

INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGIES ON PHYSICAL AND MENTAL HUMAN HEALTH

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Abstracts

In modern conditions, the interrelation between human health and information technologies, violations of the somatic and mental health of the population, stipulated by information and psychoemotional loads, continue to remain actual issues. The goal is to define the peculiarities of using information technologies in everyday life and to study their influence on the physical and mental health of a person. On December 31, 2017, 4,15 billion people in the world are connected to the Internet. In Ukraine, 52,5 % of people are Internet users. This is 3,5 % of the total number of users in Europe. 96 % of children use the Internet and it has become a natural part of their life. The computer is not only entertainment, but also a means of communication, self-expression and personal development. The Internet attracts modern children and young people in a variety of communication, the alleviation of information hunger, the search for new forms of self-expression, anonymity and virtual freedom, a sense of community and belonging to the group. Children learn new digital technologies and learn to navigate freely in the information space. Children can not really evaluate the level of reliability and security of information contained in the Internet space. Over the past six months, the world has increased the Internet coverage by 7 %. According to statistics, more than a third of users in Ukraine are under the age of 29 years. More than 60 % of children and teenagers communicate daily in the Internet chats. Preference for the virtual world of reality has a negative impact on the psyche and health of a child and can worsen not only the vision, posture and sleep, but also cause anxiety, irritability, social maladjustment and dependent behavior. There is a rise in the high level of anxiety, rigidity and extravagance for Internet users. Only 24 % of adults check which sites their child visits. 11 % of parents are aware of such online threats as 'adult' content, gambling, online violence, cybercrime. 79 % of children are confident that they are sufficiently aware of the risks in the Internet network. There are five main types of the Internet addiction: computer addiction, compulsive navigation in the network, information congestion, cyber sexual addiction and cyber communicative addiction. In Ukraine, the cyber communicative addiction is common. So, according to the research, the first place in attendance is occupied by social networks – 27 % (in general among young people), girls have a higher indicator (29,8 %) than boys (23,9 %).

Key words: information technologies, information environment, Internet addiction, Internet users, physical and mental human health.

Оксана Шинкарук, Євгеній Імас, Лоліта Денисова, Віктор Костюкевич. Вплив інформаційно-комунікаційних технологій на фізичне та психічне здоров'я людини. У сучасних умовах актуальними питаннями продовжують залишатися взаємозв'язок здоров'я людини та інформаційних технологій, порушення соматичного й психічного здоров'я населення, зумовлені інформаційними та психоемоційними навантаженнями. *Мета статті* – визначити особливості використання інформаційно-комунікативних технологій у повсякденному житті й досліджувати їх вплив на фізичне та психічне здоров'я людини. Станом на 31 грудня 2017 р. 4,15 млрд людей у світі підключені до мережі Інтернет. В Україні 52,5 % осіб є користувачами мережі Інтернет. Це становить 3,5 % від загальної кількості користувачів у Європі. 96 % дітей користуються Інтернетом, який став для них природною частиною життя. Комп'ютер є не лише розвагою, але й засобом спілкування, самовираження та розвитку особистості. Сучасних дітей і молодь Інтернет приваблює різноманітним спілкуванням, угамуванням інформаційного голоду, пошуком нових форм самовираження, анонімністю й віртуальною свободою, почуттям спільності та приналежності до групи. Вони засвоюють нові цифрові технології й учаться вільно орієнтуватися в інформаційному просторі. Діти не можуть реально оцінювати рівень достовірності та безпеки інформації, що міститься в Інтернет-просторі. За останні півроку у світі збільшилося покриття Інтернетом на 7 %. За даними статистики, понад третина користувачів в Україні мають вік до 29 років. Більше 60 % дітей і підлітків щодня спілкуються в Інтернет-чатах. Надання переваги віртуальному світу чинить негативний вплив на психіку й здоров'я дитини та може погіршити не лише зір, поставу й сон, але й викликати тривожність, дратівливість, соціальну дезадаптованість і залежну поведінку. Відзначено підвищення високого рівня тривожності, ригідності та екстравертності в інтернет-користувачів. Лише 24 % до-

рослих перевіряють, які сайти відвідує їхня дитина. 11 % батьків знають про такі онлайн-загрози, як «дорослий» контент, азартні ігри, онлайн-насилення, кіберзлочинність. 79 % дітей упевнені в тому, що вони достатньо обізнані щодо ризиків в Інтернет- мережі. Розглянуто п'ять основних видів інтернет-залежності: комп'ютерна залежність, компульсивна навігація в мережі, переважаність інформацією, кіберсексуальна й кіберкомунікативна залежності. В Україні поширена саме друга (кіберкомунікативна) залежність. Так, згідно з проведеними дослідженнями, перше місце за відвідуваністю займають саме соціальні мережі (27 % у цілому серед молоді), у дівчат показник вищий (29,8 %), порівняно з хлопцями (23,9 %).

Ключові слова: інформаційні технології, інформаційне середовище, інтернет-залежність, користувачі Інтернету, фізичне, психічне здоров'я людини.

