METHODOLOGY OF DEVELOPMENT AND APPLICATION OF INDICATOR MODEL OF RESEARCH: RISKS OF INTERNET ADDICTION DISORDER IN ADOLESCENTS[1]

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Abstract: *The relevance of the research lies in the fact that the World Wide Web actively captures the entire global system of socio-economic and political relations. The number of network users is growing dynamically. The high-end population segments are youth and adolescents; nowadays they manifest both positive and negative trends in their development. One of such trends is the internet addiction disorder, which has been studied actively by the scientific community in recent years. However, the diagnostics of adolescent behavior in networks is studied insufficiently. Therefore, the authors set the task of developing a model that allows the detection of risks of the emergence and further growth of Internet addiction in adolescence. This is the indicator model, which includes a set of indicators (indexes) of a predominantly social nature. The paper also gives a brief overview of the methods of studying non-chemical dependencies and substantiates the approach to the formation of an indicator model for measuring the risks of the emergence of Internet addiction, developed by the Department of Sociology and Social Technologies of the Cherepovets State University. The paper presents the results of a sociological study conducted based on the developed model, which demonstrate the heuristic possibilities of the methodology. The materials of the paper are of significant interest to sociologists, psychologists, teachers and other professionals of humanitarian knowledge.*

Keywords: *Internet Addiction Disorder, Indicator Model, Addiction, Deviant Behavior, Adolescents.*

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INTRODUCTION

The modern world has changed quickly over the years. The social space and time are still actively transforming. Taking this into consideration, a select number of conclusions can be drawn: Web technologies have become a common way of communication; The Internet builds a special communicative model of interaction between different age groups and individuals; This change in communicative forms affects the content of communication, including among children and adolescents; The Internet, as a worldwide information system that generates cyberspace or a special reality, gives rise to a cyber-culture with its own concepts, values, ways of thinking and language; The ambiguity of the influence of social networks on youth attracts the close interest of professionals; The structure of society, standards of behavior, mentality, values and way of life are also changing. According to Mediascope [27], the monthly Internet audience in October 2016 - March 2017 reached 87 million people aged 12 to 64, which was 71% of the total population of Russia (as the report indicates, it is intended for the population of Russia aged 12 to 64 - bizhit.ru). Currently, there is a decrease in the age threshold of Internet users, and the most active users are teenagers. Breakdowns show that on average only a third of Russian adults are Internet users, while among schoolchildren this figure reaches almost 90%. This is due to the appearance of network portals such as Odnoklassniki (OK.ru), VK (VKontakte), and Facebook. The Internet provides children and adolescents with immense cognitive abilities, and their learning and flexibility allows them to get used to the Internet and 'feel at home' there far quicker than adults. With the help of the Web, students acquire knowledge and social skills that will assist them soon to become successful citizens of the digital society. So, within the framework of the research under the grant implementation program of the project 'Indicator model of the study of non-chemical dependencies in adolescents (on the example of research in the city of Cherepovets)', the question 'When were you bought / given a computer?' was asked. At least 70% of Cherepovets students responded that it was a long time ago, many specifying that it occurred around the time they were in the first grade. Note that the Cherepovets schoolchildren generally do not differ in any way from their peers. The city of Cherepovets, with a population of more than 360,000 people, is the industrial center of the Vologda region. Additionally, it is one of the most developed cities of the northwest region of Russia. It has modern infrastructure that allows young people to actively engage in informational interaction. The Internet is in high demand, and it is widespread in the personal life of a modern teenager. For example, schoolchildren and students actively use Internet resources for entertainment and communication, as well as educational purposes.

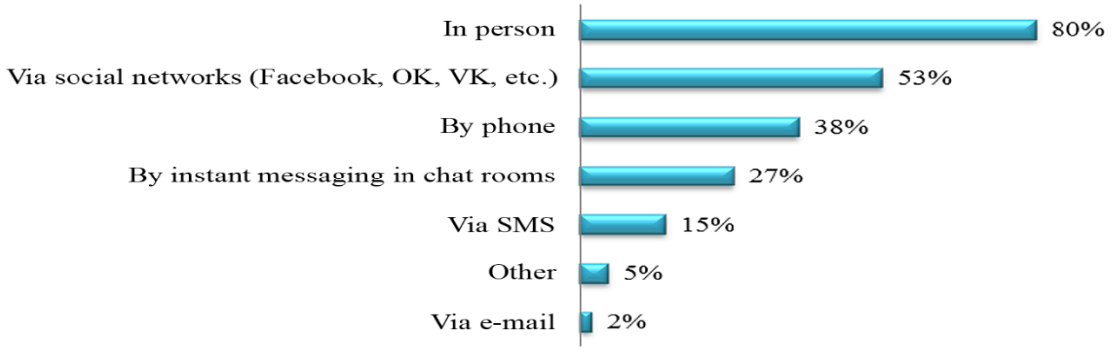

Figure 1. Distribution of answers to the question: 'Which way do you most of all / usually communicate with your friends?' (in %)

