

**Gender and severity of Internet addiction symptoms
as shown by lower and upper secondary school students**

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Summary

The aim of the study was to provide an answer to the following research problem: do any differences occur, if any, between girls and boys who attend upper and lower secondary schools and as regards the Internet addiction symptoms measured by the Internet Addiction Test and which symptoms of the Internet addiction do these differences concern?

Examined group: The research covered 518 students (229 boys and 289 girls), out of whom 98 boys and 77 girls attended lower secondary school and 131 boys and 212 girls attended upper secondary school. The total of 251 respondents came from urban areas and 280 from rural areas.

Methods: In the research the Questionnaire by Potembska [13] and the Internet Addiction test designed by Young [1] were used.

Results: The results of the statistical analyses carried out show statistically significant differences between the boys and girls attending lower and upper secondary schools within the Internet Addiction test by Young.

Conclusions:

- 1. Compared to the girls, the boys are characterised by a greater severity of the Internet addiction.*
- 2. Statistically significant differences were found between the boys and girls attending upper secondary school within a larger number of Internet addiction symptoms measured by the Internet Addiction test as compared to the boys and girls attending lower secondary school.*

Key words: Internet addiction, gender, adolescents

Technology addictions, to which undoubtedly the Internet addiction belongs, are classified by authors [1,2,3] as habit and impulse disorders. In recent years we can observe a significant growth in the number of adolescents aged 12 to 18 using the Internet – this number is similar in various countries and falls within the range from 70% [4] to 85% [5].

The factors adding to the Internet addiction include according to Lam et al. [6]: male gender, alcohol consumption, family factors, problems related to emotional style of coping with stress. Low self-esteem, older age and low satisfaction with everyday life are related to a greater risk of the Internet addiction in case of men [7]. However, these correlations were not found in case of women [7]. Moreover, the men addicted to the Internet are characterised by a lower tolerance to frustration than women [8].

The research carried out by Lam et al. [6] involving a group of adolescents aged 12-18 years showed that the internet addiction risk is by 50% higher with reference to boys than girls. The differences as regards the prevalence of the Internet addiction among girls and boys are also shown by Kaltiala – Heino et al. [9], who after examining 7229 persons aged 12-18 years showed that 1,7% of boys and 1,4% of girls are addicted to the Internet. Similar results were obtained by Johansson and Gotestam [10].

They estimate that circa 2% of adolescents fulfils the Internet addiction criteria, this disorder being more prevalent among boys (2,4%) than girls (1,51%). Statistical data show that men spend online about 17 hours a week, whereas women about 3 hours less [5].

Yang [11] after examining 1296 persons aged 12-19 years using the CRABI test (Computer – Related Addictive Behavior Inventory) that was designed based on the Internet Addiction test by Young found that more boys than girls fulfil the criteria of the medium risk (40 – 59 points) and high risk (above 60 points) of Internet addiction. Moreover, boys more often than girls play computer games, whereas girls more frequently choose to communicate with other persons using the Internet (mainly using the Internet chat lines) and load files from the Internet [11,12].

Due to the differences as regards the severity of Internet addiction symptoms between men and women as shown by researchers, in this study the following research problem was formulated: do any differences occur, if any, between girls and boys who attend upper and lower secondary schools and as regards the Internet addiction symptoms measured by the Internet Addiction Test (IAT) and which symptoms of the Internet addiction do these differences concern?

Examined group

The research covered 518 students (229 boys and 289 girls), out of whom 98 boys and 77 girls attended lower secondary school and 131 boys and 212 girls attended upper secondary school. The total of 251 respondents came from urban areas and 280 from rural areas. 87% were raised in full families, whereas 11% in single-parent families. The group of the respondents' parents who were active professionally included 75% of mothers and 81% of fathers. 17% of mothers and 7% of fathers were unemployed. Circa 46% of parents had secondary level education, vocational education had 33% of fathers and 22% of mothers.

Methods

In the research the Questionnaire by Potemb-ska [13] and the Internet Addiction test designed by Young [1] were used.

Results

In order to answer the research problem formulated in the study, using the t Test the results obtained by girls with the results obtained by boys were compared within the general IAT scale and within individual IAT items (Table 1).

