

Gender and severity of symptoms of mobile phone addiction in Polish gymnasium, secondary school and university students

Płeć a nasilenie objawów uzależnienia od telefonu komórkowego u uczniów polskich szkół gimnazjalnych, średnich i wyższych

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Abstract

The risk of mobile phone addiction and the addiction itself represent an ever larger psychological and social problem pointed out by psychiatrists, psychologists and educationalists.

Addiction to the mobile phone is not a homogeneous phenomenon, and, therefore, some researchers distinguish among addiction to sending and receiving text messages, addiction to voice calls and addiction to mobile phone features and mobile phone games.

Pawłowska and Potembska, based on a study of a group of Polish adolescents, have distinguished four dimensions of mobile phone addiction which form the scales of their Mobile Phone Addiction Assessment Questionnaire (*Kwestionariusz do Badania Uzależnienia od Telefonu Komórkowego, KBUTK*). These dimensions cover symptoms of 1/ addiction to mobile phone features, 2/ addiction to voice calls and text messages, 3/ trying to meet the need for acceptance and closeness by establishing social relationships using phone calls and text messages, and 4/ preference for communicating and expressing emotions through text messages and phone calls over face-to-face communication.

In the literature, studies are available which show that the predisposition towards the individual types of mobile phone addiction is gender-related. Therefore, the aim of the present study was to provide an answer to the question of whether, and what, differences occur between women and men in the severity of symptoms of mobile phone addiction?

The study included a total of 493 persons, among which there were 99 gymnasium students (65 girls and 36 boys) aged 13 to 16 years, 186 secondary school students (124 girls and 62 boys) aged 17 to 19 years and 208 university students (140 women and 68 men) aged 20 to 22 years.

The study was conducted using a socio-demographic questionnaire and the Mobile Phone Addiction Assessment Questionnaire (KBUTK) by Potembska and Pawłowska.

A t-test comparison of the scores obtained by the surveyed women and men on KBUTK scales afforded the following conclusions:

1. Women significantly more frequently than men use the mobile phone to satisfy their need for acceptance and closeness, to establish and maintain social relationships and to express their emotions.
2. Women are characterized by a higher severity of symptoms of addiction to voice calls and text messages than men.
3. Men significantly more frequently than women use the mobile phone to listen to music, take pictures and videos, play games, and connect to the Internet.

Keywords: addiction to the mobile phone, gender, adolescents

Streszczenie

Zagrożenie uzależnieniem i uzależnienie od telefonu komórkowego stanowi coraz większy problem psychospołeczny, na który zwracają uwagę zarówno psychiatrzy, psycholodzy, jak i pedagodzy.

Uzależnienie od telefonu komórkowego nie jest zjawiskiem jednorodnym, dlatego też niektórzy badacze wyodrębniają: uzależnienie od wysyłania i odbierania wiadomości SMS, uzależnienie od rozmów telefonicznych, uzależnienie od funkcji aparatu telefonicznego oraz od gier zamieszczonych w telefonie komórkowym.

Pawłowska i Potembska, na podstawie badań przeprowadzonych na grupie polskiej młodzieży wyodrębniły cztery wymiary uzależnienia od telefonu komórkowego, które tworzą skalę zbudowaną przez autorki Kwestionariusza do Badania Uzależnienia od Telefonu Komórkowego (KBUTK). Wymiary te obejmują objawy: 1/ uzależnienia od funkcji aparatu telefonicznego, 2/ uzależnienia od rozmów i wiadomości SMS, 3/ dążenie do zaspokajania potrzeby akceptacji i bliskości za pomocą kontaktów nawiązywanych za pomocą rozmów i SMS-ów oraz 4/ preferowanie komunikacji i wyrażania emocji za pomocą SMS-ów i rozmów telefonicznych nad komunikację „twarzą w twarz”.

W literaturze dostępne są badania, które wskazują, że do poszczególnych typów uzależnienia od telefonu komórkowego predysponuje w głównej mierze płeć. Dlatego też celem badań przeprowadzonych przez autorki artykułu było udzielenie odpowiedzi na pytanie: czy i jakie różnice występują między kobietami i mężczyznami w zakresie nasilenia objawów uzależnienia od telefonu komórkowego?

