Prevalence of Internet Addiction among Schoolchildren in Novi Sad

Eržebet Ač-Nikolić[1,2], Dragana Zarić[3], Olja Nićiforović-Šurković[1,2]

[1]Institute of Public Health of Vojvodina, Novi Sad, Serbia;
[2]University of Novi Sad, Medical Faculty, Novi Sad, Serbia;
[3]Primary Health Care Center "Novi Sad", Novi Sad, Serbia

SUMMARY

Introduction Internet use has increased rapidly all over the world. Excessive Internet use tends to lead to the creation of a non-chemical addiction, most commonly known as "Internet addiction."

Objective The aim of this study was an assessment of the prevalence of Internet use and Internet addiction among school children aged 14–18 years in the Municipality of Novi Sad, Serbia, and influence of sociodemographic variables on Internet use.

Methods A cross-sectional study was conducted in Novi Sad among final-year students from elementary and first- and second-year students from high schools. The prevalence of Internet addiction was assessed by using Young's Diagnostic Questionnaire.

Results Out of 553 participants, 62.7% were females, and the average age was 15.6 years. The sample consisted of 153 elementary school students and 400 high school students. Majority of respondents had a computer in their household. Our study showed widespread Internet use among adolescents. Facebook and YouTube were among most visited web-sites. The main purpose of Internet use was entertainment. Estimated prevalence of Internet addiction was high (18.7%), mostly among younger adolescents (p=0.013).

Conclusion Internet addiction was found in every fifth adolescent. Accessibility and availability of Internet use is constantly growing and therefore it is necessary to define more sensitive diagnostic tools for the assessment of Internet addiction and its underlying causes, in order to implement effective preventive programs.

Keywords: Internet addiction; schoolchildren; prevalence

INTRODUCTION

Internet use has increased rapidly and it is estimated that the number of global Internet users has reached 2.3 billion in 2011 [1]. According to the Internet World Stats in March 2014, 40.7% of global population used the Internet [2]. The first assessment of Internet use in Serbia was conducted in 1999, when it was reported that 10% of households possessed a personal computer, while 5% had Internet connection [3]. Thirteen years later an increase in Internet use in Serbia was observed, and computer possession was found in 55.2% of households, while Internet connection was available in 47.5% of the households [4].

Excessive Internet use tends to lead to the creation of a non-chemical addiction, most commonly known as "Internet addiction." This phenomenon is also referred to as "excessive Internet use," "problematic Internet use," "Internet dependency" or "pathological Internet use" (PIU) [5], and it is obvious that there is no consistency in usage of terms and definitions. According to Young [6], Internet addiction is "maladaptive pattern of Internet use leading to clinically significant impairment or distress." Although there is no generally accepted definition of Internet addiction, an addictive behavior can be recognized because it leads to behavioral changes, sleep disorders, social isolation, and decrease of work performance, impaired self-esteem and family problems [7].

Adolescents are a population at risk for developing Internet addiction because of the fact that their cognitive control and boundary setting skills are low, while the peer influence is high [8]. This population group faces many challenges and pressures due to growing expectations of society on the one hand, and great emotional changes associated with maturation on the other. This is the period of life when habits are being developed and they usually define future lifestyle of an individual [9].

Tsitsika et al. [10] reviewed literature on the topic and presented various prevalence rates of Internet addiction among adolescents, with the restriction that the studies were conducted in a different period. They also discussed whether the underlying cause of variability in the observed prevalence rates of Internet addiction among adolescents might be partly attributed to inconsistency in defining Internet addiction, as well as the fact that its assessment tools have not been uniquely established. They found prevalence ranged between 1.0% and 18.3% in European countries, and between 13.7% and 18.4% in Asian countries.

OBJECTIVE

The objective of this study was assessment of the prevalence of Internet use and Internet addiction among schoolchildren aged between 14

Correspondence to:
Eržebet AČ-NIKOLIĆ
Institute of Public Health of Vojvodina
Futoška 121, 21000 Novi Sad
Serbia
erzebet.ac@izjzv.org.rs

and 18 years in the Municipality of Novi Sad, Serbia, as well as assessment of influence of sociodemographic variables on Internet use.

