Older adults in the internet – internet addiction and its intrapsychic correlates

Seniorzy w internecie - uzależnienie od sieci i jego intrapsychiczne korelaty[1]

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Abstract: The aim of the study was to verify the relationship between Problematic Using of the Internet and its selected intrapsychic correlates in a group of people in late adulthood. The analyses conducted so far respond to an insufficient number of domestic and foreign publications on this subject. Statistical analysis was applied to the results of the study carried out among a group of 44 seniors (the average age 67 years old). The control group consisted of 41 middle adults (the average age was 35). The study applied: Test of Problematic Using of the Internet, Coping Inventory - Mini-COPE, The IPIP-BFM-20 Questionnaire and Brief Resilience Coping Scale. The results of the study have shown a significant correlation between the problematic using of the Internet (PUI) in the surveyed group of seniors and specific strategies of dealing with stress: self-blame (p<0,05, r=0,363) and venting (p<0,05, r=0,354). Moreover, a significant negative correlation between PUI and the personality trait emotional stability has been found among people in late adulthood (p<0,01, r=-0,416). The regression analysis with simultaneous variable selection conducted to broaden the results of the correlation analyses has shown that the tested model is a significant predictor of the Problematic Using of the Internet (PUI). To be exact, the significant PUI predictors are coping strategies: using drugs and the personality trait conscientiousness. It is worth mentioning that the results of the conducted study could constitute an important guideline for developing effective preventive measures addressed to people in late adulthood.
Keywords: dealing with stress, mental resilience, personality, problematic Internet use

Abstrakt: Celem podjętych badań było zweryfikowanie zależności pomiędzy problematycznym używaniem Internetu, a jego wybranymi intrapsychicznymi korelatami w grupie osób w okresie późnej dorosłości. Przeprowadzone analizy stanowią odpowiedź na niewystarczającą liczbę publikacji krajowych i zagranicznych dotyczących tej tematyki. Analizie statystycznej poddano wyniki badań, które zrealizowane zostały w grupie 44 seniorów (średnia wieku wyniosła 67 lat). Grupę kontrolną stanowiły 41 osoby w okresie średniej dorosłości (średnia wieku wyniosła 35 lat). W badaniu wykorzystano: Test problematycznego używania Internetu, Inwentarz do Pomiaru Radzenia Sobie ze Stresem- Mini-COPE, Kwestionariusz IPIP-BFM-20 oraz Krótką Skalę Prężności Zaradczej. Wyniki badań własnych wykazały, iż z problematycznym używaniem Internetu (PUI) w badanej grupie seniorów istotnie korelują określone strategie radzenia sobie ze stresem: obwinianie się (p<0,05, r=0,363) oraz koncentracja na emocjach i ich wyładowanie (p<0,05, r=0,354). Ponadto udowodniono, że wśród osób w okresie późnej dorosłości z PUI istotnie ujemnie koreluje cecha osobowości jaką jest stabilność emocjonalna (p<0,01, r=-0,416). Wykonana z kolei, w celu pogłębienia wyników przeprowadzonych analiz korelacji, analiza regresji metodą wprowadzania wykazała, że testowany model istotnie przewiduje poziom problematycznego używania Internetu (PUI). Doprecyzowując, istotnymi predyktorami PUI okazała się strategia radzenia sobie ze stresem jaką jest zażywanie substancji psychoaktywnych oraz cecha osobowości jaką jest sumienność. Należy zaznaczyć, że wnioski z przeprowadzonych badań mogą stanowić istotną wskazówkę do prowadzenia skutecznych oddziaływań profilaktycznych kierowanych do grupy osób w okresie późnej dorosłości.
Słowa kluczowe: odporność psychiczna, osobowość, problematyczne używanie Internetu, radzenie sobie ze stresem

Introduction

At present, addiction from Modern Information Technologies is analysed both by educators, psychologists or sociologists and by lawyers (Panasiuk, Panasiuk, 2017). Problematic Use of the Internet deserves a special attention in this respect. The Internet is a tool which has become an integral part of nearly each person (Barłóg, 2015).