However, there are many disturbing and sometimes hidden manifestations behind the apparent attractiveness of the Internet. The ambivalent influence of the new information and communication space causes a serious concern about the emergence of a new social phenomenon: Internet addiction. The problem of Internet addiction as a type of non-chemical dependence has become one of utmost relevance in the modern information society. This problem was discussed by representatives of the Russian scientific community. Among these discussions, the most interesting and grounded conclusions were made by O.V. Zaretskaya, E.V. Vasilyeva, A.Yu. Egorov, T.G. Svetlichnaya, M.G. Dyachkova, and O.A. Kharkova [1, 2, 4, 11]. Similar concern for the problem of Internet addiction and the involvement of people of different ages, including adolescents, into the new virtual space is expressed by foreign researchers, such as A. Armstrong, C. Casement, J. Czincz, R. Hechanova, W.W. Cheng, M.D. Griffiths et al [14, 16, 17, 18]. The development of new technologies, widespread digitalization and the mastering of computer literacy (as the main element of the education of schoolchildren) along with the clear advantages brought to the adolescent environment comes with the negative consequence of computer and Internet addiction in the same package. Modern research and studies of Internet users states that Internet addiction is an objectively existing problem that is a very thorough part of the manifestation of non-chemical dependencies. Therefore, before all professionals who are practically confronted with this phenomenon in their occupational activities (psychologists, psychiatrists, drug therapists, teachers), is the question of finding a solution. In this regard, one of the most effective ways of solving this problem is assessing the degree of influence of the Internet on an adolescent's personality and diagnosing personal changes caused by excessive use of the Internet. In fact, the most important aspect of psychological growth in adolescence is the emergence of self-identity. A young person often puts themselves in the situation of an adult in the system of real relationships. According to T.G. Svetlichnaya and S.V. Fadeeva [11, 12], addiction to the Internet contributes to the formation of a number of psychological problems in adolescents such as conflicted behavior, chronic depression, preference of virtual life over it's real counterpart, difficulty in adaptation to the always-changing society around them, the loss of ability to control their computer use and the emergence of a feeling of discomfort when there is no opportunity to get online. Because of the Internet, a teenager prefers to 'Google' the answer to something instead of trying to think and study. More than half of teenagers cannot 'survive' without the Internet for a considerably long time. Moreover, 40% of schoolchildren say that they simply have no direction in their lives without the Internet. This was confidently stated by the schoolchildren at the age of 11. By the time, their schooling was over, i.e. by reaching 16-17, more than two-thirds of high school students would also agree with that.

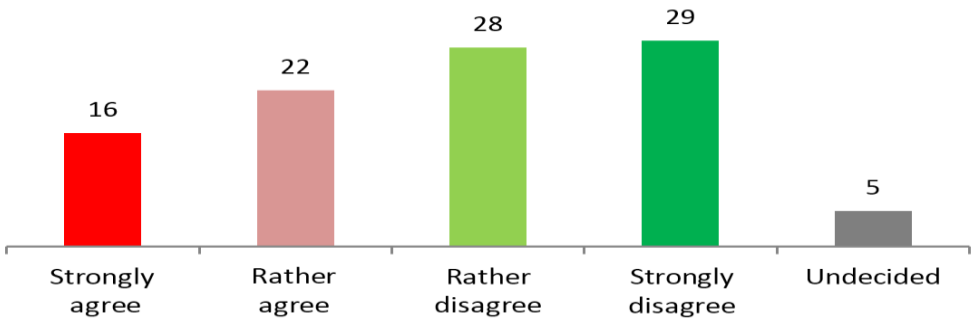

Figure 2. Distribution of answers to the question: 'To what extent would you agree or disagree with such statement: I cannot imagine life without the Internet?' (in %) [6]