METHODS

Study design and participants

A cross-sectional study was conducted in the Municipality of Novi Sad, with 341,625 inhabitants, according to 2011 Census of Population, Households and Dwellings in the Republic of Serbia [11]. There are 37 elementary schools and 16 high schools in the municipality, with about 26,000 and 18,000 students, respectively.

A stratified cluster random sampling was applied to choose participants. Students attend elementary schools according to their home address, so the sample of elementary schools was designed proportionally to overall number of children aged 7–15 years in urban, peri-urban and rural area of the Municipality of Novi Sad. Applying that criterion, four schools in the urban area, two in peri-urban and one school in the rural area were selected randomly. The participants from chosen elementary schools were selected randomly.

The participants from high schools were selected according to the type of the high school, since majority of high schools are located in the urban area of the Municipality of Novi Sad. In Serbia, high schools are classified into the following types: vocational schools (that can have only four-year education sections or both three- and four-year sections) and gymnasiums (gymnasiums have better teaching resources, such as school facilities and equipment, than those present in vocational schools). Proportionally, from each type, high schools were selected randomly: three gymnasiums, four regular secondary vocational schools (four-year) and two vocational schools with both three- and four-year sections. From each school one class from the first and one class from the second year were randomly selected.

School approvals were obtained before participation in the study. Investigators visited schools, explained the purpose of the study to school principals and teachers and informed them of the objectives of the study, of the guarantee of confidentiality, and provided a contact telephone number of the prime investigator for any questions and concerns. All students in the selected classes were asked to participate in the study and anonymously fill out the self-administered questionnaire. The researchers explained the procedures and requirements. The questionnaires were collected immediately after they were completed. The entire procedure took 10–15 minutes to complete.

Instrument

The instrument was a questionnaire divided into the following four sections: a) sociodemographic data; b) data on Internet use; c) assessment of Internet addiction and d) health education aspect and students' perception of having school class or discussion with parent about Internet use.

Internet addiction was assessed by using translated and culturally adapted Young's Diagnostic Questionnaire for Internet Addiction, which was adapted from DSM-IV criteria for pathological gambling. This questionnaire consists of eight dichotomous questions. One point was given to each "yes" answer, while "no" answer was given 0 points. Scores ranged 0–8, and the cut-off point was set up at 4/5 [6]. We applied original Young's criteria.

Data analysis

All statistical analyses were conducted using SPSS version 18.0. Descriptive analysis was used to describe the students' demographic characteristics, patterns of Internet use and the prevalence of Internet addiction. Chi-square, Mann–Whitney and Kruskal–Wallis tests were used to examine the differences with a statistical significance criterion of $p<0.05$.

RESULTS

Socio demographic characteristics

A total of 600 questionnaires was distributed, but 553 of them were eligible to be included in the study (92.2%).

Of the 553 participants, 62.7% were females, and the average age was 15.6 years (SD=0.96, Min=14, Max=18). The sample consisted of 153 elementary and 400 high school students. More than half of them (54.1%) had high academic achievement in the previous school year (Table 1).

Majority of respondents had computer in their household (97.7%), with no statistically significant differences between boys and girls, or in terms of either age or academic achievement in the previous school year. Internet use was common for majority of respondents (96.4%),

Table 1. Sociodemographic characteristics of the sample

Variables	Responses	N	%
Gender	Male	207	37.3
	Female	346	62.7
Age (years)	14	75	13.5
	15	157	28.5
	16	217	36.2
	17	98	17.7
	18	6	1.1
School	Elementary	153	27.5
	Secondary three-year	53	9.5
	Secondary four-year	175	31.8
	Gymnasium	172	31.3
Average grade in the previous school year	Middle low	15	2.7
	Middle	74	13.4
	Middle high	151	27.3
	High	299	54.1
	No answers	14	2.5

N – number of subjects

mostly among students with better academic achievement (p=0.000). The other socio-economic variables didn't have statistically significant impact on distribution of Internet use. More than 80% of respondents used Internet outside their households, more often elementary school students (p=0.018). Every fifth respondent used Internet less than an hour per day; there were no differences among gender, but significantly more time on the Internet was spent by elementary school students (p=0.006), students with poorer academic achievement (p=0.013) and younger respondents (p=0.044) (Table 2).