The Internet makes it possible for an individual who uses it to carry out multiple activities and opens a range of possibilities (Molga, 2014). Moreover,

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1   Artykuł w języku polskim: https://www.stowarzyszeniefidesetratio.pl/fer/2022-1Wojciak.pdf

this tool ensures comfort of use (Barłóg, 2015). We should, however, note that the use of the Internet is related to a certain type of danger. This could be related to specific activities performed online, but also to their effects on the quality of human life. To be specific, individuals who use the Internet could become victims of aggression or access contents that are dangerous for psyche (Skowroński, 2013). Additionally, in part of the users, the use of the Internet could also lead to an addiction (Young, Yue, Ying, 2017).

A review of the literature on the subject allows to conclude that there are currently many, both national and foreign publications available regarding Internet addiction. (Andrzejewska, 2014; Błachnio, Przepiórka, Rowiński, 2014; Cierpiałkowska, 2016; Davis, 2001; Grzegorzewska, Cierpiałkowska, 2018; Hamburger, Ben-Artzi, 2000; Kuss, Griffiths, Karila, Billieux, 2014; Poprawa, 2011a; Rowicka, 2018). However, we can also notice a lack of research identifying intrapsychic and environmental correlates of Internet addiction in specific groups of people (including seniors).

1. Seniors as active Internet users

As the respondents of this study were people in late adulthood, it is important to note that seniors, according to subject literature, are individuals of over 60-65 years of age. (Pietrasiński, 1996). This group experiences significant changes related to their social, as well as emotional and behavioural way of functioning (Finogenow, 2013; Straś-Romanowska, 2011). This is why seniors frequently engage in different kinds of initiatives and they are willing to participate in leisure and entertainment activities (Rynkowska, 2016). Their activity in the virtual space is rising too (Mucha, Krzyżowski, 2010). Individuals in late adulthood are becoming more eager to use the Internet and they are doing so more often. This has been confirmed for example by data from the reports of the Centre for Public Opinion Research (CBOS). According to CBOS report 163: *The ways of spending free time by seniors*, nearly every third respondent (30%) has used a computer and the Internet (CBOS, 2016).

Later analyses carried out in 2018, described in report 62: *The use of Internet* confirmed that nearly the half of people at the age between 55 and 65 have used the Internet. Among people over 65 years of age, 25% of respondents have used the Internet (CBOS, 2018).

When we are discussing the subject of activity of seniors in the Internet, it is worth considering the extent to which these individuals are prone to problematic use of the Internet. Unfortunately, a review of literature shows a gap in both domestic and foreign analyses in this area. This has been confirmed in the publication of Khaleda M'hiri, Alessandry Costanza, Yassera Khazaal, Riaza Khan, Daniela Zullino and Sophii Achab (2015). These authors have indicated that no detailed and comprehensive study on Internet addiction in this group has been carried out so far. Some conclusions regarding possible risk of addiction can only be made on the basis of analyses where seniors constituted a part of the study group. The results of analyses performed in Sweden could be an example here. These analyses show that ½ of respondents (the age median was 45 years) fulfilled at least one of the criteria of problematic use of the Internet (M'hiri et al. 2015). Importantly, other analyses carried out in a deliberately selected group of people in late adulthood proved that problematic Internet use coincides with a higher level of perceived social isolation (Meshi, Cotten, Bender, 2020).

2. Internet addiction and its intrapsychic conditions

Internet addiction belongs to the group of behavioural addictions (Rowicka, 2018). It was first studied in 1996 (Young et al. 2017). Interestingly, various terms have been used to describe this phenomenon. The terms in use include: netoholism, cyberaddiction, Internet addiction, info dependency or Internet dependency disorders (Jarczyńska, Orzechowska, 2014, s.122). This visible lack of terminological consistency is related to another fact: the addiction has not been included in any existing classification of diseases and health problems (Grzegorzewska, Cierpiałkowska, 2018). We should stress here that the situation is

not going to change with ICD-11 (the classification which will come into life on 1 January 2022) (Gaebel, Zielasek, Reed, 2017; Krawczyk, Święcicki, 2020).

