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Adolescents' Internet Addiction: Psychological Features of Emotional Intelligence and Gender Disparities

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Abstract

The primary aim of this study was to investigate the relationship between Emotional Intelligence (EI) components and Internet Addiction (IA) symptoms among adolescents, with a specific focus on gender differences. We sought to identify which EI factors may serve as protective or risk factors for IA, potentially informing targeted psychological interventions.
The article is based on a survey of teenagers (n = 86). The research employed descriptive statistics, quantitative data processing techniques, and psychodiagnostic techniques.
According to the study's findings, it is possible to boost one's self-motivation by having a developmental impact on easier behavior control and identifying warning signals of Internet addiction.
Our understanding of emotional intelligence and its correlates is strengthened by the research findings, which show how social and cultural changes, such as the rise of non-chemical addiction, have an impact on emotional intelligence. This implies that as society changes, so too does the way we understand and experience emotions. The study takes a close look at the details of self-motivation, behavior control, and emotional intelligence in the digital age.

Keywords: emotional intelligence, Internet addiction behavior, adolescents, integral indicators, correlation of indicators, gender differences.

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Introduction

In contemporary research on the growth of adolescents in the period of active digital inclusion in their social life, the ideas of emotional intelligence and Internet addiction behavior are a topical and contentious issue. The impact of digital reality on the social and psychological development of teenagers are best reflected and characterized by a number of key concepts within the framework of a multidisciplinary approach of contemporary research. A new format was introduced within the psychological status as a result of intense digitalization: the general and private realm of virtual reality. For teenagers, this online environment has replaced their traditional sociocultural setting.

Communication in the virtual space changes the consciousness of adolescents, their ways of interacting with the world, where online communication turns into mechanical communication, thereby contributing to the formation of Internet addiction and negatively affecting the development of emotional intelligence of adolescents in general.

John Mayer and his colleagues formulated the concept of emotional intelligence for the first time in psychology, characterizing it as the capacity to recognize, comprehend, and control one's own and other people's emotions (Mayer et al., 2011). Mayer dispels the ‘intellectualistic presumption’ that cognitive interest is the primary factor in thinking in his study and persuasively demonstrates that ‘emotional thinking’ is a substantial factor in human mental activity (Mayer et al., 2011).

Goleman interprets emotional intelligence as the ability to recognize and regulate one's emotions and the emotions of others through understanding one's own feelings, empathy for the feelings of others and regulation of emotions, thus improving one's life (Goleman, 2007). A broader interpretation of the concept of emotional intelligence is given by Bar-On, who for the first time introduced the designation EQ – Emotional Quotient, a coefficient of emotionality, by analogy with IQ - Intelligence Quotient. The author defines emotional intelligence as all non-cognitive abilities, knowledge and competence that enable a person to successfully cope with various life situations, and identifies five areas of competence that can be identified with the five components of emotional intelligence (Bar-On, as cited in De Weerdt & Rossi, 2012). Lyusin is one of the scholars who studied emotional intelligence in Russia. He defines emotional intelligence as the capacity to comprehend one's own and other people's emotions and control them (Lyusin, 2009).

The author distinguishes between intrapersonal and interpersonal emotional intelligence, each of which calls for the use of various but related cognitive processes and skills. Based on the presented analysis of the concept of emotional intelligence, we can conclude that emotional intelligence is the basic ability of a

person to establish communication with themselves and other people. In adolescence, communication with peers plays a fundamental role for the social development of teenagers.

The specifics of the impact of digital reality on the social and psychological development of adolescents are best reflected and characterized by a number of fundamental notions that fall under the umbrella of modern research's multidisciplinary approach. The term ‘Internet Addiction Disorder’ was proposed by Goldberg in 1995 to describe a pathological, irresistible craving for the use of the Internet (Goldberg, as cited in Salicetia, 2015). Problematic or pathological Internet use are other names for Internet Addiction Disorder (IAD). It is usually understood to be problematic, compulsive Internet use that, over time, significantly impairs a person's ability to function in a variety of spheres of life.

