Problematic mobile phone using among the Polish and Belarusian University students, a comparative study

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ABSTRACT

Introduction: The use of mobile phones has increased worldwide during the last decade especially in adolescents.
Purpose: To examine the role of a mobile phone in the students' life, signs of addiction, and whether there are differences in phone using between the Polish and Belarusian students.
Materials and methods: The study comprised 160 students from Belarus and 227 from Poland. We used a questionnaire included the test of mobile phone addiction.
Results: Most of the students had the mobile phones. Of the students 35.2% from Poland and 68.8% from Belarus were convinced on the harmful effects of mobile phone. Most respondents declared that the mobile phone could switch off in the theatre (65.2% from Poland, 30% from Belarus), and in the church (60.8% from Poland, 33.8% from Belarus). Of the students, 46% from Poland and 28.8% from Belarus knew a monophobia definition. The majority of respondents from Poland (83.7%) and Belarus (71.9%) have never switched off their phones**.** Overall, 22.9% of the Polish students and 10.4% of Belarusian students had the symptoms of mobile phone-addiction.
Conclusions: Most students from Poland and Belarus were convinced on the harmful effect of the mobile phone using. More respondents from Poland than Belarus knew that mobile phone users could be addicted. Almost 1/5 of students from Poland and 1/10 from Belarus had the symptoms of mobile phone-addiction.
Key words: students, mobile phone, Poland, Belarus

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Received: 23.01.2012
Accepted: 22.04.2012
Progress in Health Sciences
Vol. 2(1) 2012 pp 45-50.

INTRODUCTION

The global mobile phone market now stands at approximately 1.8 billion subscribers, and is forecasted to reach 3 billion by the end of 2010, by which time nearly half of all human beings on the planet are expected to own and use a cell phone [1]. The use of mobile (cellular) phones has increased worldwide during the last decade especially in children and adolescents [2-4]. Although voice calls account at present for about 80% of cell phone revenue, the extraordinary success of the short message service (SMS), particularly among younger cell phone users, continues to surprise network operators: SMS is now expected to dominate mobile messaging in both traffic volume and revenue well into the last quarter of the present decade [5,6]. The literature stresses that a major role in the emergence of drug play a social, cultural, economic and moral, in such as race, social background, psychological, desire to reduce feelings of loneliness, stress, desire to be understood and accepted by others, desire to reduce the pain and suffering, the desire to improve mood or escape from reality [5-8] .

Mobile phone use can provide many benefits, but a problematic use can be commonly identified [6-8]. According to Bianchi and Philips' [9] problem mobile phone use is a function of age, extraversion, and low self-esteem, but not neuroticism.

In an Australian study, [10] carried out on 32 young aged between 16 and 24 years, focusing on the psychological factors relating to mobile phone use and whether mobile phone addiction was occurring among this group. Mobile phone use was believed to provide numerous benefits to users and is an intrinsic part of most young people's lives. Some young people were extremely attached to their mobile phone with symptoms of behavioural addiction revealed in participants' descriptions of their mobile phone use.

Problematic mobile phone use can be considered to be an addiction-like behavior. Takao et al. [7] examined the correlation between problematic mobile phone use and personality traits. They found that problematic mobile phone use was a function of gender, self-monitoring, and approval motivation but not of loneliness. The measurements of these addictive personality traits would be helpful in the screening and intervention of potential problematic users of mobile phones.

Mobile phone addiction was described applying Brown's criteria for behavioural addictions such as: cognitive salience, as the activity dominates the person's thoughts and behaviours; conflict with other persons or activities; euphoria or relief, a feeling of short-term pleasure from engaging in the behaviour; tolerance or loss of control over the behaviour; withdrawal, as experiencing unpleasant feelings when unable to engage in the behaviour; relapse and reinstatement, indicated when people unsuccessfully attempt to cut down on the behaviour, subsequently engaging in similar or higher levels than previously [11]

Additionally, the Internet can play an important role in the development and maintenance of other addictions, such as pathological gambling and sex addiction. In contrast to the case of the internet, maladaptive use of mobile phones may be considered abuse, but not addiction, since their use does not lead to the rapid emotional changes or the playing with identities that can take place in chats and online role games [12].