In the recent years numerous researchers, including Kimberly Young, Keith Beard and Eve Wolf, Bohdan Woronowicz, and Ivan Goldberg have made attempts at creating diagnostic criteria for Internet addiction (Izdebski, Kotyśko, 2016; Klimczak, 2012; Woronowicz, 2009). This article, however, will only refer to criteria put forward by a forerunner of Internet addiction analyses - Young. The researcher proposed the term 'pathological use of Internet' for Internet addictions. Initially, the diagnostic criteria she published were characteristic of a pathological gambling situation, as described in DSM-IV, but they were later reformulated, which lead to an understanding of this phenomenon in terms of impulse control disorders (Klimczak, 2012). In their final form they assume presence of specific symptoms, such as:

- preoccupation with the Internet's potential;
- the need to use the Internet for increasing amounts of time in order to achieve satisfaction;
- making unsuccessful efforts to control, cut back, or stop Internet use;
- feeling moody, restless or depressed when attempting to cut down or stop Internet use
- staying online longer than initially intended;
- using the Internet even though it entails risking the loss of significant relationship, job, educational or career opportunity;
- lying to conceal the constant involvement with the Internet;
- using the Internet as a way of escaping from problems or relieving a dysphoric mood (Young, 1998, after Klimczak, 2012, p. 44).

We should also note that, according to Young, problematic use of the Internet can be diagnosed when at least five of the listed symptoms have been confirmed. However, it should be emphasised that the individual's professional, educational or home responsibilities should be excluded from this assessment (Izdebski, Kotyśko, 2016).

When characterizing selected aspects of Internet addiction, it also seems justified to give attention to the phases of its course. According to Young, we can distinguish three phases that lead to addictive Internet use. These are: engagement, substitution, escape (Klimczak, 2012). In the first phase, engagement, an individual learns about the possibilities they get from a computer and network. This phase is characterized by fascination with cyberspace, feelings of euphoria, relaxation and peace. Moreover, the person ceases to feel lonely or alienated. In the second phase, substitution, the individual feels a need for constant contact with people they have met online. They frequently resign from direct interpersonal contacts, activities or matters that used to be an essential element of their life. In the last phase, escape, the individual spends increased periods of time in the virtual world. This becomes a reason for alienation in daily life. At this point the individual often develops symptoms of depression and might experience anxiety. Moreover, the individual's daily rhythm and their assessment of space-time are usually disturbed. The person experiences feelings of guilt as a result of neglecting professional or family duties (Klimczak, 2012, p. 69-70).

Concluding the considerations on Internet addiction, it is also worth noting that there is a visible trend in the literature on the subject: searching for intrapsychic factors that contribute to the occurrence of this addiction, as well as factors that could offer protection against it. Personality and the ability to cope with stress frequently appear among the analysed variables. Essentially, it is believed that introversion, a low level of openness to experience, low agreeableness and conscientiousness manifested by the individual are risk factors in Internet addiction (Van der Aa et al. 2009). Moreover, this addiction is fostered by the inability to cope with stress (Andrzejewska, 2014). On the other hand, a high level of agreeableness, conscientiousness and emotional stability are considered to be the factors that protect an individual against Internet addiction (Kuss et al. 2014). Having knowledge of these conditions, it seems reasonable to verify whether these relations will be just as important in the group of seniors (which, so far, has been usually omitted in detailed analyses).

3. Methodology of own research

3.1. The aim and subject of the research

A review of statistical data describing the activity of seniors in the Internet confirms increased use of this medium among this group. We can also assume that the SARS-CoV-2 coronavirus pandemic, which started in 2020, has contributed to an even greater activity of the group in the Internet. The lack of direct contacts with friends and family, temporarily closed cinemas, theatres and museums, and the need to obtain up-to-date information: all this could encourage people in late adulthood to educate themselves in the field of new technologies and, subsequently, to use them more.

This study aimed to verify correlation between severity of symptoms of problematic use of the Internet and its intrapsychic corelates. The performed analyses are a response to the insufficient number of domestic and foreign publications on this subject. The research carried out so far usually focused on adolescents and persons in early adults.

3.2. Research problems

The main research problem in this study was to answer the question: Is there a connection between problematic use of the Internet and its selected intrapsychic correlates during late adulthood? The following hypotheses were verified in the course of the research:

- H1: There is a relationship between problematic use of the internet and stress-coping strategies among seniors and in the group of people in medium adulthood.
- H2: There is a relation between problematic use of the Internet and personality structure in the analysed group of seniors and in the group of medium adults.
- H3: There is a relationship between problematic use of Internet and the level of a person's resilience in the analysed group of seniors and group of medium adults.