The most commonly visited web-sites were Facebook (75.9%) and YouTube (17.6%). Girls more frequently visited Facebook, while boys preferred YouTube and online games (p=0.000). Other sociodemographic variables didn't have significant impact (Table 2).

The most common purpose of Internet use was entertainment (59.9%) – secondary school students used Internet for entertainment more often (p=0.016), every fourth respondent used it because of a need, for every tenth it was a way of acquiring knowledge and 6.6% of the respondents used the Internet for communicative reasons. Academic achievement also had significant impact on perception of Internet use – students with better academic achievement used Internet for entertainment more than other students, students with middle level of academic achievement because of a need and students with poorer academic achievement perceived Internet use as a way for communication (p=0.030) (Table 2).

Analyzing all items in Diagnostic Questionnaire we saw that more than 28% of respondents felt preoccupied with the Internet, significantly more often students with poorer academic achievement (p<0.000); more than three fourths of respondents replied that they feel the need to use the Internet with increasing amount of time in order to achieve satisfaction, significantly more often boys (p=0.028); almost every fourth adolescent had repeatedly made unsuccessful efforts to control, cut back or stop Internet use; every tenth respondent reported to feel restless, moody, depressed or irritable when attempting to cut down or stop Internet use; almost 68% of them stayed online longer than originally intended; more than two fifths of students considered they jeopardized or risked the loss of a significant relationship or educational opportunity because of the Internet; more than one fourth confirmed that they lied to family members or others to conceal the extent of involvement with the Internet; 26.1% of the adolescents used the Internet as a way of escaping from problems or of relieving a dysphoric mood (Table 3).

Using Young's criteria for addiction, 18.7% of students had score 5 or more. There were no statistically significant differences between boys and girls, schools, or students with different academic achievement. However, it was observed that Internet dependence was more frequent among younger age group (14–15 years) compared to their older peers (p=0.013) (Table 4). The mean score of Internet addiction was 3.03 (SD=1.75, Min=1, Max=8).

The final questionnaire section included two items regarding the students' perception of health education lessons about Internet use. One fifth of the students (19.5%) stated they had school lessons about safe Internet use, significantly more so students aged 14–15 years (p<0.000), elementary school students (p<0.000), and lower graded students (p=0.017), while gender didn't have a significant

Table 2. Internet use in adolescents

Parameter		Total (%)	Gender		Age		School		Average grade in the previous school year			
			Boys	Girls	14–15	16–18	Elementary	Secondary	Middle low	Middle	Middle high	High
Having a computer in the household		97.7	98.0	97.7	97.8	97.5	98.0	97.7	93.3	95.9	98.0	98.3
p			0.276		0.067		0.855		0.402			
Internet users		96.4	96.1	96.5	97.9	95.3	98.0	95.7	93.3	86.5	96.0	99.3
p			0.796		0.115		0.201		0.000			
Use of Internet outside home		80.8	81.5	80.2	83.0	79.1	87.2	78.1	100.0	86.3	77.3	79.5
p			0.724		0.243		0.018		0.057			
Time spent on the Internet daily	<1 hour	20.9	16.9	23.3	16.0	24.5	13.7	23.9	26.7	14.5	17.8	23.5
	1–2 hours	41.2	39.5	41.9	42.2	40.6	39.0	41.8	26.7	33.3	41.8	44.7
	>2 hours	37.9	43.6	34.8	41.8	34.8	47.3	34.3	46.7	52.2	40.4	31.7
	p		0.079		0.044		0.006		0.013			
Most frequently visited web-sites	Facebook	75.9	64.0		74.4		73.6	76.7	73.3	72.6	79.2	75.3
	YouTube	17.6	23.6		19.4		20.3	16.5	6.7	19.2	14.8	19.0
	Online games	2.4	5.9		2.6		2.7	2.3	0.0	1.4	2.0	2.4
	Other	4.1	6.4		3.5		3.4	4.6	0.0	6.8	4.0	3.4
	p		0.000		0.746		0.691		0.275			
Purpose of Internet use	Entertainment	59.9	53.7		53.7		49.3		53.3	48.6	54.3	67.0
	Need	23.0	27.8		26.2		31.1		20.0	29.2	31.3	16.5
	Communication	6.6	6.8		7.9		8.1		13.3	6.9	7.9	5.4
	Acquiring knowledge	10.6	11.7		12.2		11.5		13.3	15.3	6.6	11.1
	p		0.114		0.107		0.016		0.030			

