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THE PSYCHO-SOCIAL BACKGROUND OF THE PROBLEMATIC INTERNET USE AND THE POSSIBILITIES OF PREVENTION

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INTRODUCTION

In recent years the internet has become an important part of our lives. The online world is available anywhere and anytime thanks to the wireless networks. The internet provides an easy and immediate way for all people to explore unlimited information, recreation and games while it is almost impossible for the parents to control and check their children's engagement in online activities. That is the reason why it is a high priority to teach the children efficient internet use and potential contingencies. Excessive internet use may lead to dependency and problematic internet use can have negative effects on the real life of the users, their social relationships, mental and physical health. Furthermore, the internet – through expanding the area of school – can give a new opportunity for online bullying. Cyberbullying (online harassment) can have more serious consequences than the traditional school bullying has. In this dissertation, I will introduce our research about the internet using habits of 14-24-year-old Hungarian youth. We also made comparisons with Hungarian and international data. Finally, a local health education program was developed with the adaptation of our experiences. Our results and the practical relevance of the prevention program will also be discussed.

THEORETICAL BACKGROUND

Teenagers and young adults stand mostly in the focus of internet research because these age groups spend the most time online (Holtz & Appel, 2011). Eighty-two % of university students and 60% of teenagers access the internet daily (McIntyre, Wiener, & Saliba, 2015). The 20-24-year-old young adults spend online an average of 120 minutes during the week and 192 minutes on the weekend (Livingstone, Haddon, Görzig, & Ólafsson, 2011). The 15-19-year-old teenagers spend online almost the same amount during the week, however the amount of the online time increase up to 210 minutes on the weekend. The goal of the internet using is mostly recreation, entertainment, making new friends, keeping in touch with others and searching for information (Ságvári, 2012).

It seems the online world can be a remedy for youth from the problems of their lives (Kardefelt-Winther, 2014). It became a modern and easily accessible way of escapism. Next to the escapism the other motivation can be the compensation of the inadequate offline social support with online social capital. Nevertheless, if the compensation holds on for a long time,

the internet will become the primary and most determining social environment and this excessive use will have negative effects on physical, psychological and social level.

The problematic internet use

Internet addiction comes with an uncontrollable urge of the use and the time not spent online deprecate (Young, 1998; 2004). In present research we use the term problematic internet use (PIU) because it emphasizes the negative effects of the excessive internet use without a pathological diagnosis and labelling of dependency or addiction (Spada, 2014). Young suggested that five specific sub-types could be categorized (Young, Pistner, O'Mara, & Buchanan, 2000): cybersexual addiction, cyber-relationship addiction, net compulsion, information overload and computer addiction. Later Young (2009) specified three subcategories: excessive gaming, sexual preoccupation and email/text messaging.

An extant literature reported on associations between PIU and psycho-social variables, such as dissatisfaction with life (Kabasakal, 2015), sensation seeking (Rahmani & Lavasani, 2011a), perceived stress (Velezmoro, Lacefield, & Roberti, 2010), shyness (Eroglu, Pamuk, & Pamuk, 2013) and loneliness (Fallahi, 2011). The children of single parents show higher level at PIU (Li, Garland, & Howard, 2014) and the lower level of the mother's education also correlated with PIU, like the lack of social support among teenagers (Gunuc & Dogan, 2013). The consumption of marijuana and alcohol were associated with more excessive internet use among university students (Korkeila, Kaarlas, Jääskeläinen, Vahlberg, & Taiminen, 2010), while both the use of alcohol and drugs correlated with higher risk of PIU among Korean high school students (Lee, Han, Kim, & Renshaw, 2013). There are also strong interrelationships among problematic internet use and aggression (Odacı & Çelik, 2013).

PIU can be one of the elements of the problem behavior syndrome because it correlates with the risk taking, aggressive behavior and substance use. The problem behavior syndrome also includes antisocial behavior, problems of integration in school, learning difficulties, risky sexual activities and mental disorders (Jessor & Jessor, 1977). Thus, we might hypothesize the problem behavior would manifests itself in online habits as welll.

Considering that youth spend more and more time online on daily basis, the preventive education would be necessary as early as possible. The parental responsibility is growing, they need to monitor the online activities of the children and regulate the amount of online hours. The good family relationships and communication can function as protection against the development of PIU (Park, Kang, & Kim, 2014). This should be underlined in the intervention and prevention programs.

