Internet Addiction as One of the Main Types of Addiction in Modern High-School Students

Abstract. Nowadays, the Internet is a tool that is becoming imperative in everyday life. The pandemic in the modern world has exacerbated the problem of Internet addiction, creating the conditions for humanity to stay longer online. Since the majority of users are adolescents and young people, they form the main risk group, which is prone to Internet addiction. The purpose of the study was to explore the features of Internet addiction in high school students in modern Ukrainian society. The study included a comprehensive approach, which provided a combination of the following methods: theoretical (analysis, synthesis, generalisation, and systematisation of conceptual provisions on the problem under study); empirical (testing, in particular the method: “Chen Internet Addiction Scale” (CIAS adapted by L. Maligin, K. Feklisov); method of statistical processing. The paper reveals the problem of Internet addiction in high school students in modern conditions, the problems that arise in connection with such dependence, and considers the symptoms of Internet addiction and the reasons for its development. The study discusses the results of the investigation of Internet addiction in high school students, and also reveals differences in components of Internet addiction in adolescents with different levels of addiction. The findings show that most high-school students are prone to Internet addiction, which necessitates timely primary prevention of Internet addiction, starting in adolescence. In addition, a comparative analysis found that subjects with persistent Internet-dependent behaviour were more likely to have compulsive symptoms, withdrawal symptoms, tolerance symptoms, intrapersonal and health problems, time management problems, and stress.

Keywords: Internet addiction, high-school students’ addiction, features of Internet addiction, early adolescence

INTRODUCTION

Most researchers in modern society are attracted to psychological phenomena associated with the informatisation of the main spheres of human activity, which includes the phenomenon of pathological use of computer technology, in particular Internet resources. The Internet resource, which originally served as a powerful tool in the processing and exchange of information, now more often determines the root cause of Internet addiction. Today, there are different standpoints on the problem of Internet addiction or cyber addiction, often ambiguous and controversial. V. Kolesov claims that the world is gradually going crazy, plunging into virtual reality and losing touch with the real one [1]. I. Malyshev suggests that there is nothing to be afraid of, since dependence on the Internet is as illusory and unattainable as cyberspace [2]. K. Yakovleva is convinced that people who are overly interested in virtual space are beginning to give it a greater advantage over real life [3].

N. Andrushchenko and E. Klimentovskaya recall that Internet addiction began to be actively studied by foreign psychological schools since the 1990s. The very concept of “Internet addiction” appeared in 1996, which was introduced into scientific use by I. Goldberg to describe an unnecessarily long stay on the Internet [4]. Certain aspects of Internet addiction have been studied to varying degrees by sociologists, psychologists, teachers, and psychiatrists. Among foreign studies devoted to the phenomenon of “Internet addiction”, a special place is occupied by the works of M. Griffiths [5], I. Goldberg [6], R. Davis [7], K. Young [8] et al. They proposed definitions of Internet addiction, criteria, and evaluation tools. Their works accurately determine
the current state and prospects for the development of the problem. Together with the above-mentioned foreign researchers D. Greenfield [9], M. Orzack [10], C. Chou [11] (in Asia), O. Egger and M. Rauterberg [12] (in Europe) were the first to investigate the phenomenon of Internet addiction, mainly they developed diagnostic criteria and recommendations for the treatment of Internet addiction.

The most accurate and meaningful description of “problematic Internet use” is presented in the cognitive behavioural model of pathological Internet use by R. Davis. The researcher saw something more in pathological use than behavioural addiction, including special patterns of cognition and behaviour associated with the Internet, which cause negative life consequences [13]. Notably, according to I. Ershova, T. Chudinov, and M. Permyakova, the study of the phenomenon of Internet addiction in Russian psychology began later due to the lag in computerisation of society [14]. N. Potemkina [15] summarises the definition of the concept of "Internet addiction" by researchers: “obsessive desire to access the Internet while on-line, and inability to log out of the network while on-line according to I. Goldberg, pathological use of the Internet according to K. Young”.

The purpose of the study is to investigate the features of Internet addiction in high school students in modern Ukrainian society.

Objectives of the study:
1) summarise theoretical data on understanding the phenomenon of “Internet addiction” and its classification;
2) identify the features of manifestations of Internet addiction of the studied high school students with different levels of Internet addiction;
3) systematise and summarise the processed material, formulate conclusions.