Table 3. Young's Diagnostic Questionnaire items by sociodemographic variables*

	Total (%)	Gender		Age		School		Average grade in the previous school year			
		Boys	Girls	14–15	16–18	Elementary	Secondary	Middle low	Middle	Middle high	High
Do you feel preoccupied with the Internet (think about previous online activity or anticipate next online session)?	28.2	28.4	27.8	29.4	30.8	28.3	27.5	45.5	44.3	33.3	19.0
p		0.879		0.159		0.862		0.000			
Do you feel the need to use the Internet with increasing amount of time in order to achieve satisfaction?	77.4	83.0	73.8	80.9	74.6	80.5	75.5	81.8	78.6	80.5	75.1
p		0.028		0.126		0.283		0.689			
Have you repeatedly made unsuccessful efforts to control, cut back or stop Internet use?	24.1	20.9	25.5	33.3	17.5	34.1	20.2	16.7	33.3	25.0	22.3
p		0.254		0.000		0.001		0.292			
Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?	10.1	8.2	11.2	12.4	8.1	12.8	9.1	7.1	23.8	10.5	6.3
p		0.295		0.115		0.230		0.000			
Do you stay online longer than originally intended?	67.9	62.2	71.0	70.5	66.1	68.0	67.8	86.7	66.7	66.4	69.0
p		0.055		0.310		0.975		0.444			
Have you jeopardized or risked the loss of significant relationship, job, educational or career opportunity because of the Internet?	41.2	45.1	39.1	48.6	35.6	50.0	38.1	40.0	53.3	48.3	34.0
p		0.217		0.006		0.024		0.010			
Have you lied to family members, therapist or others to conceal the extent of involvement with the Internet?	27.8	28.1	27.7	35.1	22.5	35.6	24.9	13.3	28.4	32.0	27.4
p		0.933		0.001		0.014		0.427			
Do you use the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g. feelings of helplessness, guilt, anxiety or depression)?	26.1	20.9	28.9	30.3	23.3	32.0	23.8	30.0	33.3	30.5	21.9
p		0.056		0.083		0.069		0.136			

* Percentages of positive answers are listed

Table 4. Internet addiction by sociodemographic variables

Variable	Gender		Age		School		Average grade in previous school year			
	Boys	Girls	14–15	16–18	Elementary	Secondary	Middle low	Middle		High
%	15.1	20.6	23.7	14.7	24.0	16.6	6.7	27.7	20.8	15.8
p	0.141		0.013		0.067		0.085			

impact. Almost half of the respondents (47.2%) discussed Internet use with their parents.

DISCUSSION

Internet users are defined as people with access to the worldwide network. New technology innovations, mass production and availability of personal computers resulted in global expansion of Internet use in the last decade. Over the years, the Internet has become more accessible in homes, schools, libraries and Internet cafes, mostly due to increasing affordability of home computers and high-speed connections. With easy access to various information, the Internet provides tremendous educational, entertainment and interpersonal communication benefits [12]. Our results indicate that the vast majority of respondents (97.7%) had computer in their households and also use the Internet. This proportion is higher than reported in other studies conducted three to five years earlier; thus, 85.1% of adolescents aged 15–16 in Iași County, Romania, had a computer at home, and 94.8% used the Internet [13].