Оксана Шинкарук, Евгений Имас, Лолита Денисова, Виктор Костюкевич. Влияние информационно-коммуникативных технологий на физическое и психическое здоровье человека. В современных условиях актуальными вопросами продолжают оставаться взаимосвязь здоровья человека и информационных технологий, нарушение соматического и психического здоровья населения, обусловленное информационными и психоэмоциональными нагрузками. **Цель статьи** – определить особенности использования информационно-коммуникативных технологий в повседневной жизни и исследовать их влияние на физическое и психическое здоровье человека. На 31 декабря 2017 г. 4,15 млрд чел. в мире подключены к сети Интернет. В Украине 52,5 % лиц являются пользователями сети Интернет. Это составляет 3,5 % от общего количества пользователей в Европе. 96 % детей пользуются Интернетом и он стал для них естественной частью жизни. Компьютер является не только развлечением, но и средством общения, самовыражения и развития личности. Современных детей и молодежь Интернет привлекает разнообразным общением, утолением информационного голода, поиском новых форм самовыражения, анонимностью и виртуальной свободой, чувством общности и принадлежности к группе. Дети усваивают новые цифровые технологии и учатся свободно ориентироваться в информационном пространстве. Дети не могут реально оценивать уровень достоверности и безопасности информации, содержащейся в Интернет-пространстве. За последние полгода в мире увеличилось покрытие Интернетом на 7 %. По данным статистики, более трети пользователей в Украине в возрасте до 29 лет. Более 60 % детей и подростков ежедневно общаются в Интернет-чатах. Предпочтение виртуального мира реальности оказывает негативное влияние на психику и здоровье ребенка и может ухудшить не только зрение, осанку и сон, но и вызвать тревожность, раздражительность, социальную дезадаптивность и зависимое поведение. Отмечается повышение высокого уровня тревожности, ригидности и экстравертности в интернет-пользователей. Только 24 % взрослых проверяют, какие сайты посещает их ребенок. 11 % родителей знают о таких онлайн-угрозах, как «взрослый» контент, азартные игры, онлайн-насилие, киберпреступность. 79 % детей уверены в том, что они достаточно осведомлены о рисках в Интернет-сети. Рассмотрены пять основных видов интернет-зависимости: компьютерная зависимость, компульсивная навигация в сети, перегруженность информацией, киберсексуальная зависимость, киберкоммуникативная зависимость. В Украине распространена именно киберкоммуникативная зависимость. Так, по проведенным исследованиям, первое место по посещаемости занимают именно социальные сети – 27 % (в целом среди молодежи), у девушек показатель выше (29,8 %), по сравнению с молодыми людьми (23,9 %).

Ключевые слова: информационные технологии, информационная среда, интернет-зависимость, пользователи Интернета, физическое, психическое здоровье человека.

Introduction. The Law of Ukraine «On Main Fundamentals of Information Society Development in Ukraine for 2007-2015 period» dated from 09.01.2007 № 537-V claims the endeavor to build up a socially oriented, open for everybody, aimed at development information society in which everyone could create and store information and knowledge, have an equal access to them, use and share them in order to give every person an opportunity to fully realize his potential promoting both social and personal development as well as raising living standards one of the principal priorities of Ukraine [4; 11].

Information communication technologies (ICT) are the basis of information society, a significant component of information resources usage in all the fields of social activities. Under modern conditions, the issue of the adverse effect of ICT on somatic and mental health of the population, primarily children and young people, caused by informational, psychic and emotional loads remains a topical one [13]. Nowadays, scientists and experts face the challenge to immediately establish a healthy information lifestyle both in social and natural environment [2; 7]. It has become of crucial importance to follow the rules of information hygiene which the experts consider a separate branch of science that studies the regularities of information impact on forming, functioning, mental, physical and social well-being of a person and a society directed at developing measures to put information environment on a sound footing.

Present society activities are fully intervened with information relationships which are based on modern information technologies. Thus, public and political activity digs deeper into interactive television application, allows viewers to react to linkmen's questions, to take part in queries and voting. In its turn, pedagogical information science that deals with the issues of working out and implementing education concept of people who are to live in information society is also actively developing. The objectives of education computerization include both universal (the development of intellectual abilities, humanization and availability of education) and specific ones such as computer competence, education information support (knowledge data bases), individual education approach based on modern computer teaching technologies. Innovative information technologies will promote the change of the educational paradigm, enhance and develop personal skills [7; 13].

Computerization issue, the impact of information communication technologies on human health is one of the crucial subjects of the present. Although the use of ICTs facilitates our life, at the same time it causes addiction – a pathological dependence on it. By immersing into the virtual world a person becomes detached from reality, stops showing interests in what is going on around him in the real world. Young people and teenagers are extremely vulnerable in this respect as they are underdeveloped personalities and can be easily exposed to the adverse effect of the environment. ICTs influence all the biological characteristics of a human body, in the first place, his physical and mental health [12].

The objective is to define the peculiarities of using information technologies in everyday life and to study their influence on the physical and mental health of a person.

Material and research methods: analysis and synthesis, generalization and systematization, observance, interview, statistics techniques.

Research findings and discussions. In order to define the influence of information technologies on human health, the preliminary attention was given to the latest research works on expanding ICTs in Ukraine and the world conducted by the scientists. There have been analyzed the results of the research carried out by the Ericsson's company laboratory «ConsumerLab» on the advantages of using information technologies. 500 respondents from Kyiv, Lviv and Donetsk (aged 15–69) took part in the poll. The sample was representative and reflected the opinion of 3,4 million people including all walks of life. It has been proved that 33 % of the interviewed persons were «innovator-users» in 2011 in Ukraine [5; 15]. They easily put on trial new services, products and devices as well as actively use telecommunication services. This category of users has much in common with the European and US users of such a kind. They have a significant influence on ICT market development accelerating the introduction of new services, gadgets and technologies [5; 15]. During the investigation period, 63 % of the respondents in different cities and towns of Ukraine who do not use the Internet pointed out that it was of no need for them. That makes the striving and probability of the Internet access application, both fixed and mobile, by these people of a very low level in the nearest future [5].