LITERATURE REVIEW

The study by A. Lozhechkina and O. Zvada [16] indicates that virtual addiction refers to a compulsive desire to access the Internet while off-line, and the inability to log out of the network while on-line. The researchers also highlight the opinion of S. Korennaya, according to which the basis for the development of Internet addiction is a violation of the mechanisms of perception of the world and information processing. In accordance with this, the level of development of computer technology and software creates the illusion of reality, which a person plunges into when performing activities on the Internet. A. Egorov emphasises the main properties of the Internet identified by V. Loskutova, which turn it into an addictive agent: the transpersonal nature of interpersonal relationships in the network, the possibility of using the Internet to fulfill their fantasies or desires, the possibility of anonymous social interactions, unlimited access to information and voyeuristic aspect [17].

Internet addiction involves the following symptoms proposed by M. Orzack, the list of which was highlighted by O. Stakhova and Yu. Bliznyuk. Physical and psychological symptoms consist in constant “forgetting” to eat, reduced sleep duration, ignoring and neglecting own health and personal hygiene, increased use of “fast” food, experiencing frustration and despair, reducing the circle of friends and relatives due to Internet addiction, unwillingness to react and perceive criticism of this lifestyle from relatives or others [18].

M. Griffiths [19] identified six main signs of Internet addiction: 1) dominance of Internet activity for a person; 2) mood changes during Internet activity; 3) tolerance (increased time spent on the Internet); 4) withdrawal syndrome (effects that occur due to the cessation of Internet use, for example, irritability, flightiness, etc.); 5) conflict, which is expressed in interpersonal and intrapersonal contradictions; 6) relapse or return to network activity after certain abstinence. According to M. Griffiths, the presence of all six signs in a person may indicate addiction. In addition, Chinese researchers J.P.-S. Chang and C.-C. Hung proposed a neuropsychological model of Internet addiction development. The group of Internet addicts includes those who meet three criteria: 1) it is easier for a person to self-actualise via the Internet than in real life; 2) a person experiences dysphoria or depression, being deprived of the opportunity to use the Internet; 3) a person hides from family members how much time they spend on the Internet [20].

Researchers L. Yurieva and T. Bolbot identified four stages of development of computer addiction: 1) the stage without addiction development; 2) the stage of passion; 3) the stage of risk of computer addiction development; 4) the stage of computer addiction presence.

According to the above, researchers give the following classification of Internet users: 1) users who carry out activities at the computer exclusively of an instrumental nature, performing a clearly defined specific task; 2) users who experience positive strong emotions and pleasure from activities at the computer, which has situational nature; 3) users who have a systematic need for computer activities. If there is no access to the Internet, a person does everything possible to eliminate the obstacles that have arisen. In this category of people, the risk of Internet addiction increases, which in most cases is the first stage of addiction development; 4) users with an already formed computer addiction, in which the need for a constant stay at the computer occupies a leading place in the hierarchy of needs. Besides, there are significant changes in a personality, signs of maladaptation are expressed [21].

A. Stakhova and N. Bliznyuk note that the onset of youth is associated with many pronounced changes in physiology, thoughts, emotions, and social life. This gives the period of youth a complex and special significance. Young people make up exactly the age category that is prone to being included in the risk group. Ultimately, adolescents are prone to Internet addiction. Researchers also identify important factors that cause dependence on the Internet and which consist in social (difficulties and maladaptation associated with society, team, family) and psychological (problems associated with finding a common language with peers) reasons [18].

Considering that, in addition to young men, teenagers are also subject to Internet addiction, N. Grebenyuk emphasises
that people aged 11-15 years show, first of all, the need to communicate with peers. Despite the rapid development of new forms of communication with each other through the Internet, this becomes one of the main prerequisites for the development of the phenomenon under study. In addition, a variety of youthful complexes, difficulties associated with communication, individual typological properties and character traits also provoke the process of moving away from reality to the virtual world [22]. There is an opposite point of view of N. Maksimova, who believes that the passion for numerous computer technologies for modern youth is most likely the norm, but not a deviation from it. The researcher notes that using Internet resources gives users unlimited opportunities to expand their horizons, master new technologies, and find like-minded friends. For people with a tendency to Internet addiction, the Internet is becoming a world with no need to look for solutions to problems, take responsibility for own actions, and grow up [23].