The obtained results show that the boys who attend lower secondary school are characterised by

Tab.1. Comparison of mean results of IAT items and IAT general scale obtained by lower secondary school female and male students

Scales IAT	boys		girls		t Test	
	M	sd	M	sd	t	p
Do you find that you stay online longer than you intended?	3,49	1,25	2,95	1,16	2,95	0,004
Do others in your life complain to you about the amount of time you spent online?	2,30	1,28	1,83	1,09	2,54	0,01
Do you become defensive or secretive when anyone asks you what you do online?	2,24	1,12	1,77	1,02	2,91	0,004
Do you find yourself anticipating when you go online again?	2,50	1,31	2,03	1,12	2,53	0,01
Do you fear that life without the Internet would be boring, empty and joyless?	2,51	1,33	2,13	1,15	1,99	0,05
Do you lose sleep due to late night log-ins?	2,14	1,28	1,73	0,98	2,43	0,02
Do you feel preoccupied with the Internet when off-line on fantasise about being online?	1,90	1,07	1,48	0,79	2,97	0,003
Do you find yourself saying "Just a few minutes" when online?	2,92	1,47	2,45	1,26	2,20	0,03
General IAT result	42,62	12,39	37,81	11,91	2,60	0,01

Note: The table includes only those IAT items between which significant statistically differences occurred

significantly greater severity of the Internet addiction symptoms than the lower secondary school female students. Statistically significant differences were found between girls and boys attending lower secondary school within 8 out of 20 symptoms included in the Internet Addiction Test designed by Young. Compared to the girls, the boys significantly more often extend the time of the Internet use, they belittle their activity online, they are preoccupied with the Internet when they are not in front of the computer, they are afraid that life without the Internet would be empty and boring and lose sleep spending time online and are preoccupied with the Internet. The boys admit more often than the girls do that the people close to them complain that they spend too much time online.

Table 2 presents the results of the t test showing differences in the general IAT results and in individual IAT items between boys and girls attending upper secondary school.

The data present in the table above show statis-

tically significant differences between upper secondary school female and male students in the IAT general result and 18 addiction symptoms identified in the IAT. Compared to their female peers, upper secondary school male students extend the time spent online, they neglect household chores, school and work to spend more time online, more often, as compared to the girls, they establish sexual relationship with other fellow online users, they belittle more their online activity, they escape from negative thoughts about their lives into the virtual world, they are afraid that their life without the Internet would be empty and boring, they are preoccupied with the Internet, they are secretive about the amount of time they spend online and they made unsuccessful attempts to limit their time online. Compared to the girls, the boys prefer to spend time in front of the computer instead of meeting their peers in reality and more often are annoyed when they cannot use the Internet.

Tab.2. Comparison of mean results of IAT items and IAT general scale obtained by upper secondary school female and male students

Scales IAT	boys		girls		t Test	
	M	sd	M	sd	t	p
Do you find that you stay online longer than you intended?	2,77	1,22	2,48	1,03	2,27	0,02
Do you neglect household chores to spend more time online?	2,38	1,15	2,11	1,00	2,29	0,02
Do you prefer excitement of the Internet to intimacy with your partner?	1,41	1,00	1,14	0,59	2,80	0,01
Do you form new relationships with fellow online users?	1,85	1,04	1,47	0,86	3,54	0,001
Do others in your life complain to you about the amount of time you spent online?	1,93	1,14	1,45	0,83	4,22	0,001
Does your work suffer (e.g., postponing things, not meeting deadlines, etc.) because of the amount of time you spend online?	2,27	1,24	1,71	0,98	4,38	0,001
Does your job performance or productivity suffer because of the Internet?	2,03	1,19	1,75	1,08	2,27	0,02
Do you become defensive or secretive when anyone asks you what you do online?	1,83	1,11	1,46	0,87	3,24	0,001
Do you block disturbing thoughts about your life with soothing thoughts of the Internet?	1,57	0,91	1,26	0,66	3,40	0,001
Do you find yourself anticipating when you go online again?	1,89	1,13	1,46	0,87	3,78	0,001
Do you fear that life without the Internet would be boring, empty and joyless?	1,95	1,16	1,63	0,96	2,69	0,01
Do you snap, yell, act annoyed if someone bothers you while you are online?	1,95	1,14	1,53	0,89	3,61	0,001
Do you lose sleep due to late night log-ins?	2,02	1,15	1,52	0,90	4,23	0,001
Do you feel preoccupied with the Internet when off-line on fantasise about being online?	1,55	0,89	1,24	0,59	3,55	0,001
Do you find yourself saying "Just a few minutes" when online?	1,65	1,01	1,38	0,82	2,61	0,01
Do you try to hide how long you've been online?	1,55	0,97	1,23	0,61	3,41	0,001
Do you choose to spend more time online over going out with others?	1,62	0,98	1,29	0,66	3,42	0,001
Do you feel depressed, moody, or nervous when you are offline, which goes away once you are back online?	1,59	0,91	1,31	0,70	3,01	0,003
General IAT result	38,16	15,09	31,65	11,50	4,24	0,001

Note: The table includes only those IAT items between which significant statistically differences occurred

Discussion

The results of the statistical analyses carried out show statistically significant differences in the scales of the Internet Addiction Test designed Young between upper secondary school male and female students. The boys attending both lower and upper secondary school are characterised by a greater severity of Internet addiction symptoms than the girls. Statistically significant differences were found between the boys and girls attending upper secondary school within a greater number of Internet addiction symptoms as compared to the boys and girls attending lower secondary school.