In addition, another problem is that the environment of parents and educators does not yet contain a general awareness of the consequences of Internet addiction in children. Specialized professionals have no proven methods for identifying adolescents at risk of non-chemical addictions. To date, the problem has been investigated only in the medical and psychological aspects, albeit in a limited range. It should be noted, however, that when it comes to medical intervention, the problem has typically already reached an extreme state. The task of sociologists and educators is to create and apply such a technique that would identify children at risk of Internet addiction and to prevent the problem from growing when there is still no need for specialized treatment. The idea of 'Internet Addictive Disorder' was first suggested by the American researcher Dr. Ivan K. Goldberg when he was describing the irresistible urge to use the Internet as 'having a detrimental effect on the everyday, educational, social and psychological spheres of activity' [14, P.112]. Goldberg believed that an effect of Internet addiction is behavior with a lower level of self-control, threatening to displace the real life of a person and replace it with a virtual one. In his opinion, those people who have any kind of psychological problems are immersed in an unreal world of dreams and fantasies with special ease. The scientist suggested a system of symptoms, according to which one can state the presence of Internet addiction. To the psychological symptoms, Goldberg attributed the following: well-being or euphoria while using the computer; failure to stop; an increase in screen time, neglect of family and friends, feeling of emptiness, depression and aggravation while being 'offline'; dishonesty to employers and family members about own condition and activities; and problems with work or study. He also denoted some physical symptoms such as carpal tunnel syndrome (tunnel lesion of the nerve trunk of the hand, associated with prolonged muscle strain); dry eyes, migraine headaches, back pain; occasional food intake and skipping meals; neglect of personal hygiene; disorders and / or changes in sleep patterns.

Non-chemical dependence, including the Internet addiction disorder, is most often treated as an addiction [1]. Most academics are inclined to the opinion that addictive behavior is a type of deviant behavior. In this case, a person develops the desire to escape from reality by artificially changing the mental state by taking certain substances or by constantly fixing attention on certain types of activity in order to develop and maintain intense emotions [12]. The presented methods for identifying adolescents with this type of dependence, as well as their critical analysis, are reflected in the scientific literature. Psychologists tend to identify the corresponding psychological component of the personality, which is a favorable environment for the emergence of dependencies. It is also believed that a certain temper can be a risk factor for addiction. Thus, A.E. Lichko emphasized that 'among personal qualities one can name such as mood swings, a tendency to risk behavior and impatience, extreme views, actions and demands, dependence on the opinions of other people and external circumstances, the desire to avoid responsibility, egocentrism and infantilism' [11, P.38]. In this context, the important risk factors are the following: failure to properly assess personal capabilities, undeveloped communication skills, external locus-control, failure to define and constructively express emotions and feelings, poor level of critical thinking, weak stress-resistance and, consequently, undeveloped skills of relieving psycho-emotional stress.

Vladimir Mendelevich comprehends addiction 'a kind of deviant behavior characterized by an irresistible subordination of one's personal interests to the interests of another person or group; excessive and lengthy attention arresting on certain types of activity or subjects (fetishes) becoming overvalued, diminishing or violating the ability to control involvement in such activity; and also the failure of exercising independency and

freedom in the choice of behavior' [10]. According to Mendelevich, the basis for the formation of addictive behavior is the hedonistic motivation that develops in the patho-characterological and psychopathological personality types. The signs of increased tolerance, disregard for alternative interests, course of addictive behavior despite its obvious harmful consequences and withdrawal syndrome are found in its structure [10]. Mike Cardwell relates the addiction to the varieties of personality disorder of an individual, describing such individual as deficient and helpless, unable to independently take even the simplest solutions [8]. There is a school of thought known as the Chen Internet Addiction Scale, according to which Internet addiction has the same signs as chemical addiction. The Chen Addiction Scale includes the scale of compulsive symptoms, the scale of withdrawal symptoms, the scale of tolerance, the scale of intrapersonal and health problems, and time management scale. Noteworthy is that the increase in screen time and corresponding decrease of the effect of the computer use are comprehended as tolerance in the medical context [2]. More objective and sensitive appears the 'The method of screening diagnostics of the computer dependence' test, developed by Lyudmila Yuryeva and Tatyana Bolbot [13]. It consists of eleven questions and answers that are evaluated on a four-point scale. The test is convenient and easy to use since it allows the determining of not only the presence of dependence, but also the particular risk group. The test approach is based on such criteria and personal characteristics as emotional state, volitional powers, consumer-oriented aspect, ability to control behavior and physical and mental impacts on a computer user.

With a fairly wide presentation of the methods and tests for detecting non-chemical dependence, many authors acknowledge that at present time the factors, mechanisms and consequences of the formation of non-chemical dependence in adolescents (particularly the ones blocking the mechanisms of development of socially significant personality) are poorly known [3]. Thus, the object of research is a model for studying the risk of the emergence of Internet addiction in adolescents based on the application of sociological approaches and techniques. Under the addiction the authors comprehend the form of deviant behavior leading to a pronounced urge to spend as much time in the Internet space, using various electronic devices such as personal or tablet computer, smartphone or any other gadget. The aim of the study is the development of an indicator model allowing revealing the risks levels of the emergence of Internet addiction in adolescents aged 11-15. At the same time, the achievement of such goal implies solving a series of tasks: 1. Consideration of systems of indicators for the study of Internet addiction (with respect to the age characteristics of adolescents), proposed by scientists in the field of medicine, psychology and pedagogy; 2. Development and justification of a system of indicators identifying behavioral risk factors for the emergence and formation of Internet addiction in adolescents, and subsequent model validation; 3. Identification of the most pronounced risks in the behavior of teenage schoolchildren (based on the application of the proposed methodology treating such risks as able to lead to dependence), and arrangement into groups according to their degree of severity.