The results of Ericsson's research have shown that more than half of the population (59 %) in the Ukrainian cities have access to high-speed Internet, that is, its use is like in other developed markets in Europe (Germany – 61 %, Italy – 52 %) [5; 15]. According to the research, 68 % of Internet users in the cities of Ukraine chat in the social networks weekly (United Kingdom – 63 %, USA – 62 %), while 28 % use Skype or similar IP-telephony services for communication at least once a week (United Kingdom – 20 %, US – 19 %) [5; 15]. Thus, Ukraine is ahead of the US and many European countries by the intensity of using social networks and IP-telephony (Fig. 1).

More than 2/3 of respondents in Ukraine use the mobile Internet every day, and more than 90 % – every week (fig. 2). The research by Ericsson Consumer Lab has clearly shown that the frequency of TV viewing on demand – that is, short online video clips, TV shows and films, as well as downloaded content – is increasing due to the influence of young people's habits in Ukraine [5].

According to the study, the reasons for using the mobile Internet are: Internet access (45 %), ease of use (26 %) and mobility outside the home (26 %). The same factors are fundamental for people who do not have the mobile Internet today, but are going to use it in the nearest future. According to «Ericsson Consumer Lab», 65 % of people aged 15–24 watch short video clips on the Internet at home, and about 60 % watch downloaded movies and TV shows at least once a week [5; 15].

According to the Internet World Stats [16], as of December 31, 2017, 4.15 billion people in the world are connected to the Internet and actively use ICT (Table 1, Figure 3).