Teenagers' personal and emotional states become more sensitive as a result of their continual exposure to virtual reality. They also become less critical of current events and overestimate their mental ability, willpower, and physical strength. All of this renders an addicted youngster powerless to deal with issues in real life and encourages his/her desire to grow solely in virtual reality. Such a destructive result of socio-psychological development reduces the self-motivation to achieve success, the ability to communicate effectively and develop emotional self-awareness, and creates difficulty in interpersonal relationships with other people.

Purpose and objectives of the study

The issue of Internet behavior disorders is more pertinent for young people since teenagers have more access to the Internet than any other age group and are more at risk of using it excessively. So, finding psychological tools to protect teenagers from potential behavioral outbursts in the expansive world of virtual reality becomes very important.

The purpose of this study was to examine the relationship between emotional intelligence and Internet addiction in adolescents. To achieve this purpose, the following objectives were set: 1. To assess the levels of emotional intelligence and Internet addiction among the participants; 2. To conduct a correlation analysis to identify significant relationships between specific EI components (e.g., self-motivation, emotion management, empathy) and IA symptoms (e.g., compulsive use, withdrawal symptoms); 3. To analyze gender-based differences in the manifestations of both EI and IA; 4. To determine the structure of the relationship between EI and IA indicators for boys and girls separately using correlation analysis.

The pertinence of our research is supported by empirical evidence from global meta-analyses, confirming a persistent association between Internet dependency and reduced well-being (Cheng & Li, 2014).

Literature review

Research has shown that young people are at particular risk of developing Internet Addiction Disorder (Tomczyk & Solecki, 2019), with case studies highlighting students whose academic performance plummets as they spend more and more time online. Some also experience health consequences due to sleep loss (Tereshchenko et al., 2021), as young people stay up late to chat online, check social media status updates or keep progressing in a game (Wallace, 2014).

Internet addiction increases the risk of many negative social and health outcomes, including poor academic performance, detrimental personal effects, anxiety, and depression (Elbilgahy et al., 2021). To date, the most documented evidence of Internet addiction is time disruption, which subsequently leads to disruption of normal social life, including school, work, and daily routine (Chou et al., 2005). Savci and Aysan (2017) analyzed existing research on Internet addiction and identified a number of social and emotional factors associated with this phenomenon. These include loneliness, social anxiety, depression, and low self-esteem. They argued that these factors may lead people to use the Internet as a way to cope with negative emotions or social isolation, which in turn can lead to addictive behavior.

Beyond behavioural manifestations, a substantial body of contemporary scholarship focuses on the cognitive underpinnings of internet addiction, specifically maladaptive cognitions and cognitive distortions that serve to maintain pathological patterns of Internet use (Davis, 2001). Problematic Internet use is recognized as a global mental health issue, manifesting in compulsive behavior, loss of control, and persistent use despite adverse consequences, ultimately impairing an individual's daily functioning (Spada, 2013).

Research indicates that stressful life events constitute a significant predictor of internet addiction development, with this relationship often being mediated by unmet psychological needs and maladaptive stress coping strategies (Li et al., 2016).

Methodology

The respondents were divided into 2 groups: Group 1 (girls) and Group 2 (boys). At both intragroup and intergroup levels, the study identified the characteristics of emotional intelligence among teenagers showing the signs of Internet addiction. The analysis of correlations between indicators of emotional intelligence and their relationship with the levels of Internet addiction behavior was conducted separately in the Group 1 (girls) and the Group 2 (boys). The study involved students of the 7th and 9th grades aged 13 to 16. The sample consisted of 86 respondents, including 39 girls and 47 boys. The applied research

techniques include descriptive statistics and data processing algorithms (correlation analysis using the Spearman Rank correlation method, comparative analysis of the Mann-Whitney U-test based on the SPSS statistical tool). The following psychodiagnostic methods were used to operationalize the parameters stated in the study: The Hall Emotional Intelligence Self-Evaluation (EQ) questionnaire; Chen Internet Addiction Scale (CIAS).