According to A. Zhichkina, the specificity of young people's activities in virtual reality can lead to an inadequate perception of real contacts and lead to the deformation of interpersonal relationships. In virtual communication, due to the physical lack of representation of partners in relation to communication with each other, a number of communication barriers, including the communicative competence of the individual, its nonverbal part, lose their significance [24]. K. Young cites statistics according to which 91% of Internet addicts actively use Internet network services related to communication. In addition, the researcher identifies other reasons for the “entry” of teenagers and young men into the virtual space: 1) the desire of the individual to decide on his place in life, giving an answer to the question “Who am I?”; “Why am I doing this?”; 2) the desire of a person to get acquainted with various aspects of intimacy, especially with the opposite sex, if it causes difficulties in the real world; 3) the desire to separate from parents. In the case when a young man cannot completely separate from his parents, the Internet provides him with the opportunity to feel independent; 4) since adolescence is considered a difficult period of life, the young man seeks to get rid of frustration caused by constant external pressure in the Internet environment free from responsibility [25]. According to A. Voyskunsky, the Internet for young men becomes the environment where the need for communication is met, which is difficult in real life. The motive for communicating on the Internet is to find new acquaintances with like-minded people, make friends, meet the need for emotional support and obscene communication [26; 27].

A. Skubchenko [28] notes that according to L. Obukhova, teenagers and young men, being on the Internet, are more likely to “search” than “think” or “teach”. The researcher notes the emergence of the illusion of impunity and permissiveness on the Internet in people of early adolescence as psychological aspects of the development of Internet addiction and the desire of people of early adolescence to solve or avoid many problems and difficulties in everyday life. This entails the possibility of a violation of human rights, which serves as a trap and, as a result, serious consequences in reality, that is, a decrease in the level of morality. The high probability of forming computer and Internet addiction in young men is also increasing due to the actualisation of the need for spatial and territorial autonomy, inviolability of their personal space. According to B. Mandel, one of the factors that provoke a person to replace real life with virtual space is a sense of insight into their own boundaries, which is supported by the ambivalent position of the mother about separation and maturation of a person of early adolescence [29].

I. Hasanova summarises that the Internet has become a powerful environmental factor, under the influence of which the personality of modern young people is formed. Adolescents and young men, due to the age-related immaturity of the individual, are most vulnerable to various kinds of negative influences. The negative consequences of excessive Internet addiction cover all areas of their lives, there are difficulties in educational and professional activities, problems communicating with peers, conflicts in the family, etc. [30]

**MATERIALS AND METHODS**

Theoretical analysis of the problem of Internet addiction, as one of the main types of addiction of modern high school students, proved their significance for the science and practice of an educational institution. In accordance with this, the task was to investigate the features of the manifestation of Internet addiction in early adolescents.

Based on the data obtained as a result of theoretical analysis, an empirical research programme was compiled to investigate the features of Internet addiction in early adolescence. An empirical study of high school students was conducted during October-November 2021 on the premises of the Chernivtsi multidisciplinary lyceum No. 11 “Prestige” in Chernivtsi. The survey involved students in grades 10-11 – 50 respondents aged 14-16 years. The gender differentiation is not indicated, because the task of the survey was not to investigate gender differences in the relationship between Internet addiction and social intelligence in early adolescence, so the sample was formed by randomisation.

The study was conducted in several stages:

- at the first stage – preparatory – the analysis of Ukrainian and foreign studies on the chosen problem was carried out; the scholarly apparatus of research was formulated; the concept of “Internet addiction” was substantiated; the classification and risk factors for Internet addiction in high school students were studied and generalised;
- at the second stage – ascertaining – a programme of empirical research was planned and diagnostic support was substantiated, which allowed investigating the features of Internet addiction in high school students; an empirical study was conducted, the obtained empirical data was processed, and an assumption was formulated about the need for timely primary prevention of Internet addiction, starting from adolescence.
- at the third stage – final – the generalisation of empirical data and the formulation of conclusions was carried out.
The applied tasks of the second stage included the survey of the following diagnostic indicators: the level of severity of Internet addiction in high school students and a separate analysis of the levels of severity of Internet addiction symptoms.

As the main methodology aimed at studying the level of Internet addiction in high school students, the method "Internet Addiction Scale" by S. Chen was used in the adaptation of V. Malygin and K. Feklisov with the statistical study [31]. The test allows simultaneously measuring specific symptoms of addiction, including: tolerance, withdrawal symptoms, compulsivity, and at the same time exclusively psychological aspects, such as: the ability to manage own time and the presence of intra-personal problems. A special advantage of the Chen test is its versatility, the ability to measure a single continuum of behaviour associated with the Internet resources from several points [32].