Among junior high school students in Taiwan, 86% of boys and 82% of girls self-reported to have a computer at home [14].

According to the World Bank estimates, the number of Internet users in Serbia is on the increase in recent years. In 2009 Internet use rate was 38.1%, while in 2012 the rate was 48.1%. This trend seems to comply with global trends in Internet use [15]. There is lack of evidence about prevalence of Internet use among Serbian adolescents, but our findings suggest higher prevalence among adolescents compared to general population, which is similar to a limited case study of Internet addiction in the City of Niš among student population aged 19–23 who had the prevalence of Internet use of 100% [16]. Guan and Subrahmanyam [5] referred to the 2008 World Internet Project, a survey of 13 countries, which showed that the prevalence of Internet use among adolescents aged 12–14 was 88% in the United States, 100% in the United Kingdom, 98% in Israel, 95% in Canada and over 70% in Singapore. Among seventh- and tenth-graders from suburban California public schools, occasional or regular Internet use was reported by 91% of the students [17]. Some studies showed significant gender differences in Internet use in favor of boys [5], while our study showed that academic achievement was positively related to Internet use ($p<0.000$). It was also observed that older students saw Internet use as an entertainment, in contrast to their younger peers, who perceived it as a need. Differences were also found regarding the academic achievement – students with higher grades perceived Internet use as entertainment, while for students with lower grades it was a communication tool.

Excessive Internet use can cause negative outcomes such as poor school performance, social isolation, and might interfere with psychosocial development of adolescents. It has been observed that Internet use becomes pathological when it interferes with one or more major areas of life, such as creation of significant relationships, occupation, school or health [18]. Though our study design does not allow for making case-effect inferences, the results are similar to the situation in Singapore, where significantly more adolescents who used the Internet excessively felt that grades and schoolwork almost always suffered because of being online [12].

In our study students most frequently visited Facebook (75.9%), which complies with the study findings among Irish teenagers aged 11–16, where 72% frequently use social networks, mainly Facebook [19]. Regarding gender patterns, we found that girls visited Facebook significantly more frequently than boys, and boys were more involved in online games and YouTube. Gross [17] showed similar gender patterns in Internet use, where boys spent more time playing video games, and girls were more likely to spend time online in social interactions. Similar patterns can be found in some other studies [14, 20].

We found that the main purpose of Internet use was entertainment (59.9%). Among 1,380 high school students in the city of Isparta, Turkey, the main purposes of Internet use were communication (39.2%) and obtaining information (29.7%) [21].

Population-based studies showed that prevalence of Internet use varies and that it is lower in adult population than in adolescents. The large study in all 50 states of the USA showed that 68.9% of telephone interviewed adults were regular Internet users, and 13.7% showed some features of problematic Internet use [22]. Norwegian study on 3,399 adults showed prevalence of Internet use to be 87%, Internet addiction 1% and "at risk" Internet use 5.2% (according to Young's Diagnostic Questionnaire criteria) [23].

Since adolescents are more likely to adopt new technologies and are more susceptible to development of addictive behavior, prevalence rates among adolescents were more in focus of researchers. Chang and Hung [24] reviewed epidemiological data from several studies and presented that problematic Internet use can be found in 1–18% of adolescents in both Western and Eastern societies. Our findings showed that 18.7% of adolescents were Internet addicted according to Young's criteria. The same approach was used in several other studies. Thus, prevalence of Internet addiction was assessed to be 6.7% among Hong Kong adolescents aged 15–19, while a randomized controlled trial evaluating interventions for risk behaviors among adolescents in Austria, Estonia, France, Germany, Hungary, Ireland, Israel, Italy, Romania, Slovenia and Spain demonstrated that prevalence of pathological Internet use was 4.4% [25, 26].