METHODOLOGY AND METHODS OF RESEARCH

It is the authors' opinion that the sociological approach should be utilized along with the pedagogical and medical approaches; that would allow not only to identify the children of the risk group, but also to assess the extent of the occurrence of the phenomenon, as well as the social determinants of Internet addiction. The research team of the Department of Sociology and Social Technologies of the Cherepovets State

University developed an indicator model and a methodology for identifying the risk level of non-chemical dependence.

Before proceeding to the direct description, it is essential to explain what is comprehended under the indicator model, and why this exploratory approach is applicable to the study of the risk of dependence in 11-15-year old. By treating the notion of the indicator model, authors define it as a set of several indexes formed on a certain methodological basis and allowing to obtain information about the phenomenon and the process being studied in systematized form; as well as to reveal the interrelations between the constituent elements. The structure of the indicator model may include the groups of indicators that allow measuring both the cognitive component and its structural constituent. Authors opine that the index method is the most successful for the complex evaluation, since it allows conducting analysis (based on the values obtained) of the most important indicators for the further assessment of the formation and manifestation of addiction in adolescents. And since the number of indicators used will be quite significant, and some of them will correlate with each other, it is necessary to systematize this analysis using the principal component method, transforming the set of correlated variables into several non-correlated variables. On the one hand, this would allow identifying the factors behind these data and validating theoretical considerations; on the other hand, to study the data and discover its new mutual relations. As a result, it becomes possible to obtain a set of generalized and systematized components and measurements structured both by institutional forms (formal - informal) and by positioning. However, the authors faced the question of choosing the proper indicators. For the sake of description completeness, there are several approaches in a certain instrumentarium of modern science. Isaac Marks (1990) [15] proposed the following *criteria for the diagnostics* of behavioral (non-chemical) addictions: A repeated urge to engage in behavior known to be counterproductive (compulsion); Mounting tension until this activity is completed; Rapid temporary switching off of the tension by completing the behavior; Gradual return of the urge through hours, days or weeks (WD symptoms); Syndrome-specific external and perhaps internal cues for the urge external manifestations, what are unique for this syndrome of addiction; Secondary conditioning of the urge to external and internal cues (dysphoria, anxiety); Hedonistic connotation of the early stages of addiction.

Maressa Orzack (1998) [28] defined the following psychological and physical symptoms of Internet addiction: *Psychological symptoms:* Well-being or euphoria while using the computer / being online; Failure to stop; An increase in time spent at the screen; Neglect of family and friends; - Feeling of emptiness, depression and aggravation while being offline; - Dishonesty to employers and family members about own condition and activities; Problems with work or study. *Physical symptoms:* Carpal tunnel syndrome (tunnel lesion of the nerve trunk of the hand, associated with prolonged muscle strain; Dry eyes; Migraine headaches; Back pain; Lesser food intake and skipping meals; Neglect of personal hygiene; Sleep disorders and changes in sleep patterns. According to research by Kimberly Young (1998) [16], dangerous signals (precursors of Internet addiction) are: Obsessive urges to constantly check email; Anticipation of next online session; An increase in screen time; An increase in the Internet-related financial expenditures. The signs of the incoming Internet addiction according to K. Young (2000) are the following criteria: Preoccupation with the Internet; The need to increase the online time; Repeated unsuccessful efforts to control, cut back, or stop Internet use. Withdrawal symptoms that arise when one is unable to purposefully discontinue the Internet use: Time management problems; Social problems (family, school, work, friends); Dishonesty about the time

spent on-line; Mood change through the use of the Internet [18]. Having considered various approaches, the authors came to quite disappointing conclusions. First, this is the fact that all the mentioned indicators have obvious psychological and medical aspects, which are used exclusively by professionals. Furthermore, even if the behavioral criteria (being, in our opinion, the most understandable and accessible for documentation and analysis) are singled out, then they are entirely non-structured and practically not supported by any valid methodological tools. Sociology has not until recently been interested in behavioral risk factors for the formation of Internet addictions and has not yet developed the methods necessary. This does not allow parents and professionals working with children and adolescents to discover and assess the risks that children expect in the digital space. So, the model proposed by the authors [3] includes several indicators that are quite common for a wide range of specialists: Emotional dependence; Low self-control; Communication problems in non-virtual reality; Deterioration of health and physical condition; The prevalence of virtual interests over the real life; Period of time spent online with the computer or gadget. The questions of the first four indicators were presented in the form of statements; the respondent was asked to express the level of personal consent with such statements on the scale of 'strongly agree'; 'rather agree'; 'rather disagree'; 'strongly disagree' and 'undecided'.