Badaniami objęto łącznie grupę 493 osób, do której zakwalifikowano 99 uczniów gimnazjum (65 dziewcząt i 36 chłopców), w wieku od 13 do 16 roku życia, 186 uczniów liceum (124 dziewczęta i 62 chłopców), w wieku od 17 do 19 roku życia oraz 208 studentów (140 kobiet i 68 mężczyzn), w wieku od 20 do 22 lat.

W pracy zastosowano Ankietę socjodemograficzną oraz Kwestionariusz do Badania Uzależnienia od Telefonu Komórkowego KBUTK, autorstwa Potembskiej i Pawłowskiej.

Porównanie za pomocą testu t wyników uzyskanych przez badane kobiety i mężczyzn w skalach KBUTK pozwoliło na sformułowanie następujących wniosków:

1. Kobiety istotnie częściej niż mężczyźni wykorzystują telefon komórkowy do zaspokajania potrzeby akceptacji, bliskości, nawiązywania i podtrzymywania kontaktów społecznych oraz wyrażania emocji.
2. Kobiety charakteryzuje większe nasilenie objawów uzależnienia od rozmów i wiadomości SMS, niż mężczyźni.
3. Mężczyźni istotnie częściej niż kobiety wykorzystują telefon komórkowy do słuchania muzyki, robienia filmów, zdjęć, grania w gry i łączenia się z Internetem.

Słowa kluczowe: uzależnienie od telefonu komórkowego, płeć, młodzież

Introduction

The risk of mobile phone addiction and the addiction itself represent an ever larger psychological and social problem pointed out by psychiatrists, psychologists and educationalists.

By analogy to the criteria of Internet addiction described by Young [1] and Augustynek [2] and with reference to the criteria of pathological gambling specified in DSM-IV-TR [3], mobile phone addiction can be defined as problematic, dysfunctional use of the mobile phone, which is characterized by the occurrence, over the previous 12 months, of the following symptoms:

- A strong desire to use the mobile phone, make phone calls or send text messages, expressed as constant preoccupation with those activities.
- The need to increase the frequency and time of making phone calls and sending text messages.
- Repeated unsuccessful efforts to cease or reduce the number of phone calls made and text messages sent.
- Withdrawal symptoms such as restlessness, anxiety and depression associated with attempts to cease or reduce the number and time of phone calls and the number of text messages sent;
- Making longer phone calls and sending a larger number of text messages than originally intended.
- Financial, career, family and social problems caused by mobile phone use.
- Lying to family and friends to conceal the costs of and the time devoted to making phone calls and sending text messages.
- Use of the mobile phone as a way of escaping from real problems or as a mood enhancer (to relieve loneliness, anxiety, depression or guilt).

It can be assumed that, similarly to Internet addiction, mobile phone addiction is not a homogeneous phenomenon, and, therefore, some researchers distinguish among addiction to sending and receiving text messages [4,5], addiction to voice calls [4], addiction to mobile phone features [4,5] and addiction to mobile phone games [5].

Pawłowska and Potembska [4], based on a study of a group of Polish adolescents, have distinguished four dimensions of mobile phone addiction which form the scales of their Mobile Phone Addiction Assessment Questionnaire (*Kwestionariusz do Badania Uzależnienia od*

Telefonu Komórkowego, KBUTK). These dimensions include the symptoms of 1/ addiction to mobile phone features, 2/ addiction to voice calls and text messages, 3/ trying to meet the need for acceptance and closeness by establishing social relationships using phone calls and text messages, and 4/ preference for communicating and expressing emotions through text messages and phone calls over face-to-face communication.

In the literature, there are studies [6] which suggest that predisposition to the individual types of mobile phone addiction is mostly gender-related. Bianchi et al. [6] have pointed out that women, more frequently than men, use the mobile phone to maintain social relationships, whereas men use it to make business calls. They found no statistically significant differences between men and women in the number of text messages they sent [6]. By contrast, Igarashi et al. [7] have reported that girls, more often than boys, establish interpersonal relationships via text messages. Similarly, Doring et al. [8] believe that girls talk on the mobile phone and send text messages more often than boys.

Ling [9] found that in the years 1997 to 2001 mobile phones were more often used by boys than by girls, as the former treated them primarily as a technical innovation. Since 2001, girls have started to use mobile phones significantly more frequently than boys, as it has become their main tool for developing interpersonal relationships [9]. Wilska [10] emphasizes that girls more often overuse mobile phones to send text messages and to make phone calls than boys, who focus more on stylish looks and technical features of a phone because they are more interested in new technologies [9,10].