Cao and Su [27] used the same diagnostic tool, but modified by Beard and Wolf [28] and, according to this rigid modification, found the prevalence of Internet addiction among high school students in Changcha City in China to be 2.4%. Zhang et al. [29] showed 9.5% of adolescents aged 12–17 in four Chinese provinces to be pathological Internet users, by using Adolescent Pathological Internet Use Scale (APIUS), 38-item simplified Chinese scale for measuring PIU.

The proportion of Internet addiction in our study was significantly more frequent among younger age groups, with no influence of gender, type of school or academic achievement. Fu et al. [25] also did not find gender differences among the addicted to the Internet, in contrast to Al-hantoushi and Al-abdullateef [18], who revealed that among secondary school students with Internet addiction in Riyad City, Saudi Arabia, boys and those with lower degree of school performance were significantly more represented [18]. In an Adolescent Health Unit in Athens, Greece, a correlation between Internet addiction and poor academic performance was also demonstrated [10]. Cao and Su [27] revealed male-to-female ratio of 4.8:1 among those with Internet addiction.

According to the published data, there have not been large population studies about prevalence of PIU in Serbia, but Hinić [30] performed clinical study among 50 subjects who asked for professional help due to the symptoms of the excessive Internet use. Hinić used diagnostic criteria for Internet behavior disorder proposed by the American Psychology Association as inclusion criteria. His results have shown that the population with Internet addiction symptoms equally included males and females, mostly adolescents, younger population and university students.

CONCLUSION

Our study showed that almost all adolescents use the Internet, which is more frequent among students with better academic achievement. On the other hand, elementary school students and students with poorer academic achievement spent greater amount of time daily on the Internet. Most frequently visited web site is Facebook, and the dominant purpose of Internet use was entertainment. Prevalence of Internet addiction was high (18.7%), mostly among younger students. The results of this study posed a recommendation for more specific research and inclusion of more sensitive diagnostic tools on a larger population sample, as well as inclusion of wider scale of sociodemographic variables. Furthermore, some additional factors should be explored, such as the impact on personal development, family relations and functioning, socialization, academic achievement and other aspects of the quality of life.