To our knowledge, no study has been conducted on problematic mobile phone use among the Polish and Belarusian students.

The aim of this study was to examine the role of mobile phone in the students' life, evaluation of the mobile phone-addition symptoms, and compare the differences between students from Poland and Belarus.

MATERIALS AND METHODS

The researches were conducted among students of the Faculty of Health Prevention of the Medical University of Białystok in Poland, and University of Grodno in Belarus. The study included a total of 160 students from Belarus and 227 Polish students. The study used a questionnaire specially designed for the purpose of this study, based on data from the literature [13]. The study was conducted between 2009 and 2010. The protocol was approved by the Ethical Committee of the Medical University of Białystok.

We used a questionnaire consisted of three parts. First part consisted of 13 questions, including 5 demographic (age, gender, year of study, faculty, residence) and 6 related to the topic of basic research. For example: have you got a mobile phone?, mobile phone role played by the respondent's life (security, doctor contact, contact with close people, working tool, children control by parents), opinion on dangers of using mobile phones, costs of using the phone, using the mobile phone in the cemetery, doctor, a cafe/restaurant, cinema, theatre, church, train/ bus, at work, in a shop in the hospital, during classes at the University and in the offices. Second part contains six questions relating to: number of mobile, who pays phone billings, mobile phone addiction, what is a mean nomofobia term, which functions in the mobile phone respondent using (hardware to talk, SMS, camera, Internet connection, watch, games, taking notes) and when tested off the phone. Third part contains test mobile phone addiction [4,5],

consisting of 10 questions about attitudes to SMS, the impact on the test tones from your friends, boyfriend (girlfriend), what does the test with the phone when it is at school, the lecture or in a similar situation, what happens to your phone when in such a respondent goes on Saturday evening with friends, who knows his cell phone number, how often you change the mobile phone, which draws attention when purchased, and draws attention to the promotion of free SMS, when the charges the battery of your camera, and in what situations are enabled phone. The test responses in the three possible options: a, b and c. Selecting the most studied indications of a (group, I) have already testified that the mobile phone for the person concerned is not essential. Selecting the most answer "b" (Group II) - that the respondent uses a mobile phone in the right way. Most indications of 'c' (Group III) - demonstrated a cell phone addiction. Data analysis was performed using Statistica PL v. 8.0 software. The differences between Polish and Belarussian students were examined by Chi-square test. Differences and were regarded as statistically significant when $p \leq 0.05$.

RESULTS

The study included 227 Polish students and 160 Belarusian students. A total of 69.6 % respondents from Poland were between 21 and 30 years of age, and 30.4% were in the age group 18 - 20 years of age. In this study group, dominated women 171 (75.3%) and they lived in the city - 171 (75.3%) patients ($p<0.001$). Men were 36 (15.9%) and they lived in the country residents - 56 (24.7%). A total of 68.1% students from Belarus were between 18 - 20 years of age, and 39.1% were between 21 and 30 years of age. Similarly like in Poland dominated women (55.6%) in a slightly manner and they lived in the city - 123 (76.9%). Men were 371 (44.4%) and they lived in the country residents - 56 (23.1%).

In Poland and Belarus, most of the participants had a mobile phone 189 (83.3%) and 109 (68.1%) respectively. Significantly, ($p=0.0018$) more students from Belarus 51 (31.9%) had two mobile phones than 33 (14.5%) Polish students.

Almost 156 (69%) of the Polish students owned personal cellular phones from 6 to 10 years, from 2 to five years - 36 (15.9%), above 10 years - 24 (10.6%), and up to one year - 11 (4.8%) students. In the Belarusian group, significantly ($p<0.01$) more respondents owned mobile phones from 2 to five years 111 (69.4%), from 6 to 10 years 46 (28.8%), and above 10 years only 3 (1.8%) students.