In view of a lack of similar studies in Poland, the present authors have made an attempt to compare the severity of mobile phone addiction in men and women. The aim of the study was to answer the following research question:

- whether and for what symptoms (dimensions) of mobile phone addiction there occur differences between women and men.

On the basis of the literature of the subject, a hypothesis was formulated which pointed to the occurrence of significant differences between women and men in the severity of different symptoms of mobile phone addiction.

Participants

The study included a group of 493 persons, among which there were 99 gymnasium students (65 girls and 36 boys) aged 13 to 16 years, 186 secondary school students (124 girls and 62 boys) aged 17 to 19 years and 208 university students (140 women and 68 men) aged 20 to 22 years.

Methods

The study was conducted using a socio-demographic questionnaire and the Mobile Phone Addiction Assessment Questionnaire KBUTK by Potembska and Pawłowska [4], which enabled determination of the severity of symptoms of mobile phone addiction in the investigated persons [4]. KBUTK consists of 33 questions (Questionnaire Items and the results of factor analysis are shown in the Annex to the article, p. 438). The coefficients of reliability for the individual factors-scales are high: Cronbach's $\alpha=0.91$ for the Acceptance and Closeness scale; Cronbach's $\alpha=0.81$ for Addiction to Mobile Phone Features; Cronbach's $\alpha=0.85$ for Addiction to Text Messaging and Voice Calls; and Cronbach's $\alpha=0.85$ for Indirect Communication. The reliability coefficient for the total score on the KBUTK questionnaire is .91. A test-retest was performed within one month on a group of 86 persons, and the following correlation coefficients were obtained for the individual scales: Acceptance and Closeness, $r=0.79$, ($p<0.001$); Addiction to Mobile Phone Features, $r=0.78$, ($p<0.001$); Addiction to Text Messaging and Voice Calls, $r=0.81$, ($p<0.001$); and Indirect Communication $r=0.74$, ($p<0.001$). The KBUTK questionnaire is a reliable instrument with good psychometric properties that is used to investigate different dimensions of mobile phone addiction.

Results

To verify the research hypothesis, a t-test was used to compare mean scores obtained by women and men on KBUTK scales (Table 1).

Statistical analyses revealed that women had statistically significantly higher scores on the KBUTK scales of Acceptance and Closeness, Addiction to Text Messaging and Voice Calls, and Indirect Communication. Men had higher, though not statistically significant scores on the scale Addiction to Mobile Phone Features.

The results showed that women, significantly more often than men, preferred communication via the mobile phone to direct meetings; they more often called and texted their acquaintances than met them face-to-face and more often reported being able to express negative emotions such as sadness or anger only over the mobile phone. Women significantly more often than men made unsuccessful attempts at reducing the number of phone

calls and text messages, more often reduced their sleeping hours in favor of talking on the phone, paid very high bills for both phone calls and text messages, exceeding their calling and texting plans; they more often kept the costs of phone calls secret from their families, played down the number of the mobile phone calls they made, and had another, spare mobile phone on them.

The results also demonstrated that women, significantly more often than men eagerly awaited text messages from their friends and felt joy and excitement when they received text messages, as in their opinion text messages are a confirmation of acceptance and the fact of having friends. Women significantly more frequently than men reported that by sending text messages and making phone calls they were able to get away from the feeling of sadness and loneliness.

Men more often than women wanted to buy the newest model of a mobile phone and showed it off; they used the mobile phone to listen to music, take pictures and videos and send them to friends, as well as to play games and connect to the Internet. The differences between the compared groups of participants on the scale of Addiction to Mobile Phone Features, however, only pointed to a tendency, as they did not reach statistical significance ($p=0.07$).

In the next stage of the study, an attempt was made to answer the question whether, and for what symptoms (dimensions) of mobile phone addiction, there occurred differences between female and male university students.

Results of the t-test which was performed to compare mean scores obtained by the surveyed female and male university students on KBUTK scales are given in Table 2.

Statistical analyses revealed that women university students, compared to men, scored statistically significantly higher on the KBUTK scales of Acceptance and Closeness, Addiction to Text Messaging and Voice Calls, and Indirect Communication. Men had higher, though statistically non-significant mean scores on Addiction to Mobile Phone Features.