REFERENCES

1. ICT Facts and Figures, the World in 2013. www.itu.int [homepage on the Internet]. Geneva: International Telecommunication Union [cited 2014 December 29]. Available from: http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013-e.pdf.
2. www.internetworldstats.com [homepage on the Internet]. Bogota: Internet World Stats [cited 2015 January 3]. Available from: http://www.internetworldstats.com/stats.htm.
3. Mandić S. Kompjuterizacija i istoriografija 1995-2005. Beograd: Istorijski arhiv Beograda; 2008.
4. Information Technologies, Chapter 17. www.stat.gov.rs [homepage on the internet]. Statistical Yearbook of the Republic of Serbia 2013 Information technologies. Statistical Office of the Republic of Serbia [cited on 2014 December 30]. Available from: http://webrzs.stat.gov.rs/WebSite/repository/documents/00/01/17/66/17_Informacione_tehnologije.pdf.
5. Guan SS, Subrahmanyam K. Youth Internet use: risk and opportunities. Curr Opin Psychiatry. 2009; 22(4):351-6. [DOI: 10.1097/YCO.0b013e32832bd7e0] [PMID:19387347]
6. Lee S. Problematic Internet Use among College Students: An Exploratory Survey Research Study [dissertation]. Austin (TX): The University of Texas; 2009.
7. Van Rooij AJ, Prause N. A critical review of "Internet addiction" criteria with suggestions for the future. J Behav Addict. 2014; 3(4):203-13. [DOI: 10.1556/JBA.3.2014.4.1] [PMID: 25592305]
8. Kuss DJ, van Rooij AJ, Shorter GW, Griffiths MD, van de Mheen D. Internet addiction in adolescents: prevalence and risk factors. Computers in Human Behavior. 2013; 29(5):1987-96. [DOI: 10.1016/j.chb.2013.04.002]
9. Currie C et al., editors. Social Determinants of Health and Well-being among Young People. Health Behavior in School-aged Children (HBSC) Study: International Report from the 2009/2010 Survey. Copenhagen: WHO Regional Office for Europe; 2012.
10. Tsitsika A, Critselis E, Louizou A, Janikian M, Freskou A, Marangou E, et al. Determinants of Internet addiction among adolescents: a case-control study. ScientificWorldJournal. 2011; 11:866-74. [DOI: 10.1100/tsw.2011.85] [PMID: 21516283]
11. Census of Population, Households and Dwellings in the Republic of Serbia (2011). Population. Age and Sex. Data by Settlements. www.stat.gov.rs [homepage on the internet]. Belgrade: Statistical Office of the Republic of Serbia [cited on 2014 December 30]. Available from: http://pod2.stat.gov.rs/ObjavljenePublikacije/Popis2011/Starost%20i%20pol-Age%20and%20sex.pdf.
12. Mythily S, Qiu S, Winslow M. Prevalence and correlates of excessive Internet use among youth in Singapore. Ann Acad Med Singapore. 2008; 37(1):9-14. [PMID: 18265891]
13. Makarie GF, Stefanescu C, Tebeanu AV, Chele GE. Characteristics of computer and Internet use among adolescents in Iasi County. Procedia – Social and Behavioral Sciences. 2012; 3:835-9. [DOI: 10.1016/j.sbspro.2012.01.239]
14. Tsai MJ, Tsai CC. Junior high school students' Internet usage and self-efficacy: a re-examination of the gender gap. Computers & Education. 2010; 54:1182-92. [DOI: 10.1016/j.compedu.2009.11.004]
15. Internet Users (per 100 people). www.worldbank.org [homepage on the internet]. International Telecommunication Union, World Telecommunication/ICT Development Report and database, and World Bank estimates. Catalog Sources World Development Indicators [cited on 2014 December 21]. Available from: http://data.worldbank.org/indicator/IT.NET.USER.P2.
16. Živković S, Stojković N. Cyberspace – addiction or not: a limited case study of the Internet addiction among student population. AJIS. 2013; 2(11):150-9. [DOI: 10.5901/ajis.2013.v2n11p150]
17. Gross EF. Adolescent Internet use: What we expect, what teens report. J Appl Dev Psychol. 2004; 25:633-49. [DOI: 10.1016/j.appdev.2004.09.005]
18. Al-hantoushi MN, Al-abdullateef SH. Internet addiction among secondary school students in Riyadh city, its prevalence, correlates and relation to depression: a questionnaire survey. A questionnaire survey. Int J Med Sci Public Health. 2014; 3(1):10-5. [DOI: 10.5455/ijmsph.2013.130920131]
19. Machold C, Judge G, Mavrinac A, Elliott J, Murphy AM, Roche E. Social networking patterns/hazards among teenagers. Ir Med J. 2012; 105(5):151-2. [PMID: 22803496]
20. Holstein B, Pedersen TP, Bendtsen P, Madsen KR, Meilstrup CR, Nielsen L, et al. Perceived problems with computer gaming and internet use among adolescents: measurement tool for non-clinical survey studies. BMC Public Health. 2014; 14:361. [DOI: 10.1186/1471-2458-14-361] [PMID: 24731270]
21. Gencer SL, Koc M. Internet abuse among teenagers and its relations to internet usage patterns and demographics. Educational Technology & Society. 2012; 15(2):25-36.
22. Aboujaoude E. Problematic Internet use: an overview. World Psychiatry. 2010; 9:85-90. [DOI: 10.1002/j.2051-5545.2010.tb00278.x] [PMID: 20671890]
23. Bakken IJ, Wenzel HG, Götestam KG, Johansson A, Oren A. Internet addiction among Norwegian adults: a stratified probability sample study. Scand J Psychol. 2009; 50:121-7. [DOI: 10.1111/j.1467-9450.2008.00685.x.] [PMID: 18826420]
24. Chang JP-C, Hung C-C. Problematic Internet Use. In: Rey JM, editor. IACAPAP e-Textbook of Child and Adolescent Mental Health. Geneva: International Association for Child and Adolescent Psychiatry and Allied Professions; 2012.
25. Fu KW, Chan WSC, Wong PWC, Yip PSF. Internet addiction: prevalence, discriminant validity and correlates among adolescents in Hong Kong. Br J Psychiatry. 2010; 196:486-92. [DOI: 10.1192/bjp.bp.109.075002] [PMID:20513862]
26. Durkee T, Kaess M, Carli V, Parzer P, Wasserman C, Floderus B, et al. Prevalence of pathological internet use among adolescents in Europe: demographic and social factors. Addiction. 2012; 107(12):2210-22. [DOI: 10.1111/j.1360-0443.2012.03946.x] [PMID:22621402]
27. Cao F, Su L. Internet addiction among Chinese adolescents: prevalence and psychological features. Child Care Health Dev. 2006; 33(3):275-81. [DOI: 10.1111/j.1365-2214.2006.00715.x] [PMID: 17439441]
28. Beard KW, Wolf EM. Modification in the proposed diagnostic criteria for Internet addiction. Cyberpsychol Behav. 2001; 4(3):377-83. [PMID: 11710263]
29. Zhang Y, Yang Z, Duan W, Tang X, Gan F, Wang F, et al. A preliminary investigation on the relationship between virtues and pathological internet use among Chinese adolescents. Child Adolesc Psychiatry Ment Health. 2014; 8(1):8. [DOI: 10.1186/1753-2000-8-8] [PMID: 24594317]
30. Hinić D. Korisnički profili internet zavisnika u Srbiji. Psihologija. 2008; 41(4):435-53. [DOI: 10.2298/PSI0804435H]