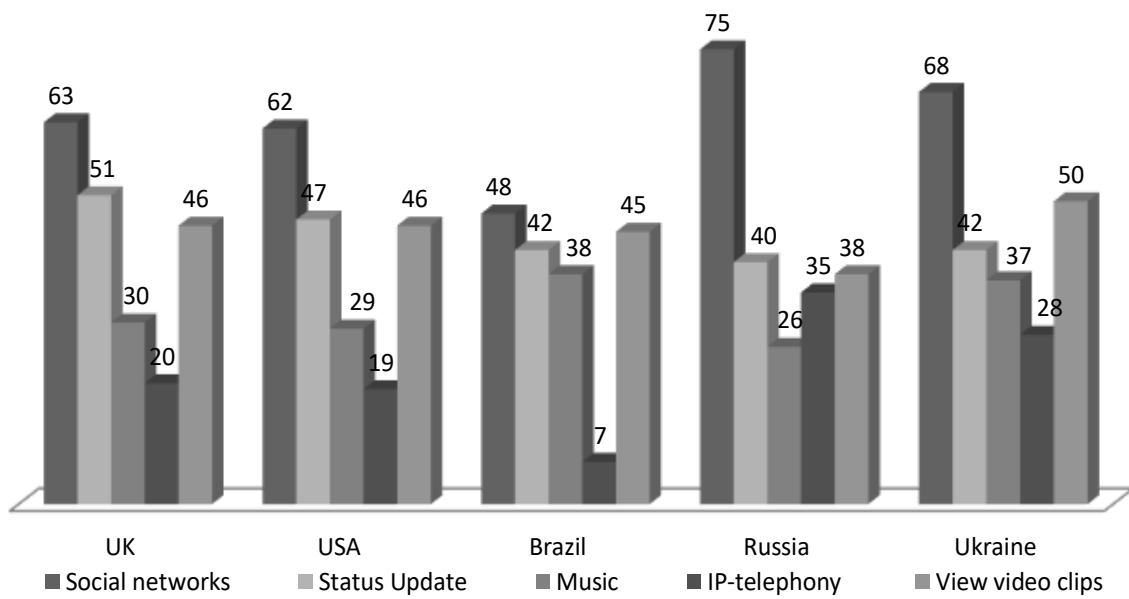


Fig. 1. Use of Internet services in the world

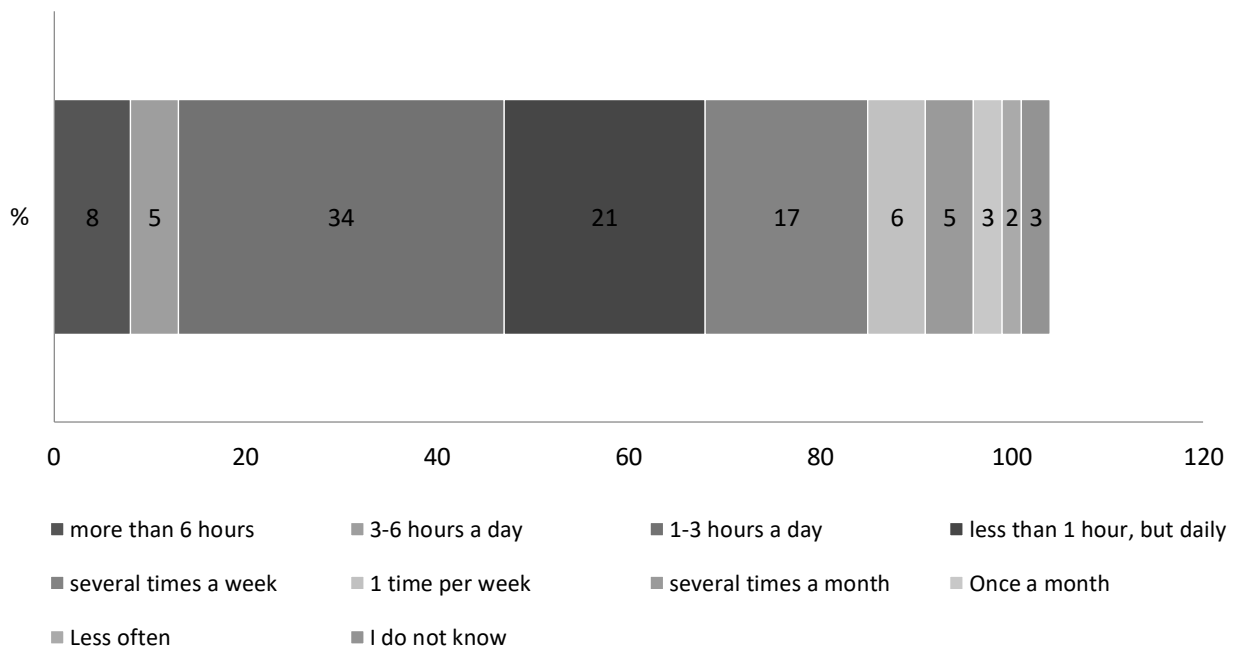


Fig. 2. Use of mobile Internet by users of mobile communication in Ukraine

This number is increasing with every coming day. The information world is embracing all the segments of the population.

Below is a list of TOP-20 Internet users states, most of them are the Asian countries (Table 2).

According to the Internet World Stats, on June 30, 2017 in Ukraine, 52.5 % of the people are Internet users (23 million). This represents 3.5 % of the total number of users in Europe [16].

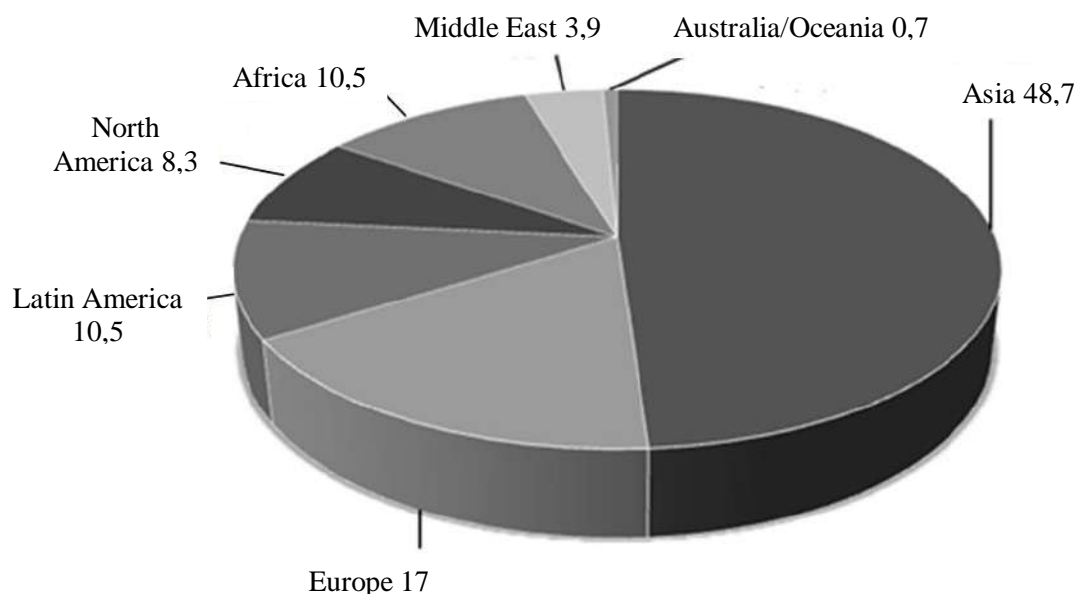


Fig. 3. Statistics of Internet users in the world according to Internet World Stats as of December 31, 2014 [16]

Table 1

The number of Internet users in different parts of the world and the world population as of 2018

The regions of the world	World Population (as of 2018)	World population %	Internet users (as of December 31, 2017)	Internet users %
Africa	1,287,914,329	16.9 %	453,329,534	10.9 %
Asia	4,207,588,157	55.1 %	2,023,630,194	48.7 %
Europe	827,650,849	10.8 %	704,833,752	17.0 %
Latin America	652,047,996	8.5 %	437,001,277	10.5 %
Middle east	254,438,981	3.3 %	164,037,259	3.9 %
North America	363,844,662	4.8 %	345,660,847	8.3 %
Australia / Oceania	41,273,454	0.6 %	28,439,277	0.7 %
Total in the world	7,634,758,428	100.0 %	4,156,932,140	100.0 %

According to statistics, 96 % of children and teenagers use the Internet (Table 3).

There are many possibilities of using information and communication technologies – from self-development of computer programs, creation of web pages in the Internet, distance learning to immersion in the world of the best museum collections, libraries. But the usage of ICT in one direction or another has a different effect on the psychics of people and, first of all, children and adolescents. On the Internet, children and teens look for the necessary information for classes, download music and movies, look through the mail, and communicate with other Internet users. Internet technologies have become a natural component of the

lives of children and modern youth. Computer is not only an entertainment but also a means of communication, self-expression and personal development (Fig. 4).