A purposive sample of secondary school pupils was used in this research. Participants were selected from a Kazan, Russia, public school's seventh and ninth grades. The study included 86 teenagers (39 girls and 47 boys) between the ages of 13 and 16 (M = 14.3, SD = 1.1). All participants and their parents or legal guardians provided written informed consent prior to data collection.

The data was gathered between September and October of 2024, during the academic year. In order to maintain a consistent atmosphere and offer clarification when necessary, the surveys were given out in a classroom during regular school hours, with the presence of the class teacher and a professional research assistant. Participants received assurances that their answers would be anonymous and confidential. Two self-report questionnaires in the form of paper and pencil were given to them to fill out. It took about 25 to 30 minutes on average to finish both instruments.

The Hall Emotional Intelligence Self-Evaluation (EQ) questionnaire was used to measure emotional intelligence (EI). This self-report tool has 30 items with ratings ranging from "Strongly Disagree" to "Strongly Agree" on a 6-point Likert scale. Emotional Awareness, Emotion Management, Self-Motivation, Empathy, and Recognition of Others' Emotions are the five subscales on which it produces scores. Additionally, a total integrative EI score is computed. Higher perceived emotional intelligence is indicated with higher scores.

The Chen Internet Addiction Scale (CIAS) was used to measure Internet Addiction (IA). The ratings on this 26-item scale range from "Does not apply to me at all" to "Applies to me very much" on a 4-point Likert scale. It evaluates the degree of Internet addiction on a number of subscales, such as: Interpersonal and Health-Related Problems; Compulsive Use Symptoms; Withdrawal Symptoms; Tolerance Symptoms; and Time Management Issues. Higher scores indicate a higher degree of Internet addiction. A total score is calculated. Individuals at high risk for IA were identified using a clinical cut-off score of 67/68.

IBM SPSS Statistics 28 was used to handle and evaluate the gathered data. The statistical methods listed below were used. In order to characterize the central tendency and variability within the sample, means (M) and standard deviations (SD) were computed for each continuous variable (EI and IA scores). To guarantee measurement reliability for our sample, Cronbach's Alpha was used to evaluate the internal consistency of

the Hall EQ and CIAS scales. Spearman's Rank Order Correlation coefficient (ρ) was employed to investigate the connections between the elements of emotional intelligence and symptoms of Internet addiction. Since it was not believed that the data from the psychological scales would be regularly distributed, this non-parametric approach was selected. Because the data did not meet the normalcy assumptions needed for parametric tests such as the t-test, the non-parametric Mann-Whitney U test was used to check for statistically significant gender differences (boys vs. girls) across the EI and IA subscales. $p < 0.05$ was used as the threshold for statistical significance in all studies.

Results

As a result, the following association was found between the emotional intelligence level (high, medium, low) and key indicators of Internet addiction behavior in adolescents: the main signs of online addiction, issues caused by such conduct, and the total score for Internet addiction.

Intergroup variations in the emotional intelligence of students by gender were highlighted: Group 1 (girls) and Group 2 (boys) on the scales of Self-motivation, Empathy, Compulsive Symptoms, Withdrawal Symptoms, and Key Symptoms of Internet Addiction. As a result, self-motivation is related to the Symptoms of Tolerance to Internet Addiction' and 'Intrapersonal Difficulties and Health-Related Problems indicators in the Group 1 (girls), where the number of significant correlations was (p=0.01) - 2.

In the Group 2 (boys), the number of significant relationships was 6 (p=0.01): Self-motivation was associated with Compulsive symptoms, Withdrawal symptoms, Time management, Key symptoms of Internet addiction, Problems associated with Internet addiction behavior (criterion of the negative consequences of Internet addiction) and General indicator of Internet addiction.

This analysis made it possible to identify gender differences in the relationship between indicators of emotional intelligence and the identified levels of addicted Internet use among adolescents. The comparative analysis using the Mann-Whitney U-test, based on the selected statistically significant data, made it possible to determine differences between the two samples on the following scales: Compulsive symptoms, Withdrawal symptoms, and Key symptoms of Internet addiction. The selected scales were more intense in the Group 1 (girls).