Преваленција зависности од интернета међу децом школског узраста у Новом Саду

Ержебет Ач-Николић[1,2], Драгана Зарић[3], Оља Нићифоровић-Шурковић[1,2]

[1]Институт за јавно здравље Војводине, Нови Сад, Србија;
[2]Универзитет у Новом Саду, Медицински факултет, Нови Сад, Србија;
[3]Дом здравља „Нови Сад", Нови Сад, Србија

КРАТАК САДРЖАЈ

Увод Употреба интернета се незаустављиво повећава свуда у свету. Његова прекомерна употреба може довести до нехемијске зависности познате као „зависност од интернета".

Циљ рада Циљ овог истраживања био је да се утврди преваленција употребе интернета и зависности од интернета међу ученицима узраста 14–18 година који живе на територији града Новог Сада, као и утицај социодемографских варијабли на коришћење интернета.

Методе рада Изведена је студија пресека у Новом Саду међу ученицима завршних разреда основних школа и ученицима прва два разреда средњих школа. Зависност је процењивана на основу дијагностичких критеријума по Јанговој (*Young*).

Резултати Од укупно 553 испитаника, 62,7% је било женског пола, а просечан узраст испитаника био је 15,6 година. У узорку је било 153 ученика основних школа и 400 ученика средњих школа. Већина испитаника имала је рачунар у свом домаћинству. Испитаници су најчешће посећивали веб-сајтове *Facebook* и *Youtube*, а основни и најчешћи разлог коришћења интернета била је разонода. Истраживање је показало широку употребу интернета међу адолесцентима, с високом преваленцијом зависности од интернета (18,7%) статистички значајно чешће међу млађим ученицима (p=0,013).

Закључак Код сваког петог адолесцента утврђена је зависност од интернета. Доступност и приступачност коришћења интернета је у непрестаном порасту, те постоји потреба за креирањем осетљивијих инструмената за процену зависности од интернета, као и за утврђивањем узрока настанка те зависности, како би се могли применити одговарајући превентивно-промотивни програми.

Кључне речи: зависност од интернета; деца школског узраста; преваленција

Примљен • Received: 26/01/2015 **Ревизија • Revision:** 22/05/2015 **Прихваћен • Accepted:** 02/09/2015