Almost all, 193 (94%) of the Polish and 160 (100%) Belarusian students used mobile phones to make and receive calls. Overall, 176 (77.5%) of the students from Poland and 94 (58.8%) from Belarus used mobile phones for sending text messages. Similar number 94 (41.4%) of the Polish and 55 (34.4%) of Belarusian students used the phones to take photos. Only 37 (16.3%) from Poland and 30 (18.8%) from Belarus used cellular phones for games, 18 (7.9%) and 41 (25.6%) used the phones to access to the Internet, respectively.

Telephone bills Polish students usually paid of their own pocket money - 149 (65.6%), 74 (32.6%) yourself, 71 (31.3%) parents, 14 (6.7%), grandparents or siblings, and only 19 (8.4%) of respondents paid in various ways.

Almost 69 (43.1%) students from Belarus paid their phone bills in the different ways. Parents covered the bills for 33 (20.6%) students. Thirty (18.8%) students paid from a pocket money, 24 (15.0%) with self-earned money, and only 4 (2.5%) by grandparents or siblings.

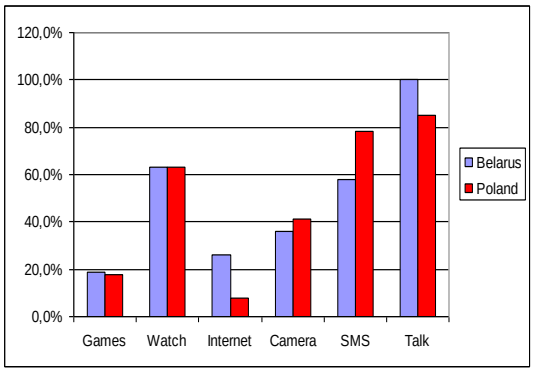

Fig. 1. Ways to use mobile phones by students from Poland and Belarus

Similar proportion of the respondents from Poland - 165 (72.7%) and Belarus 138 (86.3%) felt that the mobile phone facilitates their contact with people. According to 127 (55.9%) of the Polish students and 109 (68.1%) the Belarusians mobile phone gives a sense of security (call for help, call to a doctor or contact with someone close). Almost 99 (46.3%) of the Polish students and 96 (60.0%) of the Belarusians answered that mobile phone is a working tool. Significantly, ($p<0.01$) more students from Belarus 110 (68.8%) than 80 (35.2%) Poland were convinced that mobile phone using is harmfulness. Significantly, ($p<0.01$) more the Polish respondents 49 (21.6%) than 14 (8.8%) the Belarusians was thought it is particularly harmful to children. The majority of respondents (62.1% from Poland and 59.4% from Belarus) argued that sometimes there are the situations in which subjects feel vulnerable to annoying or embarrassing to the mobile phones.

Significantly, ($p<0.01$) more 130 (57.3%) of the Polish students than the Belarusians 48.

Table 1. Preferred behaviors of the mobile phone owners, as soon as the telephone will ring.