Table 1. Comparative analysis of indicators using the Mann-Whitney U-criterion of emotional intelligence and Internet addiction in the Group 1 (girls) and the Group 2 (boys).

Indicators	Averages		Ranks		U-test
	Group 1	Group 2	Group 1	Group 2	
Empathy (Hall test)	26.95	24.36	51.33	37	611
Recognition of Other People's Emotions (Hall test)	25.51	21.96	50.53	37.67	642.5
Compulsive Symptoms of Internet addiction	10.51	9.17	49.96	38.14	664.5
Withdrawal Symptoms	11.33	10.11	49.42	38.59	685.5
Key Symptoms of Internet Addiction	31.38	27.96	49.13	38.83	697

The main attention in the analysis of the obtained data was paid to the study of the relationship between the indicators of emotional intelligence in each group of respondents, as well as the relationship of these indicators with the identified levels of Internet addiction.

In the Group 1 (girls), the correlation analysis revealed a cluster of correlation pleiades, showing the link between emotional intelligence and the Internet addiction markers.

The Self-motivation indicator (p=0.01), which showed an active interaction with the Symptoms of Tolerance to Internet Addiction and Intrapersonal Difficulties and Health-Related Problems, is a scheme center in the correlation galaxy in the first group of responders (Figure 1).

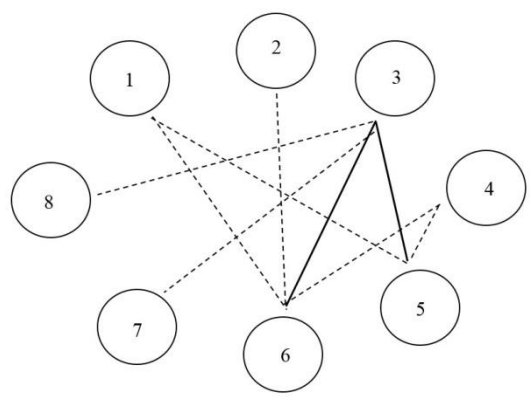

Figure 1. Correlation pleiades of the 1st group (girls)

The indicators:

1. Emotional awareness;
2. Management of emotions;
3. Self-motivation;

4. Integrative indicator of emotional intelligence;
5. Symptoms of tolerance to the Internet addiction;
6. Intrapersonal problems and problems related to health;
7. Problems associated with the Internet addiction behavior (criterion of the negative consequences of Internet addiction);
8. General indicator of Internet addiction.

The indicators of Self-motivation, Intrapersonal problems and health-related problems, and Problems associated with the Internet addiction behavior have inverse relationships with each other, as revealed by the data (p=0.01). This suggests that the indicators of intrapersonal problems, health-related problems, as well as issues with the Internet addiction behavior, are less likely to be present in teenagers with higher levels of self-motivation.

Another significant inverse link between the indicators of Management of emotions and Intrapersonal problems and health-related problems (p=0.05) implies a high level of emotion management aids in lowering tension, intrapersonal problems, and issues related to health. The correlation analysis conducted in the Group 2 (boys) highlighted the actively reacting Self-motivation indicator in the core system (Figure 2).

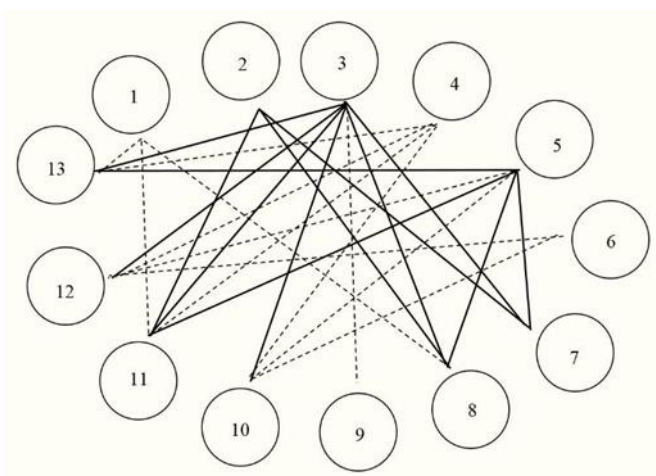

Figure 2. Correlation Pleiades of the 2nd group (boys)