The above results correspond to the research results carried out by Lam et al. [6] involving adolescents aged 12-18 years which show that the Internet addiction risk in boys is 50% higher than in the case of girls. Similar results were obtained by Joahansson and Gotestam [10], who estimate that circa 2% of adolescents fulfils the Internet addiction criteria, however in their opinion this disorder oc-

curs more often in boys (2,45) than in girls (1,51%). Siomos et al. [4] using the Young Diagnostics Questionnaire (YDQ) showed that among 5,9% of adolescents fulfilling the Internet addiction criteria the percentage of boys was 4,4% and 1,5% of girls.

Also Kaltiala-Heino et al. [9] notice the differences in the prevalence of the Internet addiction among boys and girls. These authors [9] showed that within a group of adolescents aged 12-18 years, 1,7% of boys and 1,4% of girls were addicted to the Internet. Similarly, Yang [11] points out that more boys than girls aged 12-19 years fulfil the criteria of the medium (40-59 points) and high (above 60 points) Internet addiction as defined based on the Internet Addiction test, with boys playing more often than girls the computer games, and girls more often choosing communication with other online users (mainly through Internet chat lines) and loading files from the Internet [11,12].

The analyses carried out show the need to approach the girls and boys separately in the Internet addiction research.

The results obtained in the study allowed us to form the following conclusions:

Conclusions

1. Compared to the girls, the boys are characterised by a greater severity of the Internet addiction.
2. Statistically significant differences were found between the boys and girls attending upper secondary school within a larger number of Internet addiction symptoms measured by the Internet Addiction test as compared to the boys and girls attending lower secondary school.

References

1. Young K.S. Caught in the net. New York: John Wiley & Sons; 1998.
2. Shapira N.A., Lessig M.C., Goldsmith T.D., Szabo S.T., Lazoritz M., Gold M.S., Stein D.J. Problematic internet use: proposed classification and diagnostic criteria. *Depress. Anxiety*, 2003; 17(4): 207-216.
3. Beard K.W., Wolf E.M. Modification in the proposed diagnostic criteria for internet addiction. *Cyberpsychol. Behav.*, 2001; 4: 377-383.
4. Siomos K.E., Dafouli E.D., Braimiotis D.A., Mouzas O.D., Angelopoulos N.V. Internet addiction among Greek adolescent students. *Cyberpsychol. Behav.*, 2008; 11(6): 653-657.
5. Korea National Statistics. Korean Statistics Yearbook. Seoul, Korea: Korean National Statistics; 2005.
6. Lam L.T., Peng Z.W., Mai J.C., Jing J. Factors associated with Internet addiction among adolescents. *Cyberpsychol. Behav.*, 2009; 12: 551-555.
7. Ko C.H., Yen J.Y., Chen C.C., Yen C.F. Gender differences and related factors affecting online gaming addiction among Taiwanese adolescents. *J. Nerv. Ment. Dis.*, 2005; 193: 273-277.
8. Ko C.H., Yen J.Y., Yen C.F., Chen C.S., Wang S.Y. The association between Internet addiction and belief of frustration intolerance: the gender difference. *Cyberpsychol. Behav.*, 2008; 11(3): 273-278.
9. Kaltiala-Heino R., Lintonen T., Rimpelä A. Internet addiction? Potentially problematic use of the Internet in a population of 12-18 year-old adolescents. *Addict. Res. Theory*, 2004; 12: 89-96.
10. Johansson A., Gotestam K. Internet addiction: characteristics of a questionnaire and prevalence in Norwegian youth (12-18 years). *Scand. J. Psych.*, 2004; 45: 223-229.
11. Yang C.K. Sociopsychiatric characteristics of adolescents who use computers to excess. *Acta Psychiatr. Scand.*, 2001; 104: 217-222.
12. Weiser E.B. Gender Differences in Internet Use Patterns and Internet Application Preferences: A Two-Sample Comparison. *Cyberpsychol. Behav.*, 2000; 3: 167-178.
13. Pawłowska B., Potembska E. Właściwości psychometryczne Kwestionariusza do Badania Uzależnienia od Internetu (KBUI). *Badania nad Schizofrenią*, 2009; X, 10: 310-321.

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