The statements of the indicator of emotional dependence were presented in the questionnaire as follows: I had to use the computer / tablet / smartphone for a mood change or just to calm down; I cannot imagine life without the Internet; There are times when I curse, scream or otherwise express vexation when someone tries to distract me while being online; When I have a bad mood, when I'm annoyed or upset, I play computer games to relieve a dysphoric mood or go online to change the mood or just to calm down.

The questions aimed at identifying the level of self-control included certain options such as: I lose track of time while using the Internet, I often stay online longer than originally intended; Sometimes I neglect domestic chores and homework to spend more time on the web; When I am on the computer doing homework, I must first check who and what wrote me in social networks or via e-mail, what is the news from my friends, etc.; I often forget my original intention, when stumbling upon interesting information on-line; I often forget to eat, when I play computer games, chatting or just surfing on-line; I do withdraw my on-line session on the computer / tablet / smartphone immediately and without any displeasure if I have to.

The questions aimed at measurement of communication problems were formulated as follows: I have more friends in the networks than I have in real life; I feel much more confident in the network than in real life; It seems that people with whom I communicate on-line understand me much better than those who surround me in everyday life; I find it easier to communicate with people on social networks than in real life situations.

The indicator questions identifying health problems: My posture has recently deteriorated due to prolonged sitting at the computer (tablet, etc.); I often have headaches after a prolonged sitting at the computer (tablet, etc.); My eyes often hurt and my eyesight decreases after a prolonged sitting at the computer (tablet, etc.).

As for the indicator of interests, respondents had to choose the option preferred of two: communicating with real versus virtual friends, and real-life interests versus Internet preferences. Here are the *indicators for revealing interests in real or virtual life*. The answers to the question: 'What would you prefer?': Computer games and on-line surfing or playing outdoor games, sports and gym class; Communicating with friends on-line or communicating with friends in person; Reading interesting information on the Internet or reading a book; Online surfing or walk around the city; Internet, social

networks, etc. or company of parents / other relatives. The last block options included questions regarding the evaluation of the time spent at the computer / gadgets, or in social networks. Seeing a clear pattern that the time spent in social networks teenagers do not consider for the time spent with gadgets, these questions were divided into two indicators to strengthen the position of duration of time in the overall indicator model.

As for the questions of the first four blocks, the following values were assigned to the variants of responses / statements that characterize the risks of non-chemical dependencies: 'strongly agree' - 5, 'rather agree' - 4, 'rather disagree' - 2, 'strongly disagree' - 1, and 'undecided' - 3. This way a teenager with the highest risk of non-chemical dependence usually scored 4-5 points on each of the statements / questions. 'Low risk' teenagers scored 1-2 points. Then the averages of the points included in one semantic block were calculated, like, for example, out of the four assessments in the indicator of emotional dependence and out of the six in the indicator of self-control level. Thus, the impact of the different number of statements in each block is leveled. In the block of the indicator of interests with dichotomous answers where respondents chose either virtual interests or real ones, the sum of points of negative statements was calculated; the total maximum amount was 5. In the block of questions revealing the total amount of time spent at a computer / social networks, the values were assigned in accordance with the duration of time on-line. The minimum time corresponded to a value of 1, the maximum and close to it – to the value of 5. As a result, seven averages were obtained in accordance with the number of blocks. The final risk index was calculated using the following formula:

Risk Index = (Emotional Dependency + Communication Problems + Self-Control + Health + Interests + Time1 + Time2)/7

The instrumentarium of a sociological survey 'Indicator model of the study of non-chemical dependencies in adolescents (on the example of the study in Cherepovets)' was utilized in the paper presented. Using the instrumentarium developed in accordance with the indicator model, 600 schoolchildren in grades 5-11 were interviewed in October 2017, following the cluster quota sample by gender and age corresponding to the structure of students in the schools of the city of Cherepovets.

RESEARCH RESULTS

In accordance with the received index, all schoolchildren were divided into five groups corresponding to the level of risk of the Internet addiction (see Fig. 1).