Table 2

**TOP-20 countries of the Internet and world population
(according to Internet World Stats, [16] processed)**

№	Country	World population (as of 2018)	World population (as of 2000)	Internet users (as of 31 December, 2000)	Internet users (as of December 31, 2000)	Internet growth, %
1	China	1,415,045,928	1,283,198,970	772,000,000	22,500,000	3,331 %
2	India	1,354,051,854	1,053,050,912	462,124,989	5,000,000	9,142 %
3	USA	326,766,748	281,982,778	312,322,257	95,354,000	227 %
4	Brazil	210,867,954	175,287,587	149,057,635	5,000,000	2,881 %
5	Indonesia	266,794,980	211,540,429	143,260,000	2,000,000	7,063 %
6	Japan	127,185,332	127,533,934	118,626,672	47,080,000	152 %
7	Russia	143,964,709	146,396,514	109,552,842	3,100,000	3,434 %
8	Nigeria	195,875,237	122,352,009	98,391,456	200,000	49,095 %
9	Mexico	130,759,074	101,719,673	85,000,000	2,712,400	3,033 %
10	Bangladesh	166,368,149	131,581,243	80,483,000	100,000	80,383 %
11	Germany	82,293,457	81,487,757	79,127,551	24,000,000	229 %
12	Philippines	106,512,074	77,991,569	67,000,000	2,000,000	3,250 %
13	Vietnam	96,491,146	80,285,562	64,000,000	200,000	31,900 %
14	United Kingdom	66,573,504	58,950,848	63,061,419	15,400,000	309 %
15	France	65,233,271	59,608,201	60,421,689	8,500,000	610 %
16	Thailand	69,183,173	62,958,021	57,000,000	2,300,000	2,378 %
17	Iran	82,011,735	66,131,854	56,700,000	250,000	22,580 %
18	Turkey	81,916,871	63,240,121	56,000,000	2,000,000	2,700 %
19	Italy	59,290,969	57,293,721	54,798,299	13,200,000	315 %
20	Egypt	99,375,741	69,905,988	48,211,493	450,000	10,613 %
Countries TOP 20		5,146,561,906	4,312,497,691	2,937,139,302	251,346,400	1,068 %
The rest in the world		2,488,196,522	1,832,509,298	1,219,792,838	109,639,092	1,012 %
Total in the world		7,634,758,428	6,145,006,989	4,156,932,140	360,985,492	1,051 %

The activity of using the Internet with children and teens,%

Age	Every day	3 times a week	1 time a week
10–11 ages	10 %	75 %	15 %
12–13 ages	22 %	67 %	11 %
14–15 ages	34 %	54 %	12 %
16–17 ages	65 %	24 %	11 %

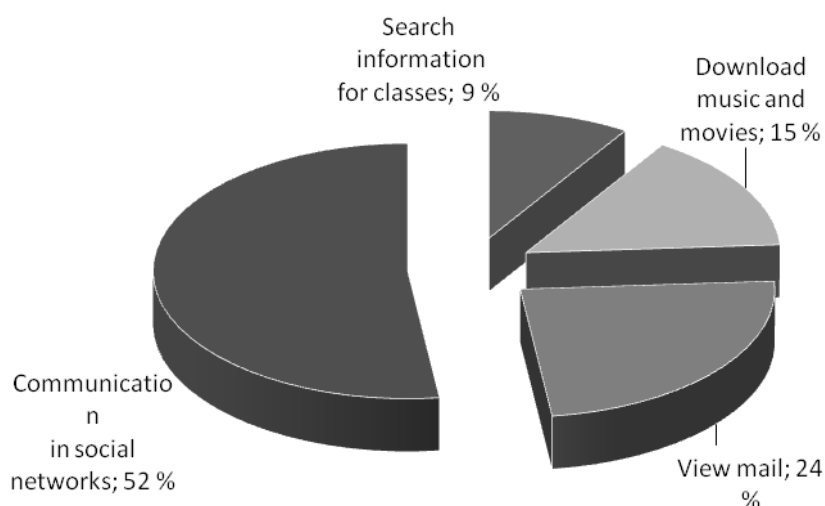


Fig. 4. Distribution of children and adolescents aged 10–17 in the Internet by the directions of activity %

Individual exploration of the information environment allows to expand the range of child's interests and contributes to his further education, develops quick-wittedness, teaches to an independent tasks solving. Educational, developing and entertaining Internet resources are aimed at children of all ages. Thanks to them children acquire the basics of writing and counting, learn to draw and model, get used to working independently and get the idea of the surrounding world in the form of entertainment. The tasks of developing programs and games include the improvement of memory, attention, thinking, logic, observation, training of reaction speed, etc. There are many games that at the same time have teaching and educational basis and are capable to evoke interest of school-age children in economics, sociology, history, literature.

The World Wide Web also meets the needs of adolescents in leadership. Children who are good at using the computer and the Internet more adequately evaluate their abilities and capabilities, they are more purposeful and clever [1].

The Internet attracts modern children and youth due to diverse communication, the search for new forms of expression, anonymity and virtual freedom, a sense of community and belonging to the group. Children get familiar with new digital technologies and learn to freely orientate in the information environment. They show increased interest in everything new, and are the most exposed to the external environment [8].

It should be noted that children can not actually assess the level of reliability and security of information in the Internet. At present, more than 60% of children and teenagers communicate daily in the Internet chats. Three out of four children working online are ready to share private information about themselves and their families in the exchange for goods and services. And every fifth child annually becomes the target of malicious users. The availability of Internet resources for minors dictates increased requirements for quality, reliability and security of the informational content in the network [6].