THE AIM AND THE RELEVANCE OF THE RESEARCH

The first aim of the present research was to investigate the internet using behaviors and PIU among youth. Our second aim was to detect the psychological factors behind the increased internet use. We compared our data with former Hungarian research about PIU. Since ten years lasted between the two data collection, we can outline main points of a prevention program based on the differences. Our third aim was to investigate the role of different socio-demographic and behavioural variables, e.g., cyberbullying in the amount of internet usage. Our fourth aim was to detect how can be the experiments of other studies and our results adapted into a preventive program.

QUESTIONS AND HYPOTHESES OF THE RESEARCH

In accordance with our aims, the research questions can be systematized into the topics of the internet using habits and the amount of PIU.

I. *Research questions related to the internet use and online activities:* How often do young people use the internet? Are there any gender or age differences in the online activities?

   H_1: The amount of daily internet usage increased compared to the results of the last few years.

   H_2: Younger responders use the internet more hours a day than elder responders.

   H_3: There are differences in the online activities between the high school students and those studying in college/university; the younger students spend more time on the internet.

   H_4: There are gender differences in the online activities.

II. *Research questions related to PIU:* What kind of characteristics does the amount of PIU have? What kind of psycho-social factors are standing behind PIU? Is there a relationship between substance use and PIU? Can we consider PIU as the new element of the problem behavior syndrome?

   H_5: Comparing to former results, the amount of PIU increased in the last few years.

   H_6: Boys reach higher level of PIU than girls.

   H_7: PIU is associated with lower level of satisfaction with life.

H_8: Person with higher level of sensation seeking will reach higher level of PIU.

H_9: The higher level of perceived stress correlates with PIU.

H_{10}: Aggressive behavior is related to PIU.

H_{11}: We hypothesized that PIU might be associated with lower levels of social support and higher levels of loneliness, shyness and need to belong.

H_{12}: The family status and the educational level of the parents influence the PIU.

H_{13}: Substance use and PIU correlate.

H_{14}: PIU can be defined as a new element of the problem behavior syndrome because there is a relationship between PIU, aggression and substance use.

III.   *Research questions related to cyberbullying:* Are the teenagers and young adults cyberbullied? What kind of personality characteristics are associated with cyberbullying?

H_{15}: The responders were cyberbullied in the past 3 months.

H_{16}: The victims of cyberbullying are shier, lonelier and are more disposed to behave aggressively than others.

H_{17}: Cyberbullying is related to PIU.

IV.   *Research questions related to the preventive health education program:* How many participants will drop out from the program? Will the activation of the participants show any difference during the program? How can we integrate the PIU into a complex health education program?

H_{18}: High rates of the children and parents will stay in the program.

H_{19}: The children will show high level of activity during the program.

H_{20}: The opening motivation of the parents will be increased to the end of the program.

H_{21}: The children will evaluate positively each sessions of the health education program.

H_{22}: There will be difference in the motivation of the children according to the schooltypes.

H_{23}: The parental knowledge about health will be increased during the program, they will achieve higher scores at questionnaire in the end of the program.

H_{24}: The children do not know exactly how much time they spend online during a day.

H_{25}: The children will evaluate positively the internet based topic and the exercises about the PIU.

THE INTRODUCTION OF THE EMPIRICAL RESEARCH

Methods

Participants answered an online, anonymous survey that took approximately 20-25 minutes to complete. The survey was available between January 2014 and July 2014 at different online social networking sites and online forums which were popular online platforms among youths. Since online surveys can capture data relatively quickly and easily, an online data collection procedure was used. We also anticipated that problematic internet users might be more easily reached in this way.

Sample

The data collection had two turns (see Table 1). We had 386 female and 56 male responders in the first wave of the data collection. Due to the overrepresentation of girls in this sample (more than 90%) we skipped data from boys. We contacted special forums for boys (e.g. forums for the lovers of football or online games, groups for students learning natural sciences) in the second part of data collection in order to equate the number of boys and girls. Finally, 204 male participated in the research. To this sample we fitted the results of 204 female with the same ages to get the total data base of 408 responders. Participants were high school students (40%) and university students (60%).