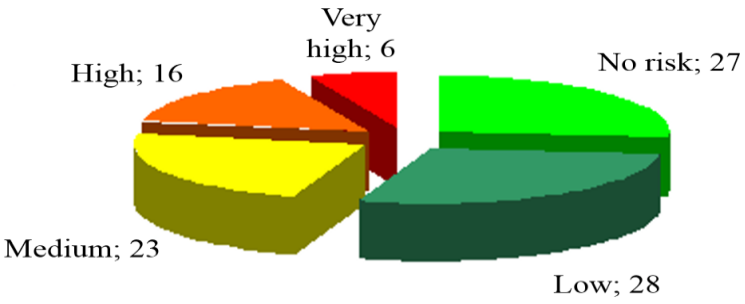

Figure 3. Saturation of the risk groups of the Internet addiction of Cherepovets schoolchildren in grades 5-10

This distribution is rather tentative; however, it gives a reason to assume that about 16% of schoolchildren are in serious risk of computer addiction, and 6% are already in need of taking serious measures to be removed from the risk group. The distribution of answers for all indicator questions was analyzed, considering the respondents' belonging to a certain risk group. Here are some examples that illustrate the heuristic possibilities and performance efficiency of the model. Each of the questions identifying the risk of emotional dependence has proved its diagnostic value. One of the indicators of the risk of addiction is emotional experience: aggravation, annoyance to those circumstances or people distracting the child while being online. Only 1% of the schoolchildren of the conditional group of no risk of Internet addiction noted that they experience these feelings, among the respondents of the high-risk group there were 31%, and in the group of very high risk - 54%, that is, every second of them (see Table 1).

Table 1. Distribution of the answers to the question: 'There are times when I curse, scream or otherwise express vexation when someone tries to distract me while being online' depending on the risk level

	No risk	Low	Medium	High	Very high	**Combined**
Strongly agree	0 %	2 %	5 %	17 %	36 %	**7 %**
Rather agree	1 %	5 %	7 %	16 %	18 %	**7 %**
Rather disagree	24 %	36 %	41 %	28 %	25 %	**32 %**
Strongly disagree	75 %	51 %	39 %	35 %	18 %	**50 %**
Undecided	0 %	6 %	9 %	4 %	4 %	**4 %**

Children from the high-risk and very high-risk groups are using the Internet as a way of emotional relief, altering mood or just calming down. The presence of such behavior was confirmed by 65% of the children in the high-risk group and by 89% in the very high-risk group. Among the children conditionally referred to the group of no risk only 9% confirmed the same. The loss of self-control assessment block is the most important one; this indicator is used by physicians, determining the level of Internet addiction. The results of the research show that children with a high level of risk have little control over their online time; they tend to forget to eat, forget the initial purpose of their computer use, etc. Thus, 54% of children at a very high-risk level had lesser food intake due to excessive Internet / computer games engagement (see Table 2).

Table 2. Distribution of the answers to the question: 'I often forget to eat, when I play computer games, chatting or just surfing on-line / depending on the risk level

	No risk	Low	Medium	High	Very high	**Combined**
Strongly agree	1 %	2 %	6 %	11 %	43 %	**6 %**
Rather agree		4 %	5 %	15 %	11 %	**5 %**
Rather disagree	16 %	25 %	27 %	28 %	18 %	**23 %**
Strongly disagree	82 %	69 %	58 %	43 %	18 %	**63 %**
Undecided	1 %	1 %	4 %	3 %	11 %	**2 %**

The Internet involuntarily takes longer time of schoolchildren's everyday life than they initially would like to spend. Usually children do not notice how they are dragged out by the Web-environment. A large part of the students surveyed confirm that they tend to lose track of time while being online, and often spend more time in the Internet than they intended to (39%) (see Table 3).

Table3. Distribution of the answers to the question: 'I lose track of time while using the Internet, I often stay online longer than originally intended' depending on the risk level (self-control)

	No risk	Low	Medium	High	Very high	**Combined**
Strongly agree	2%	5%	18%	41%	71%	**17%**
Rather agree	9%	25%	33%	26%	14%	**22%**
Rather disagree	46%	48%	35%	26%	7%	**39%**
Strongly disagree	42%	21%	11%	6%	7%	**21%**
Undecided	1%	1%	3%	1%		**1%**
Index of Consent	-1.17	-0.55	0.11	0.69	1.36	**-0.26**

23 % of the teenagers sometimes neglect domestic chores and homework to spend more time on the web. More than half of the schoolchildren first must check their social network accounts and e-mail while doing the homework.

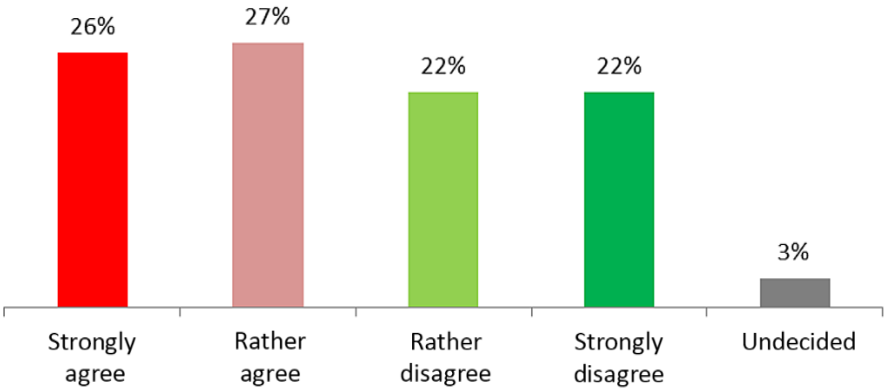

Figure 4. Distribution of the answers to the question: 'How much do you agree or disagree with the statement: When I am on the computer doing homework, I must first check who and what wrote me in social networks or via e-mail and what is the news from my friends?'(in %)