Despite the general rules of the network etiquette, the limits of permissiveness in the Internet space are still quite wide. Violations of social adaptation and insufficient attention from the parents' side make the virtual world the most desirable for children and young people. Giving preferences to the virtual world before the real world has a negative effect on the psychics and health of a child and can worsen not only the

eyesight, posture and sleep, but also cause anxiety, irritability, social maladjustment and dependent behavior.

Only 24 % of adults check the sites visited by their child. Moreover, 87 % of parents believe that they should teach children the rules of the safe Internet usage. Only 11 % of parents are aware of such online threats as «adult» content, gambling, online violence, cybercrime. The researchers of the Institute of Sociology of the National Academy of Sciences of Ukraine have identified serious threats which Ukrainian children can face online. 76 % of parents have no idea what websites their children visit [1; 6]. Parents feel quite easy watching uncontrolled visits of their children in the Internet (Figure 5).

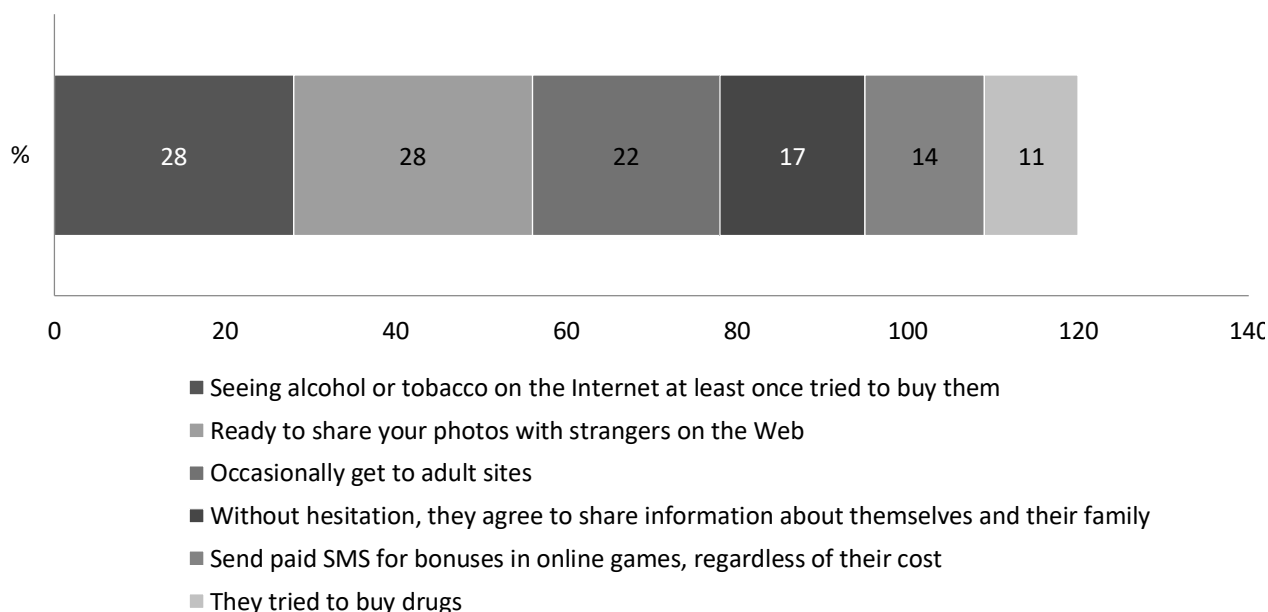


Fig. 5. *The risks and dangers of using the Internet by children and adolescents*

It should also be noted that 79 % of children are convinced that they are sufficiently aware of the risks in the Internet and 67 % reported and informed about the rules of the work in the network. The main informants, according to children, are parents (59 %), friends (37 %), and in the last place – teachers (33 %). Analyzing the results of this research, we can state the insufficient level of informing of the Ukrainian population about the rules of safe work in the Internet. Scientists note the most common threats for children and young people at the present stage of development of information technologies are: computer dependence, the difference between real «I» and its Internet image, access to unwanted content (adult content), Internet fraud, infecting a computer with malware, online violence, etc. [2; 6; 12] (Fig. 6).

Recently, a lot of attention has been paid to this problem abroad.

With the appearance of new technologies, there are new kinds of addiction. American scientist Kimberley Yang distinguishes between five main types of internet-addiction [14]:

- 1) computer addiction: obsessive passion for the work on the computer (programming, games etc.);
- 2) net compulsions: compulsive search of the information in the remote data-base;
- 3) information overload: pathological inclination for the internet mediated gambling, online auctions, web purchasing;
- 4) cybersexual addiction: dependence on cybersex, in other words, on the porno site sessions, discussing sexual topics in chat rooms or private groups «for adults»;
- 5) cyber-relational addiction: dependence on communication in the social networks, online forums, chat rooms, group games and teleconferences, that can lead to the substitution of real family members and friends for virtual ones.