Place	To pick up the phone				He/She should switch off the mobile phone				It difficult to say	
	to talk freely		so to talk so not to disturb anyone		and not to talk		earlier before he/she will find himself/herself in this place			
	Poland	Belarus	Poland	Belarus	Poland	Belarus	Poland	Belarus	Poland	Belarus
cemetery	4 %	4.4 %	27.3 %	20.0 %	15.4 %	45.0 %	39.2 %	25.6 %	14.1 %	5.0 %
party	20.3 %	1.9 %	51.1 %	10.0 %	15.0 %	45.6 %	7.9 %	40.6 %	5.7 %	1.9 %
date	15.9 %	21.3 %	40.7 %	36.9 %	33.0 %	25.0 %	20.7 %	9.4 %	11.5 %	7.5 %
doctor	6.2 %	1.9 %	14.1 %	13.8 %	26.0 %	58. %	47.1 %	25.0 %	6.6 %	1.3 %
cafe, restaurant	16.3 %	32.5 %	50.2 %	55.6 %	12.8 %	5.0 %	11.9 %	6.3 %	8.8 %	0.6 %
ciemna	2.2 %	4.4 %	9.7 %	38.1 %	27.3 %	36.9 %	57.7 %	20.6 %	3.1 %	0
church	7.0 %	1.9 %	11.5 %	5.6 %	17.2 %	56.9 %	60.8 %	33.8 %	3.5 %	1.9 %
train, bus	33.5 %	57.5 %	44.1 %	39.4 %	7.5 %	0.6 %	6.2 %	1.3 %	8.8 %	1.3 %
job	27.3 %	24.4 %	52.0 %	58.1 %	8.4 %	8.1 %	4.4 %	2.5 %	7.9 %	6.9 %
shop	22.5 %	65.6 %	55.1%	31.3 %	10.6 %	2.5 %	7.0 %	0	4.8 %	0.6 %
hospital	14.1 %	11.3 %	37.1 %	46.9 %	26.4 %	28.8 %	21.1 %	11.3 %	6.6 %	1.9 %
theatre	9.3 %	1.9 %	4.8 %	22.5 %	16.3 %	45.0 %	65.2 %	30.0 %	4.4 %	0.6 %
during the tasks	7.9 %	3.1 %	7.5 %	19.4 %	20.7 %	50.0 %	60.4 %	23.8 %	3.5 %	3.8 %
office	8.8 %	3.8 %	27.3%	14.4 %	26.9 %	48.1 %	31.3 %	28.8 %	9.3 %	5.0 %

(30.0%) reported confusion in the family due to a high fee spent for mobile phone use.

The Polish students reported that the phone could receive a call and talk to anyone does not interfere with the train and bus (33.5%), work (27.3%), in a shop (22.5%), and at a party (20.3%). Simiraly, the Belarusian students answered. According to the Polish and the Belarusian students, the mobile phones should be switched off in the theatre and church. Details are shown in Table 1.

Significantly, ($p=0.0012$) more respondents 175 (77.1%) from Poland than from Belarus 69 (43.1%) were convinced that the mobile phone can be addicted. The opposite opinion was expressed by 27 (11.9%) of Poles and 79 (21.6%) of Belarusians.

Nomofobia term means feeling uncomfortable (and even fear) caused no potency to communicate via mobile phone, knew 87 (38.3%) of respondents from Poland, and 46 (28.8%) from Belarus. Almost 101 (45%) of the Polish and 49 (30.6%) of the Belarusian students did not have an opinion on this matter.

Considerably, ($p<0.01$) more respondents from Belarus 65 (40.6% 5) than Poland 39 (17.2%) believed that this is not the correct definition.

Most of 190 (83.7%) the Polish and 115 (71.9%) of the Belarusian students declared that they had never switch-off their phones.

Analysis of the mobile phone test addiction led to the conclusion that the majority of the respondents had to be in Group II. Most of the respondents selected options "b" 152 (69.5%) from Poland and 121 (75.6%) from Belarus. Variants of the "c" (group, III) preferred 52 (22.9%) of the Polish and 31 (10.4%) of Belarusian students. Variants of the "a" (group, I) selected 23 (10.1%) of the Polish and 8 (5.0%) of Belarusian students.

DISCUSSION

In the present study, almost all surveyed students had mobile phones. They used them usually for sending text messages, making photos and access to the Internet. Significantly, more students from Belarus than Poland were convinced that mobile phone using is harmfulness. Most of the Polish and the Belarussian students declared that they had never switch-off their phones. Analysis of the mobile phone test addiction led to the conclusion that the majority of the respondents had to be in Group II. Our results are in the agreement with previous reports [6, 7, 10-12] .

We did not use a validated Mobile Addition Test. The Mobile Addiction Test is a questionnaire developed by Italian authors and published in 2010 in order to assess problematic mobile phone use [14]. Our study was conducted between 2009 and 2010.

The CBOS surveys in 2001 showed that during this period 42% of Poles had at least one mobile phone, while in 2006 more than half of Poles (54%) had a cellular phone [15]. The mobile phones had mostly young people. The CBOS surveys of 2008 numbers of mobile phone users are growing rapidly, and the mobile phone already had the majority of respondents (71%) [16]. In 2009, the surveyed had cellular phones up to 81.8%.

