	R^2	SE	R^2 Change	Df1	Df2	F	*p*
1	Attachment to Parents	0.457	0.209	6.22	0.209	1	298	78.81	.001
2	Attachment to Parents + Peers	0.469	0.220	6.19	0.010	1	297	4.11	.040
1	Neuroticism	0.492	0.242	6.09	0.242	1	298	95.06	.001
2	Neuroticism + Conscientiousness	0.591	0.350	5.65	0.108	1	297	49.30	.001
3	+ Openness to Experience	0.616	0.380	5.53	0.030	1	296	14.18	.001
4	+ Agreeableness	0.631	0.398	5.45	0.019	1	295	9.18	.003
1	Experiential Avoidance	0.434	0.189	6.30	0.189	1	298	69.35	.001

The results of the stepwise regression analysis in Table 5 reveal that, among the attachment variables, attachment to parents had the strongest predictive power for Internet addiction ($R^2 = 0.209$; $F = 78.81$; $p < .001$). Adding attachment to peers increased the total variance explained to

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22%, with peers contributing an additional 1% ($F = 4.11$; $p < .05$).

Among personality traits, neuroticism alone explained 24.2% of the variance in Internet addiction ($F = 95.06$; $p < .001$). Adding conscientiousness increased the prediction to 35%, with a unique contribution of 10.8% ($F = 49.30$; $p < .001$). Adding openness raised the explained variance to 38%, with a 3% increase ($F = 14.18$; $p < .001$), and finally, adding agreeableness raised it to 39.8%, with an additional 1.9% ($F = 9.18$; $p < .01$).

Additionally, experiential avoidance alone predicted 18.9% of the variance in Internet addiction ($F = 69.35$; $p < .001$), indicating it is a significant predictor as well.

It is important to note that extraversion did not significantly predict Internet addiction in the presence of other personality traits.

Table 6

Regression Coefficients for Predictor Variables on Internet Addiction

Variable	B	SEb	β	*t*	*p*
Constant	93.18	3.15	–	29.55	.001
Attachment to Parents	-0.776	0.121	-0.391	-6.42	.001
Attachment to Peers	-0.195	0.096	-0.123	-2.03	.040
Constant	62.92	3.98	–	15.80	.001
Neuroticism	0.294	0.057	0.284	5.15	.001
Conscientiousness	-0.255	0.0666	-0.226	-3.85	.001
Openness to Experience	0.1998	0.062	0.175	3.18	.002
Agreeableness	-0.209	0.069	-0.178	-3.03	.003
Constant	31.57	3.98	–	7.91	.001
Experiential Avoidance	0.165	0.02	0.434	8.32	.001

According to the results in Table 6, among the attachment-related predictor variables, attachment to parents ($t = -6.42$) and attachment to peers ($t = -2.03$) significantly predicted changes in Internet addiction among students. Based on the standardized beta coefficients, a one-unit increase in attachment to parents and peers is associated with a decrease of 0.391 and 0.123 units, respectively, in Internet addiction.

Among the personality traits, neuroticism ($t = 5.15$), conscientiousness ($t = -3.85$), openness to experience ($t = 3.18$), and agreeableness ($t = -3.03$) significantly predicted Internet addiction. A one-unit increase in conscientiousness and agreeableness is associated with a decrease of 0.226 and 0.178 units, respectively, in Internet addiction. Conversely, a one-unit increase in neuroticism and openness is associated with an increase of 0.284 and 0.175 units, respectively, in Internet addiction among students.

The variable experiential avoidance ($t = 8.32$) also significantly predicted changes in Internet addiction. According to the standardized beta coefficient, a one-unit increase in experiential avoidance results in a 0.434 unit increase in Internet addiction.

4. Discussion and Conclusion

The present study aimed to predict internet addiction among high school students based on attachment styles to parents and peers, Big Five personality traits, and experiential avoidance. The findings revealed several significant relationships and predictive patterns that align with existing theoretical and empirical literature.

The results demonstrated that neuroticism was the strongest personality predictor of internet addiction, positively and significantly associated with higher levels of addictive internet behavior. Adolescents high in neuroticism tend to experience emotional instability, anxiety, and mood swings, which can drive them to seek emotional escape through excessive internet use. This finding is consistent with prior studies emphasizing the role of neuroticism in maladaptive technology engagement (Akbari & Forget, 2019; Costa Jr et al., 2019). It aligns with Abboud and Atik's (2021) conclusion that individuals with high neurotic traits are more vulnerable to impulsivity and internet overuse due to their difficulty in managing emotional arousal (Abboud & Atik, 2021). Similarly, Ghorbani (2022) also found neuroticism to be a significant predictor of digital dependency among male adolescents (Ghorbani, 2022).