3.3. Variables and their operationalization

To better clarify the research problem, the dependant variable and independent variables were identified. Subsequently, these variables were operationalized into indicators that could be subjected to empirical research. The identified variables and indicators are listed in Table 1.

3.4. Research methods and tools

Basing on the adopted theoretical and methodological assumptions, the study used the following tools: Test of Problematic Using of the Internet (TPUI) by Young in the Polish adaptation by Poprawa (Poprawa, 2011b), Inventory for the Measurement of Coping with Stress - Mini-COPE by Carver, in the Polish adaptation by Juczyński and Ogińska -Bulik (Ogińska-Bulik, 2014), IPIP-BFM-20 questionnaire - a shortened version of the Goldberg tool in the Polish adaptation by Topolewska, Skimina, Strus, Cieciuch and Rowiński (Topolewska, Skimina, Strus, Cieciuch, Rowiński, 2014), Brief Resilience Coping Scale (KSPZ) by Sinclar and Wallston in the Polish adaptation by Piórkowska, Basińska, Piórkowski and Janicka (Piórowska, Basińska, Piórowski, Janicka, 2017).

Test of Problematic Using of the Internet consists of 22 items. A respondent gives answers on a six-point scale (Poprawa, 2011b). The tool allows to diagnose the level of problematic use of the Internet (Makaruk, Wójcik, 2012). The test can be used both in scientific research and in clinical practice (Grzegorzewska, Cierpiałkowska, 2018). TPUI is characterized by good psychometric properties. The test has a univariate structure and internal consistency index of 0.935, as calculated with Cronbach's alpha coefficient. The discriminatory power of individual items is within the range 0.40- 0.70 (Cudo, Kopiś, Stróżak, 2016).

The Inventory for the Measurement of Coping with Stress Mini-COPE is a shortened version of the Multidimensional Inventory for Measurement of Coping with Stress COPE. The Polish adaptation consists of 28 statements, which are assigned to 14 coping strategies (Ogińska-Bulik, 2014). The tool is used for diagnosis of typical reactions and feelings of a given individual in face of situations of intense

Table 1. Variables, measurement methods and own research indicators

Dependent variable		Independent Variable	
Variable	Indicators	Variable	Indicators
Internet addiction	The indicator: the severity of symptoms of problematic use of the Internet (the result obtained by completing the Test of Problematic Using of the Internet).	Coping with stress	The indicator: results showing the dominant strategies of coping with stress in a difficult situation obtained by completing the Inventory for Measuring Coping with Stress - Mini-COPE.
		Personality features	The indicator: results showing the personality structure obtained by completing the IPIP-BFM-20 Questionnaire.
		Resilience Coping	The indicator: the person's level of resilience coping obtained by completing Brief Resilience Coping Scale.

Source: own work.

stress. Mini-COPE is used both for research purposes and in clinical practice (mainly in prevention)[2]. The tool has satisfactory psychometric properties (Ogińska-Bulik, 2014).

Questionnaire IPIP-BFM-20 is a shortened version of Goldberg questionnaire. It has 20 items which allow us to measure five personality features: extraversion, conscientiousness, agreeableness, emotional stability and intellect. The respondent gives answers on a five-point scale. This tool can be used, for example, in scientific research. The questionnaire shows satisfactory validity and reliability (Topolewska et al. 2014).

The Brief Resilience Coping Scale consist of 4 statements. The respondent gives answers on a five-point scale, deciding to what extent the statements accurately describe the respondent. The tool enables making conclusions about the level of Resilience coping of an individual. The Brief Resilience Coping Scale can be used for research purposes. It fulfils psychometric criteria of a test. The reliability of the method estimated by the Cronbach's alpha coefficient is 0.625. As the tool is short, the authors found this satisfactory (Piórowska et al. 2017).

3.5. Characteristics of the study population

44 respondents in late adulthood (33 women and 11 men) took part in the research. These seniors were 60 or older and they lived on the area of Maloposkie province. Their ages ranged from 60 to 77 years (the average was 67). The control group consisted of 41 people in middle adulthood (28 women and 13 men). In this group, the average age was 35 years.