The “Chen Internet Addiction Scale” (CIAS scale) consists of 26 questions and includes 5 assessment scales:
1) scale of compulsive symptoms;
2) scale of withdrawal symptoms;
3) scale of tolerance;
4) scale of intrapersonal and health-related problems;
5) scale of time management [32].

In addition to the scale assessment, two types of supra-scale criteria are proposed – integral (key) symptoms of Internet addiction itself, including the first three scales and the criterion of negative consequences of Internet use (the last two scales). The sum of all scales or the total score is an integral indicator – a general indicator of the presence of Internet-dependent behaviour. Based on the results of primary analysis and adaptation, researchers V. Malygin and K. Feklisov propose the following thresholds for assessing Internet-addictive behaviour when using the Chen scale. From 27 to 42 – minimal risk of Internet addiction, from 43 to 64 – predisposition to Internet addiction, from 65 and above – a pronounced and persistent pattern of Internet addiction behaviour [31].

**RESULTS AND DISCUSSION**

Data obtained using the “Internet Addiction Scale” method by S. Chen was illustrated on Figure 1.

![Figure 1. Overall level of Internet addiction in high school students (in %)](image)

According to the results of the methodology, 54% of young men are more or less exposed to the negative influence of the Internet, they are at risk. The subjects show an average level of Internet addiction. This is the so-called prosocial group, a group of unstable Internet users who, under unfavourable circumstances, can move from a group prone to Internet addiction to a group dependent on the Internet. Such students spend much more time on the Internet and at the same time forget about their household chores and responsibilities. Usually, the interaction of a young man with the Internet is reduced to finding entertainment, games, the use of which takes quite a lot of free time. This level of predisposition to Internet addiction can be called the level of the so-called “user”. Here, the user cannot take control of the time spent on the network, there are often problems with using the Internet. In relation to high school students with a tendency to Internet addiction, it is necessary to determine the complex impact of these problems on their lives to implement further therapeutic measures with corrective goals to prevent the transition to a high level of Internet addiction.

The remaining 32% of young men were not prone to Internet addiction. Respondents with a low level of Internet addiction are ordinary Internet users, who can sometimes spend a little more time on the Internet, but at the same time control themselves. High school students in this group often turn to the network mainly to prepare for school classes, looking for the necessary information, for example, to develop presentations, write messages, essays, etc. 14% of high school students from the sample already have a pronounced persistent pattern of Internet-dependent behaviour. For representatives of a high level of addiction using the Internet adds significant problems in life. Level of Internet addiction corresponds to the level of an “advanced user”. The user does not know how or probably does not want to control their time on the Internet. A person is constantly in a state of unconscious desire to access the Internet.

The main signs at the stage of development of Internet addiction can be observed such emotional and volitional disorders: loss of a sense of time, fixation on an addictive agent, which is accompanied by an emotional rise (euphoria, mental relaxation, a feeling of “take-off”, carelessness, freedom, and increased imagination), anticipation, fantasies and dreams of being on the Internet, receiving positive experiences, emotions from Internet activities, a feeling of psychoemotional tension outside of the Internet. High school
students in this group are characterised by Internet addiction, which negatively affects their mental health. They can be described as young men with low emotional stability and poor adaptation. All this manifests itself in a dramatically changing mood, feelings of fear, depression, a sense of routine and monotony of life conditioned by the loss of the Internet. Such high school students are more sluggish, passive, inert, not inclined to mobilise efforts, and more aggressive. Their self-esteem is relatively lower compared to schoolchildren at the stage of interest in the Internet, because they experience a greater dependence on the imposed communication style.

Such results may be conditioned by the fact that, firstly, the modern educational system actively integrates the use of Internet resources during homework and in preparation for lessons. Secondly, the Internet has become the main platform for establishing friendly contacts or intimate and personal communication, as it is much easier for high school students to interact in a secure Internet environment than in direct communication.

During the comparison of the results of individual scales of the methodology and the overall level of Internet dependence, there is a discrepancy in the distribution of data. Thus, for example, 10-15% of high school students who showed medium and high levels of Internet addiction have a low level on the scales associated with individual manifestations of the negative impact of the Internet. This means that high school students are not aware of the negative consequences of excessive use of the Internet network, which indicates the need to inform students about the harm and impact of the Internet.