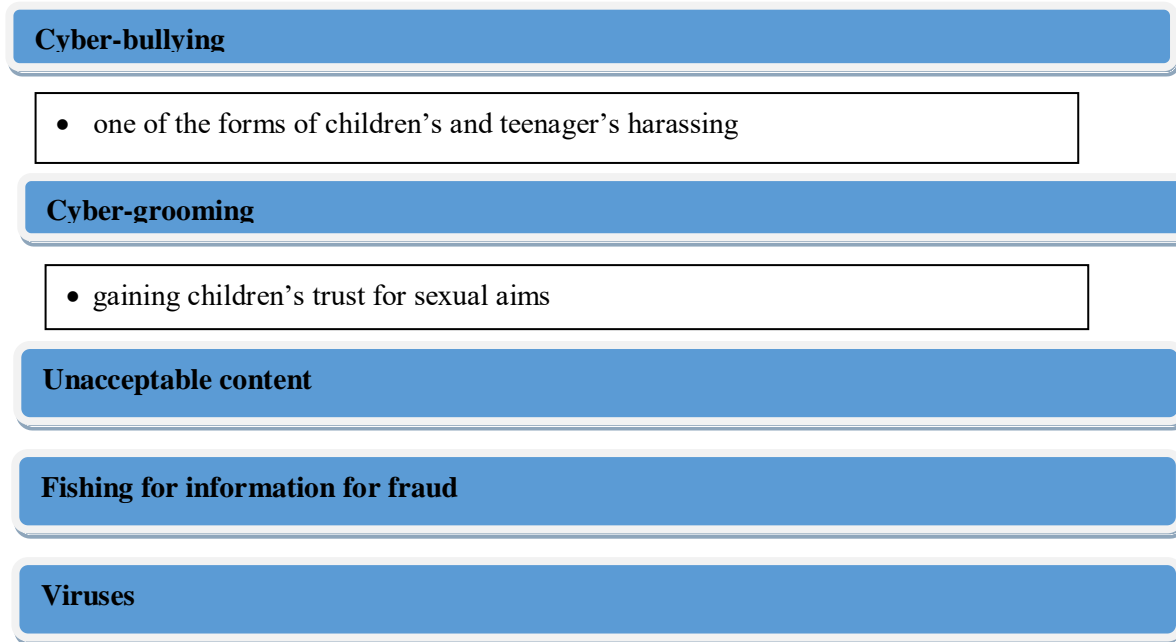


Fig. 6. *Sorts of risks and dangers of using the Internet by children and teenagers*

The world community pays special attention to the issues of children's security, who belong to the most vulnerable category of Internet users. International organizations, state governments, different structures create and support programs, aimed at teaching the competent and safe use of the Internet by children.

Protecting children and young people from negative informational influences is one of the state areas of the Ukrainian state policy in education. The subject of the state policy in the field of the protection of public morality is the creation of the necessary conditions that promote the implementation of the right to information space which is free from materials threatening physical and intellectual development or the moral and psychological state of children and young people [6].

Within the past six months, Internet-connection has increased by 7%. According to statistics, more than a third of users are Ukrainians under the age of 29.

According to the findings of the Ukrainian Institute for Social Research named after Oleksandr Yaremenko with the support of the UNICEF Representative Office in Ukraine and the European Monitoring Center for Drugs and Drug Addiction (EMCDDA) within the framework of the international project ESPAD pursued in 33 countries of Europe, there is a gradual but stable decrease in smoking and drinking in Ukraine among teenagers and young people aged 15-17 [6]. On the one hand, it is a positive tendency; on the other hand, the actualization of more modern types of dependencies, such as Internet addiction, the use of PAS (psychoactive substances – psychotropic agents, drugs), gambling, etc., is observed.

Internet addiction is developing most widely and has a lot of components starting from addiction to social networks up to cybernetic ludomania, which appears in the obsessive capture of video and computer games. Today, scientists [1] highlight the following valid and measurable indicators of the Internet addiction:

- amount of time spent on the Internet;
- ways of spending free time;
- quantity / quality of sleep, its violation because of the network using;
- manifestation of aggression, irritability when it's impossible to use the Internet;
- deterioration of working / educational indicators in connection with the use of the network [1].

Considering that today the Internet is an essential part of the life of a modern person, one needs to be able to form the necessary balance between virtual and real life, which will enable each person to realize himself as a many-sided person in the entire ensemble of human relationships without harm to health.

According to Balakireva O. M. [6] 9.9 % of respondents found a strong Internet addiction, and for 81 % it is a moderate Internet addiction, based on such indicators as the amount of time spent on the Internet, motives for spending time on the Internet, the attitude towards social networks, computer games, Internet

surfing. Nowadays every third young man spends more than four hours on the Internet on a working day. It should be noted that with girls all rates are higher than with boys [6].

Table 4

Typology of Internet-addiction

№ nn	Factor	Criterion	Type of Internet-addiction
1	The amount of time that is spent daily on the net with non-working / non-teaching goals	more than 10 hours daily	absolute
		from 6 to 10 hours daily	strong
		less than 3 hours daily	soft deficiency
2	Motives of spending time on the Internet	a way to fight boredom, rest, online games	absolute strong
		mainly for the purpose of self-education, search of work, educational information and news	soft deficiency
3	Maximum period of time during which the user comfortably gets along without going to the Internet	less than a few hours	absolute
		from few hours to one day	strong
		from a week to a month	soft
		from a few months to an infinitely long time	deficiency
4	The main type of information that comes from the Internet	entertaining, communicative	absolute strong
		labour, educational information and news	soft deficiency
5	The amount of time everyday spent by the user with friends without using the Internet	less than an hour in a week	absolute strong
		from 4 to 7 hours in a week	soft
		7 hours and more in a week	deficiency
6	Main ways to spend free time	exceptionally in the Internet	absolute strong
		different types of leisure activities, not connected with Internet	soft deficiency

The cybercommunicative addiction is widespread in Ukraine. Thus, according to research, social networks are the first place to visit – 27 % on the whole among young people. The highest rate is 29.8 % for girls, for boys it is lower – 23.9 % [6].