4. Presentation of results

In order to verify the hypotheses assumed in the study, Pearson's r correlation was used. It was used to check the significance of the relation between two quantitative variables (Sobczyk, 2000). In the next step, in order to deepen the insight into previously performed correlation analyses, regression analysis by inputting was used. This method enables to forecast dependent variable based on one or several predictors (Krejtz, Krejtz, Kopacz, 2013). It is worth noting that $\alpha = 0.05$ was adopted as the critical level of significance.

The analysis carried out at the beginning verified the relationship between the level of problematic Internet use and the strategies of coping with stress. Pearson's r correlation was used for this purpose. Table 2 shows detailed data.
The analysis of the results showed a significant moderate correlation in the examined group of seniors between problematic use of the Internet (PUI) and specific strategies of coping with stress: self-blame ($p <0.05$, $r = 0.363$) and venting of emotions ($p <0.05$,

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2   from: https://www.practest.com.pl/mini-cope-inwentarz-do-pomiaru-radzenia-sobie-ze-stresem, access: 10.06.2021.

Table 2. The relation between the level of problematic Internet use and stress-coping strategies

		TPUI	
		Individuals in late adulthood	Individuals in medium adulthood
Active coping	R	-0,260	0,212
	P	0,089	0,184
Planning	R	-0,085	0,031
	P	0,584	0,847
Positive reframing	R	-0,179	0,031
	P	0,246	0,849
Acceptance	R	-0,116	-0,438
	P	0,455	0,004
Humour	R	-0,202	0,334
	P	0,188	0,033
Religious coping	R	-0,106	-0,256
	P	0,492	0,107
Seeking emotional support	R	-0,101	0,087
	P	0,514	0,587
Seeking instrumental support	R	0,281	0,056
	P	0,065	0,728
Distraction	R	0,047	0,207
	P	0,763	0,195
Denial	R	0,170	0,025
	P	0,271	0,878
Venting of emotions	R	0,354	0,225
	P	0,019	0,157
Psychoactive substance use	R	0,296	0,401
	P	0,051	0,009
Behavioural disengagement	R	0,230	-0,001
	P	0,134	0,995
Self-blame	R	0,363	0,316
	P	0,015	0,044

Source: Own work.

Table 3. The relation between problematic use of Internet and personality features

		TPUI	
		Individuals in late adulthood	Individuals in medium adulthood
Extraversion	r	-0,114	0,249
	p	0,461	0,116
Agreeableness	r	0,157	-0,124
	p	0,307	0,439
Conscientiousness	r	-0,207	-0,572
	p	0,178	0,000
Emotional stability	r	-0,416	0,105
	p	0,005	0,512
Intellect	r	0,007	0,068
	p	0,962	0,672

Source: own work.

Table 4. The relation between problematic use of Internet and resilience coping

		TPUI	
		Individuals in late adulthood	Individuals in medium adulthood
Resilience coping	r	0,032	0,105
	p	0,838	0,514

Source: own work.

r = 0.354). The strength of these relationships is moderate. On the other hand, in the group of people in middle adulthood, such strategies of coping with stress as: self-blame (p <0.05, 0.316) and psychoactive substance use (p <0.01, 0.401) show a significant positive correlation. Moreover, acceptance was significantly negatively correlated with the problematic use of the Internet (p <0.01, -0.438). The strength of these relationships is also moderate. We have subsequently analysed correlation between the level of problematic use of the Internet and individual personality features. Table 3 shows detailed data.

The results of own work showed that in late adulthood personality feature emotional stability correlates significantly with problematic use of the Internet (p<0,01, r=-0,416). This correlation is moderate. In the group of people in medium adulthood, in turn, conscientiousness was correlated with problematic use of the Internet (p <0.01, r = -0.572). Then, the relationship between the level of problematic Internet use and resilience coping was verified. The results of the correlation analysis are shown in Table 4.