Table 1. Responders in the two phases of the data collection

	Participants	Female	Male	Age
Data collection 1	442	386	56*	20.2 years ± 2.7
Data collection 2	408	204	204	20.81 years ± 2.63

*Notes: * the results of the boys were analysed in the 2nd phase of the data collection*

Measures and background factors

- Time spent on the internet

- Daily amount of different online activities (Žumárová, 2015)

- The Problematic Internet Use Questionnaire (Demetrovics, Szeredi, & Nyikos, 2004)

- Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985)

- Brief Sensation Seeking Scale (Mayer, Lukács, & Pauler, 2012)

- Perceived Stress Scale (Stauder & Konkoly Thege, 2006)

- The Aggression Questionnaire (Buss & Perry, 1992)

- Shyness Scale (Rai, 2011; Santesso, Schmidt, & Fox, 2004)

- Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013)
- UCLA Loneliness Scale (Csóka, Szabó, Sáfrány, Rochlitz, & Bódizs, 2007)
- Measures of Perceived Social Support (Turner & Marino, 1994)
- Substance use and prevalence of cyberbully during the past three months
- Indicators of social status (Pikó & Fitzpatrick, 2001)

Statistical analysis

SPSS for MS Windows Release 15.0 was used to analyse the data. Besides descriptive statistics, correlations were calculated for bivariate associations. The primary focus of the analyses was detecting the association between dependent variables (elements of PIU) and the independent psychological variables using multiple linear regression analysis. Finally, we used path analysis with the maximum likelihood estimation method (IBM SPSS Amos; version 22) to test the relationships among the study variables.

THE EMPIRICAL RESEARCH – RESULTS AND DISCUSSION

Consistent with the findings of previous studies (Livingstone et al., 2011) the internet plays a central role in the responders' life: 80% of the sample are online at least two hours a day, whereas 45% of the sample use the internet more than four hours a day. Our first hypothesis was supported since our results showed an increase in the daily amount of internet usage compared to former research (Livingstone et al., 2011). While some findings suggested that PIU might go together with earlier ages (Kitta, 2013; Holtz & Appel, 2011) our second hypothesis was not confirmed. Namely, our results show higher level of daily internet use among university students. Furthermore, there were differences in the online activities (H_3). University students used the internet for the purpose of the following activities: writing messages, surfing and searching for information. Previous studies also argued that there were gender differences in the online activities (Canan, Ataoglu, Ozcetin, & Icmeli, 2012). Boys spent more time on adult sites and reading news in our sample, while girls spent more time with watching films, reading books, listening to music online and the average daily internet use was also higher. Thus, the online activities of the boys and the girls were different (H_4).

We compared our results to the results of a ten years earlier research (Demetrovics et al., 2004). The amount of PIU was not different (H_5) however we found variance in the neglect and control disorder subscales. The higher level of control disorder indicates that the prevention programs should take attention to this problem. It is important to teach the children

to have a determined goal while using the internet and a rational time frame. We hypothesized higher level of PIU for the boys (H_6) as previous studies indicated (Şenormancı, Sarach, Atasoy, Şenormancı, Koktürk, & Atik, 2014), however our hypothesis was not confirmed because we did not found considerable age or gender differences.

We hypothesized correlations between PIU and the psycho-social variables (H_7-H_{11}). Our findings are broadly consistent with findings of previous studies since PIU was correlated with perceived stress (Velezmoro et al., 2010), satisfaction with life (Kabasakal, 2015), need to belong, loneliness (Esen, Aktas, & Tuncer, 2013) and shyness (Eroglu et al., 2013). Results revealed that mostly social motivation can stand behind PIU. Going online may serve as an escape from reality and problems for youth in the case of stress.

According to our supposition, the results also revealed positive significant relationships between aggression (H_{10}, Odacı & Çelik, 2013). Sensation seeking did not show correlation with PIU in contrast with former studies (Rahmani & Lavasani, 2011b). However, the perceived support from father, mother and friend showed negative relation with PIU. According to our results, the family status and the mother's educational level exert an influence on PIU (H_{12})

Path analysis indicated that PIU was directly associated with a higher need to belong, shyness and loneliness (see Figure 1). These results support findings from former studies (Mazzoni, Baiocco, Cannata, & Dimas, 2016) and implicate that offline environment, the stable social net can function as a protective factor against the development of PIU.
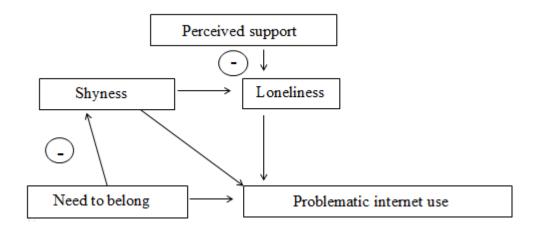

Figure 1. The simplified model of PIU

Our data do not support the assumption that PIU can be a new element of the problem behavior syndrome (H_{13}). We found negative relationship with alcohol while we could not

found any relation with smoking or drugs. A possible explanation would be that items of substance use are usually social activities whereas internet use is a lonely one.