Additionally, the study revealed that low conscientiousness was significantly and inversely related to internet addiction. Conscientious adolescents, typically characterized by strong self-discipline and goal-directed behavior, are less likely to indulge in compulsive online behavior. This inverse relationship echoes earlier research

E-ISSN: 2980-9681

asserting that a low level of conscientiousness is one of the most robust dispositional predictors of behavioral addictions, including IA (Abboud & Atik, 2021; Akbari & Forget, 2019; Costa Jr et al., 2019). Furthermore, low agreeableness was also found to predict internet addiction. Students scoring lower on agreeableness, which reflects empathy, cooperation, and social harmony, may be more prone to conflictual peer relationships or social detachment, factors that can increase online escapism (Jozi et al., 2023; Rashid El-Tah et al., 2018).

An interesting finding emerged regarding openness to experience, which was positively associated with internet addiction. While this trait typically indicates intellectual curiosity and creativity, its association with IA may reflect a preference for immersive and stimulating environments such as online platforms. Previous studies suggest that high openness can sometimes lead to overindulgence in novel experiences, including excessive digital exploration, especially among adolescents with fewer external constraints (Akbari & Forget, 2019; Ghorbani, 2022).

Among the relational variables, attachment to parents was a strong negative predictor of internet addiction, indicating that adolescents with secure parental attachment were less likely to become internet dependent. This finding is consistent with attachment theory, which posits that secure early relationships foster better emotional regulation and lower dependency on external coping mechanisms such as internet use (Bajoori & Saravani, 2017; Salehi et al., 2023). Adolescents who experience warmth, responsiveness, and consistent support from parents tend to exhibit higher self-regulation and resilience, which buffer against excessive internet engagement (Karimi-Farsani & Bahrami-Pour Isfahani, 2024; Tamannaifar & Khaneshan, 2023). Similarly, peer attachment also showed a significant inverse relationship with internet addiction, though to a lesser degree. This is aligned with findings by Salehi et al. (2023), who observed that securely attached adolescents are less likely to turn to online social spaces as substitutes for real-life relationships (Salehi et al., 2023).

The findings also emphasized the role of experiential avoidance (EA) as a significant positive predictor of internet addiction. Students with high levels of EA are more likely to avoid internal discomfort—such as negative emotions, intrusive thoughts, or unresolved psychological conflicts—by immersing themselves in the online world. This supports the ACT model, which frames experiential avoidance as a maladaptive emotional regulation strategy linked with numerous behavioral problems, including IA (Ahmadi et al., 2022; Rezapour et al., 2023b). Previous studies confirm this pathway. For instance, Seçer and Ulaş (2021) demonstrated that EA exacerbated psychological distress in youth during the COVID-19 pandemic, leading to maladaptive behavioral coping such as compulsive online engagement (Seçer & Ulaş, 2021). Farhadi and Tabatabaei Zavareh (2020) also found that reducing EA through theater therapy significantly decreased digital dependency in students (Farhadi & Tabatabaei Zavareh, 2020).

Taken together, the findings of this study indicate that internet addiction among adolescents results from a convergence of personality traits, relational attachment security, and maladaptive coping strategies. This supports the integrative models of IA that emphasize the interplay of individual dispositions and environmental influences. The structural modeling by Jozi et al. (2023) further validates this interconnectedness by showing that attachment styles, personality dimensions, and communication skills together predict social media addiction, reinforcing the current findings (Jozi et al., 2023).

Furthermore, these results are situated within the broader public health concern surrounding adolescent internet use. As noted by Pan et al. (2020), the increasing global prevalence of IA necessitates targeted interventions tailored to the developmental and psychological profiles of youth (Pan et al., 2020). The current study complements this urgency by identifying specific personality and attachment risk factors that can guide prevention and intervention efforts in educational and clinical settings.

Despite the robustness of the findings, this study has several limitations. First, the cross-sectional nature of the research precludes any causal inferences. It is unclear whether the identified traits and attachment styles lead to IA or whether prolonged internet addiction gradually alters personality functioning and relational dynamics. Second, all measures were self-reported, which may have introduced social desirability or recall biases. The sensitive nature of IA and emotional traits could have led some students to underreport their symptoms. Third, the study focused exclusively on students from Baghdad, limiting the generalizability of the findings to other regions or cultures with different digital access patterns, parenting norms, or socio-political dynamics.

Future studies should adopt longitudinal designs to establish causal pathways between attachment patterns, personality traits, experiential avoidance, and internet addiction. Additionally, integrating qualitative methods such as interviews or focus groups could provide deeper insights

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into the subjective experiences of adolescents struggling with IA. Future research could also explore the moderating role of gender, socioeconomic status, and parental monitoring in the relationship between psychological traits and IA. Furthermore, cross-cultural comparative studies could help determine whether these predictors hold universally or vary by cultural context.

Practitioners working with adolescents—such as school counselors, psychologists, and educators—should consider assessing personality traits and attachment patterns as part of routine mental health screenings to identify at-risk students. Preventive programs should focus on strengthening parental and peer attachments through family therapy, social skills training, and parent-education workshops. Interventions aimed at reducing experiential avoidance—such as Acceptance and Commitment Therapy—can also be incorporated into school-based counseling services. Moreover, personalized intervention plans that consider individual differences in personality and relational history are likely to be more effective in reducing internet addiction and promoting healthier digital habits.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We hereby thank all individuals for participating and cooperating us in this study.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

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E-ISSN: 2980-9681