Women considerably more often than men believed that the text messages one receives and phone calls from friends made one feel accepted, liked, and popular and helped one to get away from negative emotions.

Female students significantly more often than men reported preference for communication via the mobile phone over direct meetings and were able to express negative emotions such as sadness or anger only over the mobile phone. Female students were characterized by a significantly higher severity of symptoms of addiction to voice calls and text messages than male students.

As a next step, a comparison was made between the scores obtained by secondary school boys and girls (Table 3).

Table 1. Comparison of mean scores obtained by gymnasium, secondary school and university students on KBUTK scales

KBUTK scales	Men (N=172)		Women (N=321)		t	p
	M	sd	M	sd		
Acceptance and Closeness	0.75	0.74	1.04	0.84	-3.73	0.001
Addiction to Mobile Phone Features	1.21	0.70	1.09	0.69	1.80	0.07
Addiction to Text Messaging and Voice Calls	0.50	0.58	0.65	0.69	-2.46	0.01
Indirect Communication	0.55	0.66	0.72	0.70	-2.61	0.01

Table 2. Comparison of mean scores obtained by university students on KBUTK scales

KBUTK scales	Men (N=68)		Women (N=140)		t	p
	M	sd	M	sd		
Acceptance and Closeness	0.60	0.66	0.91	0.77	-2.79	0.01
Addiction to Mobile Phone Features	0.99	0.60	0.92	0.63	0.71	0.48
Addiction to Text Messaging and Voice Calls	0.36	0.43	0.54	0.55	-2.61	0.01
Indirect Communication	0.38	0.52	0.57	0.60	-2.20	0.03

Table 3. Comparison of mean scores obtained by secondary school students on KBUTK scales

KBUTK scales	Boys (N=62)		Girls (N=124)		t	p
	M	sd	M	sd		
Acceptance and Closeness	0.76	0.74	1.08	0.81	-2.54	0.01
Addiction to Mobile Phone Features	1.32	0.66	1.23	0.66	0.94	0.35
Addiction to Text Messaging and Voice Calls	0.57	0.64	0.76	0.78	-1.65	0.10
Indirect Communication	0.58	0.64	0.80	0.73	-2.01	0.05

Table 4. Comparison of mean scores obtained by gymnasium students on KBUTK scales

KBUTK scales	Boys (N=42)		Girls (N=57)		t	p
	M	sd	M	sd		
Acceptance and Closeness	0.98	0.82	1.27	1.01	-1.55	0.124
Addiction to Mobile Phone Features	1.42	0.79	1.24	0.81	1.11	0.269
Addiction to Text Messaging and Voice Calls	0.64	0.66	0.67	0.78	-0.21	0.831
Indirect Communication	0.79	0.82	0.94	0.81	-0.89	0.373

Statistical analyses revealed that girls had statistically significantly higher scores than boys on the KBUTK scales of Acceptance and Closeness and Indirect Communication. These results demonstrated that girls, significantly more often than boys, preferred communication via the mobile phone over direct communication; they more often called and texted their acquaintances than met them face-to-face and more often reported being unable to express negative emotions such as sadness or anger otherwise than over the mobile phone.

The results showed that girls, significantly more often than boys, eagerly awaited text messages from their friends, felt joy and excitement when they received text messages, and believed that being phoned and texted was a confirmation of acceptance and the fact of having friends. Girls significantly more frequently than boys felt lonely when they did not receive text messages and also

more often reported that by sending text messages they were able to get away from a sense of sadness.

Table 4 shows results of a t-test comparing the scores obtained by gymnasium boys and girls on KBUTK scales.

The differences between the mean scores obtained by girls and boys attending gymnasium on KBUTK scales turned out to be statistically non-significant, though, similarly to the groups of secondary school and university students, they suggested that schoolgirls attending gymnasiums more often used mobile phones to satisfy their need for acceptance and closeness and to establish social relationships and express emotions, in contrast to boys, who more often used mobile phones to listen to music, take pictures and videos, play games, and connect to the Internet.