Even after the second data collection, we have only several responders who have an ecperience of becoming a victim of cyberbullying. Therefore, we should interpret our data about it only with caveat. In concordance with our hypotheses (H_{16}-H_{17}), the cyberbullying correlated positively with the PIU, sensation seeking, loneliness and aggression similar to previous studies (Şahin, 2012). The satisfaction with life scale was negatively relatedto cyberbullying and PIU.

THE ELABORATION OF A PREVENTIVE HEALTH EDUCATION PROGRAM

The aims of the school health education program

The most efficient way to prevent PIU is educating the mode of conscious usage at early ages. Keeping this in mind we developed in the frame of a project (TÁMOP-6.2.5-B-13/1-2014-0001) a school health education program to grade-3 elementary school-children. The aim was to promote a universal school health education program. The topics were the following: concept of health, nutrition, exercise, sleep hygiene, stress management, healthy use and problems of the modern technology and medical education to get a complex view of healthy life. About 60-90 minutes once a week the children took part in the health club with their parents, where they were provided health information by a technique of experimental learning.

Before the sessionón on addictions, a homework was given for the children and their families. The families should write a list about the advantages and disadvantages of the different technical devices (e.g., computer, television, mobile phones). They created a screen diary and the school teacher reads a tale about a boy with PIU. This boy spends his whole day on the internet and shows all of the typical symptoms of PIU. Then the focus was put on the sources of happiness. With this exercise the teacher could bring the attention to healthy alternatives of the addictions. The homework for the next week was to create a healthy order of a day. This exercise orientated the children toward the effective time management and goal oriented internet usage. The children and their parents could give feedbacks about their experience and feelings at the end of every session.

Sample

The local health education program took place in four schools. The participants were grade-3 elementary school-children (N = 35, 16 girls and 18 boys) and their parents (N = 33, there were triplets in one of the groups). There were 6-9-9-10 children in the groups. The participation had only one condition – one member of the families should be present on every session of the program.

The evaluation of the health education program

There was no drop-out from the program; all of the participants accomplished the health club (H_{18}). The level of activity showed ceiling effect; both the children and their parents were enthusiastic and active from the beginning of the program (H_{19}). According to our analysis, the volunteers to the program were highly motivated and well-informed about health. We did not detected any changes in the knowledge about health and motivation with our questionnaires for the parents (H_{20}, H_{21}, H_{23}). There was no difference between the school types as well (H_{22}). The health club would be repeated ideally in every year and the content would be deepened and adjusted to the cognitive and emotional development of the children.

GENERAL DISCUSSION

The researchers use different denominations, definitions and measures in internet research and this makes complicated to form a complex view about personality traits and factors of the environment which may correlate with PIU. The results are often controversial; we can not state unequivocally proven facts about the effects of the internet usage. However, an entire avoidance of youth's internet use is unrealistic because we cannot switch it off since without loosing the primary and dominant information source and contact with our world. Therefore, the goal for prevention in modern society is to avoid problematic internet use by raising the awareness of and control over the internet use.

Despite the fact that internet use is an indisposed part of our life and it has many benefits, there are a number of risks and negative consequences. While the internet provides opportunity for developing social contacts with others, it may also lead to a number of harmful psychological health problems. PIU correlated positively with the social variables and negatively with the offline social support and satisfaction with life. This may be in concordance with previous research results concerning internet usage as a compensation of offline social activities (Vandelanotte, Sugiyama, Gardiner, & Owen, 2009). Moreover, for

many people the online world may serve as a modern way of escapism from the problems of the real world (Leung, 2011). The online perceived social support can be useful unless it became the main social environment in the users' lives. This means that it would take over the role and importance of the offline relationships.

It is important to teach the children the proper use of modern devices, such as the computer, tablets and smartphones while the children are sensitive to this information. The elementary school can be a good place for preventive learning as well, and involving the parents is essential into the prevention programs. While the excessive internet use and problems around it are getting more and more into the focus of science, youth and their parents should be more informed about the risks and many social and health consequences. The most proper prevention program focuses on the experience based learning. The children should learn both the appropriate use of the internet and the disadvantages. The main point of the prevention should be the relationships next to the informations. The children can have a strong social web with their parents and friends which gives emotional stability. In this case, the children will turn to them for social support if they have difficulty in something and will not compensate the missing relationships on the internet. The children enjoy the interactive prevention programs, as our result shows we had no drop-out from the samples and the motivation was high all along the health club. The final aim can be educate conscious and critical users from the early school ages.

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