In the opinion of the respondents from the CBOS survey of 2001 mobile phone ownership, first of all, gave them a sense of security, call for help or doctor, contact with someone close (78%) [15]. Similarly, in the present study, the respondents reported that cellular phone gives the sense of security. One-third of respondents believed that the mobile phone allows parents to more efficient control of the children. Most owners of mobile phones (65%) of the CBOS survey in 2001 declared that had no symptoms of mobile phone addiction [16].

In the literature, there are few reports on nomophobia. King et al. [17] presented the case report of a patient who has continuously kept his mobile phone with him since 1995, because of his overwhelming need to feel safe and to be able to immediately call emergency services and people he trusts should he feel sick. The patient was treated with medication and cognitive-behavior psychotherapy. He has remained asymptomatic for four years. The patient showed significant medical improvement in his panic disorder and phobias, but there has been no change in his nomophobia.

Flynn et al. [18] described two cases to illustrate the use of mobile phones with in vivo exposure treatment of refractory driving phobias. Number of miles driven and subjective ratings of anxiety were recorded during a baseline phase and eight weeks of treatment involving a total of 24 driving practices. One subject's use of a mobile phone increased the number of miles driven alone, but the second subject made little progress and regressed following removal of the phone.

Reid and Reid [19] studied 158 adults who experienced social anxiety and loneliness. They found that lonely participants preferred making voice calls and rated texting as a less intimate method of contact to be used only as a last resort, whilst anxious participants estimated making fewer voice calls and preferred to text, achieving expressive and intimate contact using this medium. Anxious participants also used texting as a diversion, to kill time or avoid some other activity. In the present study, we did not examine the psychological profile of the students (anxiety, depression and loneliness).

Dixit et al. [20] found that 18.5% students were nomophobes. In gender-based observation, 19% males and 18% females were found to be nomophobes. No significant association was observed in relation to gender, place of stay and academic sessions with a nomophobia score. Approximately, 73% students responded that they keep their mobile phones with them even when they go to sleep (for 24 h a day), 18.5% students used mobile phone during college hours and 8.5% students used it when absolutely necessary, 20% students responded that they lose their concentration and become stressed when they do not have their phone around or their mobile has run out of battery. In the present study, most respondents from Poland and from Belarus have never turned off their phones. Analysis of test dependence of mobile phone led to the conclusion that the majority of respondents from Poland and from Belarus, cellular phone, treated as a technical measure, which is used during the day.

Problematic mobile phone use is not yet to be considered as a sound diagnostic construct, but recent studies [10, 11, 21-23] support the hypothesis defining it as a behavioural addiction.

In a recent large population Italian study [24] from 2011, a questionnaire study was carried out on behavioural addictions in adolescents and young adults. In all, 2,853 students aged 13–20 years were evaluated during a health promotion program about behavioural addictions. The Mobile Addiction Test, the South Oaks Gambling Screen-Revised for Adolescents, the Compulsive Buying Scale, the Internet Addiction Test, the Exercise Addiction Inventory, and the Work Addiction Risk Test were used. Overall prevalence of problematic mobile phone use was 6.3%. Furthermore this condition was associated with compulsive buying.

Furthermore, an excessive mobile phone use has been identified as a risk factor for neck-shoulder and low back pain in adolescents [25], for hearing and vision problems [26].

The present study has some limitations that will be reviewed in future studies. The greatest limit of the research is the small size of the sample: the validity of the conclusions drawn up to this point would certainly be increased with a larger sample. A second limitation is the lack of psychometric scales such as: the Personality Questionnaire, the Self-Rating Depression scale, the Self-Rating Anxiety Scale.

CONCLUSIONS

Most students from Poland and Belarus were convinced on the harmful effect of the mobile phone using. More respondents from Poland than Belarus knew that mobile phone users could be addicted. Almost 1/5 of students from Poland, and 1/10 from Belarus had the symptoms of mobile phone –addiction.

Conflicts of interest

We declare that we have no conflicts of interest.

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