Based on the results of the study by V. Berezina, A. Sharov [33] it was also found that the vast majority of high school students, i.e., 58% of students, show a tendency to Internet-dependent behaviour, which can mean the desire to spend as much time as possible on the Internet. 30% of respondents were diagnosed with a minimal predisposition to Internet addiction, and 12% exhibit persistent Internet-dependent behaviour. The findings contradict the available data of researchers in their study on the greater severity of compulsive symptoms in high school students, namely, the inability to overcome the desire to access the Internet, a feeling of discomfort if they are forced to stop using the Internet for an indefinite period of time.

Numerous studies, including by V. Kolesnikov, Yu. Melnik, L. Teplova [34], indicate the existence of age and gender differences in the use of the Internet service by young men and women. However, the researchers predict that with the mass use of Internet resources in recent years, the trend may decrease. In fact, the study confirmed the expected differences between different age groups surveyed and refuted the assumption that there are differences in Internet use between boys and girls.

When analysing age differences, it is necessary to consider the fact that most studies in this area cover a relatively narrow age range: adolescence, puberty, and early adulthood. Researchers S. Karacic and S. Oreskovic [35] as a result of an empirical study, found that the greatest risk of developing Internet addiction occurs at 15-16 years. This once again shows that excessive and active use of the Internet and its

![Figure 2. Distribution of respondents by severity levels of Internet addiction symptoms (in %)](image-url)
services is typical just for adolescents, and with concomitant personal and social factors, it can lead to addiction.

Therefore, all of the above clearly confirms the urgent need for pedagogical and psychological prevention of Internet addiction, represented by a complex process aimed at informing schoolchildren about the mechanisms of Internet influence on a person, the causes of development, symptoms, and methods of manifestation of such addiction. Ultimately, knowledge about Internet addiction is necessary for high school students, they need to know about the consequences of excessive Internet use to ensure their own safety.

**CONCLUSIONS**

Internet addiction poses a threat to a person’s physical and mental health, which forces researchers to investigate the factors that contribute to its occurrence and functioning. The main factors that provoke addiction to the Internet often include maladaptation of a person in society, problems associated with finding a common language with peers, violations in the functioning of the family, fear of starting an independent life. The Internet network provides an opportunity for a person to escape from the real world to the world that they can create themselves.

Theoretical analysis of research papers has shown that the study of the problem of psychological dependence on the Internet, as a behavioural addiction, becomes quite an acute issue for people of early adolescence, since just like adolescents, young men are the main users of the Internet network. By analysing the results of an empirical study, it was found that the majority of high school students are characterised by a tendency to Internet addiction. This is manifested in the general indicator and integral indicators of the scales of S. Chen’s methodology. Therefore, it is possible to emphasise the need for timely primary prevention of Internet addiction, starting from adolescence.

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**Internet-addiction як один із основних видів залежності сучасних старшокласників**

**Анотація.** Мережа Інтернет сьогодні є тим інструментом, який набуває імперативного значення у повсякденному житті. Пандемія у сучасному світі ще більше поглибила проблему інтернет-залежності, створюючи людству умови для тривалого перебування онлайн. Оскільки основну частину користувачів становлять підлітки та юнаки, то вони формують основну групу ризику, яка схильна до інтернет-адикції. Метою дослідження стало вивчення особливостей інтернет-залежності у старшокласників у сучасних умовах розвитку українського суспільства. У процесі дослідження реалізувався комплексний підхід, який передбачав поєднання таких методів: теоретичні (аналіз, синтез, узагальнення і систематизація концептуальних положень із досліджуваної проблеми); емпіричні (тестування, зокрема методика: тест-опитувальник «Шкала інтернет-залежності С. Чена» (CIAS в адаптації Л. Малигіна, К. Феклісова); метод статистичного опрацювання. У статті розглянуто проблему інтернет-адикції у сучасних умовах на прикладі старшокласників і наслідків, що виникають у зв'язку з такою залежністю; визначено симптоми інтернет-залежності та причини її розвитку. Виявлено відмінності у компонентах інтернет-залежності у юнаків з різним рівнем адикції. Згідно з результатами дослідження визначено, що більшість старшокласників характеризується схильністю до інтернет-залежності, що провокує необхідність своєчасної першості профілактики інтернет-залежності, починати з підліткового віку. Також унаслідок порівняльного аналізу виявлено, що у досліджуваних з іншими інтернет-залежною поведінкою переважно виражені компульсивні симптоми, симптоми відміни, симптоми толерантності, внутрішньособистісні проблеми та проблеми з здоров'ям, проблеми з керуванням часом і напруженість.

**Ключові слова:** інтернет-залежність, залежність старшокласників, особливості інтернет-залежної поведінки, період ранньої юності.

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