Table 5. Regression model for the studied group forecasting the level of problematic Internet use based on stress-coping strategies, personality structure and coping resilience

	B	SE	β	t	p	R²	F	p
(Constant)	27,017	18,075		1,495	0,140			
Active coping	-0,003	2,098	0,000	-0,002	0,999			
Planning	-1,233	1,882	-0,090	-0,655	0,515			
Positive reframing and development	-1,233	1,277	-0,125	-0,965	0,338			
Acceptance	-2,851	1,630	-0,222	-1,749	0,085			
Humour	0,602	1,349	0,052	0,446	0,657			
Religious coping	-0,500	1,012	-0,068	-0,494	0,623			
Seeking emotional support	0,828	2,132	0,068	0,388	0,699			
Seeking instrumental support	-0,192	1,636	-0,018	-0,117	0,907			
Distraction	-0,725	1,182	-0,075	-0,614	0,542	0,47	2,88	0,001
Denial	-1,725	1,396	-0,150	-1,235	0,221			
Venting emotions	-0,325	1,877	-0,026	-0,173	0,863			
Psychoactive substance use	3,727	1,415	0,313	2,634	0,011			
Behavioural disengagement	-0,661	1,635	-0,053	-0,404	0,687			
Self-blame	2,495	1,355	0,263	1,841	0,070			
Extraversion	0,067	0,600	0,013	0,112	0,911			
Agreeableness	0,560	0,869	0,081	0,644	0,522			
Conscientiousness	-2,374	0,676	-0,401	-3,513	0,001			
Emotional stability	0,206	0,672	0,040	0,306	0,761			
Intellect	1,276	0,678	0,238	1,882	0,064			
Resilience coping	0,571	0,677	0,112	0,844	0,402			

Source: own work.

The results of own work show that no significant correlation was found between the problematic use of the Internet and resilience coping, either in the group of people in late adulthood or in the group of people in medium adulthood.

The last stage of analyses was regression analysis by inputting. The obtained model is shown in Table 5.

The analysis showed that the tested model significantly predicts the level of problematic Internet use (PUI). It predicts 47% of the PUI variance. Specifically, the significant predictors are: the stress-coping strategy psychoactive substance use and personality feature conscientiousness. The value of the standardized *Beta* regression coefficient indicates that the more often stress-coping strategy psychoactive substance use is applied, the greater the level of problematic Internet use. In contrast, the personality feature conscientiousness functions as a protective factor for the individual. The higher the result of this index, the lower the severity of problematic Internet use.

Discussion of the results

Over the recent years we have seen many publications on the topic of Internet addiction. However, they were mostly of preliminary character and required further, more in-depth analyses (Young et al. 2017). Additionally, the studies in this area so far frequently omitted certain groups of people – especially senior users. The studies carried out and described in this article aimed to verify the relation between problematic use of the Internet and its selected intrapsychic correlates. Noteworthy, the analysis of the results contributed to the development of theoretical knowl-

edge regarding Internet addiction in the selected group of people and it may also constitute a basis for designing effective preventative interventions.

The results of own studies confirmed that selected stress-coping strategies (self-blame and venting emotions) coincide with increased problematic use of the Internet in the group of seniors. That is to say, individuals in late adulthood who demonstrate helplessness and certain avoidance behaviours in difficult situations will show higher severity of problematic use of the Internet. This is an important guideline for preventative interventions. It seems reasonable to offer this group of people workshops and training that would allow them to improve their ability to effectively deal with difficult situations. Such interventions would also be advisable in the group of medium adults, as it was identified that problematic use of the Internet among these individuals coincides with strategies in 'helplessness' category.

Another aspect analysed within this study was the relation between personality features and problematic use of the Internet. The results of own analysis are consistent with the analyses described by Kuss et al. (2014). In view of the results, emotional stability may be considered a factor that protects an individual against problematic use of the Internet. Therefore, when organizing preventive actions, it is pertinent to offer people in late adulthood activities that raise awareness about their own emotions.

The last aspect considered in this publication concerned the relationship between the problematic use of the Internet and the level of coping resilience. No significant correlations were found between these variables in the group of seniors or in the group or people in medium adulthood, so it can be concluded that resilience is neither a significant protective factor nor a risk factor in Internet addiction.

In conclusion, it should be stressed that the results of analyses presented in this article confirmed the need to carry out more studies. It would be advisable to perform such analyses in a sufficiently larger group of seniors, which would be appropriately differentiated in terms of, among others, socio-demographic variables.

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