The value of the indicators:

1. Emotional awareness;
2. Management of emotions;

3. Self-motivation;
4. Empathy;
5. Recognition of other people's emotions;
6. Integrative indicator of emotional intelligence;
7. Compulsive symptoms;
8. Withdrawal symptoms;
9. Symptoms of tolerance;
10. Time management;
11. Key symptoms of Internet addiction;
12. Problems associated with the Internet addiction behavior;
13. General indicator of Internet addiction.

The largest number of correlations was found in the group of boys (Figure 3).

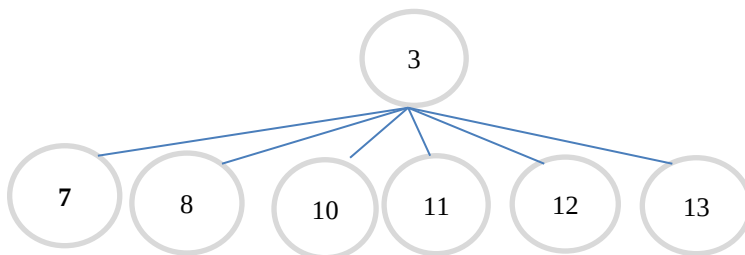

Figure 3. The scheme center of correlation pleiades in the 2nd group (boys)

The value of indicators:

3. Self-motivation;
7. Compulsive symptoms;
8. Withdrawal symptoms;
10. Time management;
11. Key symptoms of Internet addiction;
12. Problems associated with the Internet addiction behavior;
13. General indicator of Internet addiction.

Discussion

An examination of the test group of boys is provided below, based on the findings shown in the comparative matrix. There was a significant inverse relationship between the Emotion Management score and the Compulsive Symptoms score (p=0.01), Withdrawal Symptoms score (p=0.01), Key Symptoms of

Internet Addiction score (p=0.01). The research supports the cognitive-behavioral paradigm of pathological Internet use (Davis, 2001), which postulates that maladaptive coping mechanisms like obsessive Internet use may result from deficiencies in emotion regulation. Our findings specifically show that lower levels of withdrawal symptoms, obsessive symptoms, and other important signs of Internet addiction are linked to higher levels of emotion control. According to the framework of emotional dysregulation as a risk factor for behavioral addictions, on the other hand, lower levels of emotion control are linked to a greater need to make voluntary efforts to control the urge to access the Internet in order to deal with the discomfort and anxiety caused by the inability to use the Internet (Billieux et al., 2015).

The qualitative analysis of the 2nd group (boys) revealed significant relationship between the Empathy and the Time management indicators (p=0.05); Key symptoms of Internet addiction (p=0.05); Problems associated with Internet addiction behavior (criterion of the negative consequences of Internet addiction) (p=0.05); Overall Internet addiction score (p=0.05). These findings build on earlier research by Savci and Aysan (2017), who found emotional and social aspects linked to Internet addiction. Because empathetic people have better offline social ties and are less dependent on virtual settings for social fulfillment, our findings imply that empathy may be a protective factor (Primack et al., 2017). Therefore, the more empathetic a person is, the less time management issues they face, the less distressed they are, and the less detrimental the effects of their Internet addiction habit are.

The Integrative indicator of emotional intelligence and the Time management (p=0.05) and Issues related with the Internet addiction behavior indicators (p=0.05) were also shown to have a strong inverse association. This adds credence to the theoretical framework put forth by Mayer et al. (2011), who defined emotional intelligence as a multifaceted skill that enables adaptive functioning and efficient self-regulation. Our findings support recent research on the role of integrative emotional intelligence (EI) in preventing behavioral addictions by showing that teens with higher EI have less difficulty managing their time and encounter fewer disruptions in socially meaningful relationships (Schimmenti et al., 2014).