It should also be mentioned that girls are more active in online communication, while boys use computer games more. In our opinion, this division of interests is associated with behavior patterns that are developed in a child by the society from a young age (lego, construction kits are for boys, dolls are for girls, excessive demonstration of emotionality is acceptable for girls, and boys should be more reserved). Therefore, eventually a girl usually shows herself in a communicative interaction, and a boy evinces through a specific action, in this case, an online action in the game. The lack of connection between the need to stay online and the age of the interviewed young people is also a characteristic feature.

Excessive stay in the virtual world separates a person from the real world, leads to a constantly high level of anxiety, emotional alienation, difficulties with concentration of attention (Fig. 7).

Dipping in the network can cause sleep violations and disturbance of nutrition. American psychiatrist Ivan Goldberg admitted it in 1995 and assured that overusing of the Internet caused depression, stress, aggression [3]. Children who sit for a long time in front of the computer don't want to move. They complain about a pain in their legs. That's true, because a sedentary lifestyle means insignificant physical activity which evokes infraction in function of muscles as well as vessels [2; 8]. The lifestyle of the modern youth can be called sedentary and it is becoming habitual, necessary, comfortable despite the negative influence on health. Pupils and students have been sitting in front of computers for 9,5 hours (in the academic institutions, preparing for lessons, chatting or playing computer games) which can cause the addiction to hypokinesia.

Nowadays it is known that children's and teenager's addiction to the virtual space is a reason for delay of social and emotional development. As the consequence of such an influence we will get a society which won't cooperate, discuss, see the world from the other people's perspective.

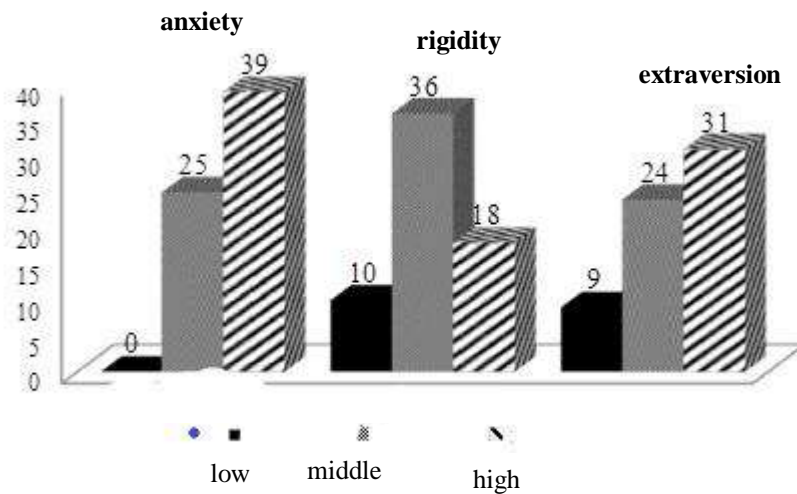


Fig.7. The level of anxiety, rigidity and extraversion of Internet users

In order to forecast the further trends of this addiction it will be enough to study the experience of the countries which are much better than Ukraine in informational and technological sphere. For example, Polihaeva D. pointed out that in Japan after the technological progress such problem as «hikikomori» had emerged [10] (literally means «staying alone», «heavy social self-isolation»). This Japanese notion denotes people who refuse from social life and in most cases strive for the highest level of social isolation and loneliness for different personal and social reasons. Mainly, these are 15-years old boys from rich families who skip classes and sit in front of the computer screen for months and years avoiding contacts with the outside world. At the beginning of the career Japanese psychiatrist was shocked by the number of young Japanese people who have such a lifestyle. There are more than a million of them in Japan where the population is 127 million [10].

Special attention should be granted to a new kind of Japanese Internet cafes which have existed for approximately 10 years and have become more popular since the previous century [9]. They can be compared with dormitories with small rooms which have common space, bathrooms, washing rooms and an automatic machine with free drinks. Prices which are low for the Japanese are the main attraction for customers and citizens [9; 10]. According to the data presented by the Ministry of Health, Labour and Welfare of Japan 60 900 people stayed for a night in the Internet cafes regularly and at the same time 5 400 people were living there because they didn't have their own houses [10]. The market is rapidly growing and developing, so only in Tokyo there are more than 10 permanent inhabitants of these cafes, their number has doubled over 3 year's period.

There is no information about Internet psychosis in Ukraine. Most cases are hidden cases of addiction. For example, in the Netherlands there are 10 000 junkies and 40 000 internet-addicted persons. There is one junkie in every four internet-addicted ones. If such a proportion was in Ukraine it would be dangerous [6].

In modern society it is necessary to follow some rules of informational hygiene and sparing our own time, to have analysis and research skills to get the necessary information for solving some tasks.

Conclusions and prospects for further research. All kinds of addiction are a symptom that a society is becoming technogenic and informational. Information impact which causes computer and Internet addiction constitutes the biggest danger for mental health.

The results of the conducted research have testified that in Ukraine the information and communication technologies including various Internet services are widely used. The problem of the Internet addiction is becoming more and more urgent both in our country and abroad. The number of the Internet addicted is increasing because of the present conditions and spreading information and communication technologies as well as the Internet development.

The scholars warn about the danger of the Internet for population, especially for children and youth, and necessity to focus on following the standards of information hygiene which can protect from the negative influence of information and communication technologies on a person and provide physical and mental health care.

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