A block of questions identifying communication problems confirms that teenagers often go into virtual reality to find friends in the face of communication difficulties with their peers in the classroom. Those with whom they face in cyberspace understand them better than those who are close to in daily life.

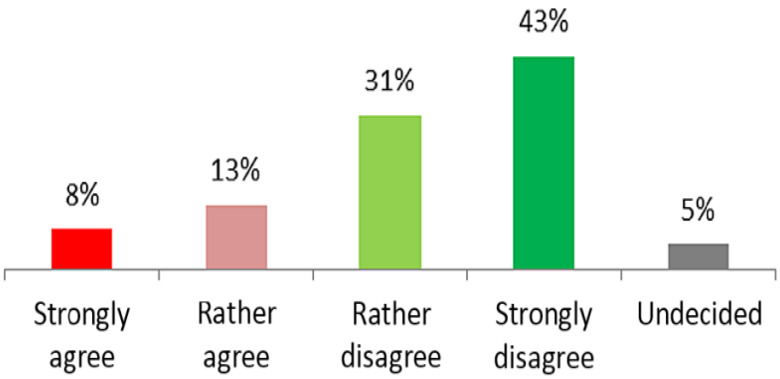

Figure 5. Distribution of the answers to the question: 'How much do you agree or disagree with the statement: It seems that people with whom I communicate online understand me much better than those who surround me in everyday life?' (in %)

Perhaps the other side of the problem is that the emergence of computer interests and virtual friends displace the actual communication with other children. Three quarters (75%) of respondents with very high-risk level agreed that they have more net-friends than real ones (see Table 4).

Table 4. Distribution of the answers to the question: 'I have more friends in the networks than I have in real life / depending on the risk level

	No risk	Low	Medium	High	Very high	**Combined**
Strongly agree	4 %	4 %	16 %	19 %	64 %	**13 %**
Rather agree	3 %	15 %	12 %	25 %	21 %	**13 %**
Rather disagree	18 %	34 %	29 %	32 %	7 %	**27 %**
Strongly disagree	73 %	43 %	32 %	17 %	7 %	**42 %**
Undecided	3 %	4 %	10 %	7 %		**5 %**

The last expected was the performance efficiency of indicators for health issues, since teenagers often do not realize such problems. However, the urge for gadgets and computers in some children is so great that they already experiencing real health-related problems. 50% of them, that is, every second teenager from a very high-risk group noted the decreased eyesight and eyes ache after a prolonged sitting at the computer. This aspect is also confirmed by less web-urged children: 31% in the middle-risk and 38% in high-risk groups (see Table 4).

Table 4. Distribution of the answers to the question: 'My eyes often hurt and my eyesight decreases after a prolonged sitting at the computer (tablet, etc.)'depending on the risk level

	No risk	Low	Medium	High	Very high	**Combined**
Strongly agree	7 %	8 %	10 %	14 %	39 %	**11 %**
Rather agree	9 %	18 %	21 %	24 %	11 %	**17 %**
Rather disagree	20 %	30 %	30 %	21 %	21 %	**25 %**
Strongly disagree	60 %	39 %	35 %	35 %	14 %	**42 %**
Undecided	4 %	5 %	3 %	6 %	14 %	**5 %**

68% of the high-risk group children, i.e. more than half, would prefer computer games and online surfing, rather than playing outdoor games or sports. 61% of the same group preferred online reading, rather than reading a book. The amount of time that teens spend online or on the computer is also quite impressive. Schoolchildren in grades 5-11 spend averaged 2 hours and 45 minutes a day on the computer, of which: children of the very high risk level group - about 6 hours (!), those of high risk group - about 5 hours, and of the middle risk group - 3 hours. Even the children referred to the low-risk group spend more than two hours a day on the computer! Children are practically living a social media life. A half (54%) of the children of the very high-risk group responded that they are almost always online. If the children of the group that identified as no risk spend an average of about an hour a day in social networks and those of low risk group spend up to 2 hours, then in the medium-risk group this time increases to an average of 3.5 hours. For many of them the virtual life becomes more meaningful and more 'real' than the actual one. Also, quite many children feel more confident, independent and free in the virtual space (see Table 5).