It should be mentioned that the system-forming core in both gender groups is self-motivation, which is the ability to control one's behavior by managing an emotional state. Given Goleman's (2007) research on emotional intelligence, which highlights the significance of self-motivation as a crucial element of self-regulation, this conclusion is very noteworthy. By offering empirical evidence for this relationship in the context of preventing Internet addiction, our conclusion that improving emotion regulation skills can increase self-motivation adds to the body of knowledge already in existence. Teenagers may thus be better able to control their conduct and identify the warning signs of Internet addiction, which would aid in the execution of focused psychological education initiatives.

A number of gaps in the literature have been addressed by our research. Gender-specific mechanisms have not received much attention, despite prior studies establishing broad connections between emotional intelligence and Internet addiction (Sechi et al., 2021). Our results show different trends for boys and girls, especially in relation to the function of empathy and emotion regulation, highlighting the need for more sophisticated methods to comprehend the emergence of Internet addiction (Li et al., 2016).

The study describes a number of significant aspects of the problem of Internet addiction behavior of adolescents, such as the relationship of addictive behavior with indicators of emotional intelligence; highlighted gender differences in the characteristics of emotional intelligence and Internet addiction; features the relationship and the possible impact of the development of emotional intelligence on the formation of Internet addiction.

The data analysis results allow us to draw the conclusion that measures of Internet addiction are influenced by indicators of emotional intelligence, including Awareness and understanding of one's emotions, Arbitrariness in managing emotional states, Self-motivation, and Empathy and the ability to influence the emotional state of people. It is crucial to consider the gender-specific differences in emotional intelligence indicators and how they relate to the traits of adolescent Internet addiction.

With the help of programs to prevent and treat Internet addiction differently for boys and girls, the analysis of data revealed variances in the link between these indicators. In certain ways, the findings of this study enable this within the context of schoolchildren's psychological and educational assistance.

In the correlation pleiades of both groups – boys and girls – the Self-motivation parameter, which is a core of the system, draws particular research interest. This mechanism is at the forefront of the overall system of management and control over the development of dependent forms of behavior, as well as a well-developed, clearly perceived ability of adolescents to create, maintain, and implement their own motives for activities aimed at satisfying intellectual, emotional, and social needs.

This study fills a knowledge gap regarding the association between emotional intelligence and the indicators of adolescents' Internet addiction and suggests a potential role for the growth of emotional intelligence in the development of dependence. The data also provide a comprehensive picture of the characteristics of the development of Internet addiction in adolescents.

Conclusion

This study enables us to assess the importance of emotional intelligence as a psychological mechanism in teenagers' Internet addiction development. These results can be used to predict potential aberrations in both adolescents' emotional development and the most likely types of Internet addiction.

Thus, the main goals of the research were effectively met. In order to provide a baseline knowledge of the prevalence of the condition, the teenage sample's emotional intelligence and Internet addiction levels were objectively evaluated. Second, a network of noteworthy connections between particular EI elements and IA symptoms was found using Spearman correlation analysis. Most significantly, data demonstrated how important self-motivation and emotion control are as fundamental elements that are adversely linked to compulsive online activities, indicating that they may serve as psychological barriers. Thirdly, significant gender differences in the expression of both domains were found. While boys' Internet addiction was more closely associated with a wider spectrum of emotional intelligence deficiencies, girls showed greater scores on obsessive and withdrawal symptoms, according to the study. As a result, the results demonstrate that gender significantly mediates the nature of the association between emotional intelligence and Internet addiction, which is not universal. This emphasizes how important it is to create specialized educational and psychological intervention plans that take these unique vulnerability profiles into consideration.

The research findings can be applied to the development of special elective courses for schoolchildren, training and corrective measures for adolescents to improve socio-psychological adaptation of students, and work on the psychological and pedagogical support of adolescents' socialization, in the prevention of behavioral deviations and various emotional deviations.

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