Discussion

The results obtained on the basis of the statistical analyses correspond with the opinion represented by

Bianchi et al. [6]. Those researchers [6] point out that predisposition to the individual types of mobile phone addiction is mostly gender-related. The study presented in this paper showed that women, more often than men, use the mobile phone to make phone calls and send text messages; they also more often make unsuccessful attempts at reducing the number of phone calls and text messages, reduce their sleeping hours to be able to talk on the phone, pay very high bills exceeding their calling and texting plan, keep the costs of phone calls secret from their families, play down the number of calls they make over the mobile phone, and have another, spare mobile phone on them. Women significantly more frequently than men express their emotions by means of phone calls and text messages and prefer communication via the mobile phone to direct conversation. Women, significantly more often than men eagerly await text messages and believe that thanks to them they feel more liked and accepted.

The results described above are coherent with the opinion of researchers [8,9,10,11], who believe that girls significantly more often than boys overuse mobile phones to send text messages [10] and to establish interpersonal relationships [9], expressing, in this way, their emotions [8]. Similarly, Economides and Grousopoulou [11] underline that girls aged 15 to 25 talk over the mobile phone more often than boys.

The results obtained in this study demonstrate that men more often than women buy newest models of mobile phones, boast about their features, and use mobile phones to listen to music, take pictures and videos, play games and connect to the Internet. These results are in agreement with the opinion of Ling [9] and Wilska [10], who believe that men are more interested in new technologies than women. These researchers [9,10] emphasize that boys more often than girls make use of the features of the mobile phone, treating it as a technical innovation [9], and prefer stylish-looking mobile phones [10]. Similar conclusions have been formulated by Doring et al. [8], who underline that men are more interested in the technological aspects of mobile phones than women.

The results obtained in the study lead to the following conclusions:

Conclusions

1. Women significantly more often than men use the mobile phone to satisfy their need for acceptance and closeness, to establish and maintain social relationships and to express their emotions.

2. Women are characterized by a higher severity of symptoms of addiction to voice calls and text messages than men.
3. Men significantly more frequently than women use the mobile phone to listen to music, take pictures and videos, play games, and connect to the Internet.

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Annex**KBUTK by B. Pawłowska and E. Potembska**

No.	Statements	NEVER	RARELY	SOMETIMES	OFTEN	ALWAYS
1	I eagerly await text messages from acquaintances					
2	I conceal the cost of my phone calls from my family					
3	I prefer to text my acquaintances to meeting them					
4	I use the mobile phone to play games					
5	When I don't receive text messages, I feel lonely					
6	There are situations when I make excuses for or downplay the number of phone calls I make					
7	I find it much easier to express my anger towards somebody in a text message than face-to-face					
8	I don't feel lonely when I get phone calls					
9	I pay very high bills for mobile phone calls and text messages					
10	I use the mobile phone to take videos					
11	I have a second, spare phone on me					
12	I use the mobile phone to take pictures					
13	Texting allows me to get away from a sense of sadness					
14	I spend more money on mobile phone calls than I originally planned					
15	Text messages allow me to express things I won't say directly to someone					
16	I am proud to have a new model of a mobile phone					
17	The text messages I receive confirm that I am accepted by others					
18	I spend more money on mobile phone calls than I originally planned					
19	I can express anger and sadness through a text message only					
20	I use the mobile phone to listen to music					
21	My friends and family complain that I overuse the mobile phone					
22	I feel accepted when I get phone calls from my acquaintances					
23	I connect to the Internet via a mobile phone					
24	I limit my sleeping hours in favour of talking on the mobile phone					
25	I use the mobile phone to send music and picture files to acquaintances					
26	I have made unsuccessful attempts at reducing the number of text messages I send					
27	I prefer communication by means of text messages to direct meetings with people					
28	I must have the newest model of a mobile phone					
29	I feel joy and excitement when I receive a text message					
30	I more readily talk to people over the phone than face-to-face					
31	I have made unsuccessful attempts at reducing the number of mobile phone calls I make					
32	I can express anger and sadness only over the phone					
33	I feel liked by others when I receive text messages					

Key to the Mobile Phone Addiction Assessment Questionnaire

Factor 1	Factor 2	Factor 3	Factor 4
Acceptance and Closeness	Addiction to Mobile Phone Features	Addiction to Voice Calls and Text Messaging	Indirect Communication
1	4	2	3
5	10	6	7
8	12	9	15
13	16	11	19
17	20	14	27
22	23	18	30
29	25	21	32
33	28	24	
		26	
		31	