Table 5. Distribution of the answers to the question: 'How much time per day (approximately) do you spend watching TV? / depending on the risk level

	No risk	Low	Medium	High	Very high	**Combined**
about half an hour	21%	15%	8%	10%	7%	**14%**
from 30 minutes to 1.5 hours	39%	22%	16%	10%	18%	**23%**
from 1,5 to 3 hours	11%	20%	17%	14%	11%	**16%**
from 3 to 5 hours	2%	8%	12%	11%	7%	**8%**

A significant part of the time that Russian schoolchildren spend online is devoted to search for audio and video files. Many indicated that they often listen to audio and stream video, participate in various on-line activities and polls, play online games and look through the sites that parents do not allow them to visit. Most parents do not prohibit unlimited Internet usage by children and do not restrict them in time. In fact, the older the teenagers become, the less web-related parental control is exercised. A significant part of the 'low-risk' children stated that their parents limit their screen time (see Table 6) [9].

Table 6. Distribution of the answers to the question: 'Do your parents control your screen time?' depending on the risk level

	No risk	Low	Medium	High	Very high	**Combined**
Yes, my screen time is restricted by parents	-	63%	27%	14%	26%	**36%**
Yes, my screen time is restricted, but I manage to bypass parental controls	3%	7%	16%	19%	15%	**10%**
My parents are not very happy that I spend too much time on the computer, but they do not strictly limit that	21%	42%	32%	37%	44%	**33%**
My parents are happy that I spend time at home on the computer	2%	2%	3%	3%		**2%**
My parents are not interested in how I spend my time, I can stay online as long as I want to	12%	17%	22%	28%	15%	**18%**

Thus, the indicator model proposed by the authors is quite valid for determining the level of risk of Internet addiction disorder in adolescents. Internet addiction, as a new kind of dependence, arose and began to manifest itself relatively recently, along with the appearance of new electronic devices that ensure the quick access not only to the knowledge and information necessary, but also to the implementation of the communication of a completely new character, as many Russian and foreign scientists notice. Several researchers rightfully compare this phenomenon with chemical dependence, leading to the destruction of the personality and human health. Therefore, it was given the name of Internet addiction. In the early 21st century Alison Armstrong and Charles Casement [14] announced the danger that the Internet causes to the children's education. Jane Healy researching the effects of addiction gave an emblematic prognosis of the deterioration of the 'quality of the child's mind' in relation to the uncontrolled computer use [19]. The studies on the involvement of children and adolescents in

computer games have been conducted over the years; however, along with positive effects they also gave a negative color to child behavior [11, 22, 26].

It is noteworthy that the very concept of Internet addiction has not yet been clearly outlined; there is a scientific polemic and a search for a more accurate interpretation in relation to the behavior of a person, especially a young one, in a special information-communicative space. Features of such behavior, factors and conditions that affect the manifestation of negative consequences are studied from various aspects [15, 17, 22, 25], however, the psychological context clearly prevails. It should also be pointed out that it requires special knowledge and considerable complex explanatory procedures. Often researchers are turning to the bearers of a problem that is quite mature; whether there is no doubt that the Internet under the modern conditions captures progressively young people and juveniles. Nowadays, teenagers, junior schoolchildren, and even preschool children fall into the risk zone. It is also remarkable that in scientific sociological practice there was no methodological approach for identifying the risk groups of adolescents and corresponding factors that ultimately lead to Internet addiction. Marc E. Pratarelli, Blaine L. Browne and Kimberly Johnson [24]applied factor analysis which, unfortunately, does not give a detailed picture. The indicator model makes it possible to efficiently determine the level of risks without extra input for several justified indicators. The results obtained are objective and representative. Such a model was not previously used in scientific practice.

CONCLUSION

The Internet has firmly entered modern life and become its integral part. It cannot just be banned, taken away or stopped. There is no need for that, of course; modern education, leisure, and even the search for necessary household information cannot be imagined today without the Internet. However, the transformation of the Internet from assistant in being to a rigid determinant becoming a mania, the master of a teenager's life, should not be allowed.

RECOMMENDATIONS

Thus, the indicator model created by our team has confirmed its heuristic possibilities; it can be successfully used in sociological surveys to identify the risks of Internet addiction in adolescents. While it is easy to use it also can be mastered and applied by specialists of various profiles, even distal to sociology. Of course, this was only a pilot project; research in this area and on improving the model will continue. The main conclusion is obvious: the fight against Internet addiction among adolescents should not begin at the stage of an already formed dependence, when there is emotional distress, significant intellectual and volitional reduction in the potential of personality, gross behavioral disorders, i.e. when the child already loses control over own behavior. All of that requires medical treatment and medicamental intervention. The fight, or rather the prevention of addiction, should begin at the stage of low risk of its emergence. The sociological methods of research will be called upon to identify and recognize the risks.

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