COPING STYLES AND THE RISK
OF PROBLEMATIC INTERNET USE*

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Summary. This study examined the relationship between escape-avoidance coping style and problematic Internet use (PIU). It was hypothesized that individuals using escape-avoidance style of coping, in contrast to those using other coping styles, will to demonstrate significantly higher hedonistic and compensatory expectations of the effects of using the Internet, followed by a greater severity of PIU symptoms. The study was conducted on a sample of 508 Polish Internet users aged 18–33. Based on the COPE inventory, supplemented with questions on the strategies of Internet use, cluster analysis was performed to distinguish four groups of women and four groups of men, whose coping strategy preference profiles showed significant differences. The results revealed a group of individuals who used the escape-avoidance coping style, showing a tendency for: behavioral and mental disengagement, denial, substance abuse, and using the Internet for coping. In line with the study assumptions, these participants scored significantly highest on hedonistic and compensatory expectations and on the severity of PIU symptoms. The other two coping styles, passive and confrontational, both without a tendency to use escape and avoidance strategies, were not found to increase the risk of PIU and can perform protective functions.

Key words: Internet addiction, problematic Internet use, coping style, escape-avoidance coping, outcome expectations

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Introduction

Despite certain controversy around the topic, most researchers agree that the engagement showed by some users in using specific Internet applications has clear traits of addictive behavior, leading to difficulties in these users' functioning. Discussed here is a chronically repetitive and difficult to control preoccupation with the use of online applications, mainly related to interactivity and gaming, which is initially highly rewarding, but consequently leads to damage and distress in the functioning of individuals in many areas of their lives (Shaw & Black, 2008; Pontes, Kuss, & Griffiths, 2015; Griffiths et al., 2016; Izdebski & Kotyśko, 2016; Grzegorzewska & Cierpiałkowska, 2018). Like any addictive behavior, it is characterized by mood modification, salience, withdrawal symptoms, relapse, and conflicts (Griffiths et al., 2016; Kuss et al., 2017, Grzegorzewska & Cierpiałkowska, 2018).

One of the aspects explored by researchers is the mechanisms that govern the onset of addictive or problematic Internet use (PIU). Numerous previous studies have revealed significant and complex relationships between the escape-avoidance coping style and addictive Internet use. The variables incorporated in these relationships included perception of stress, psychopathological symptoms, as well as a range of cognitive and personality variables, such as outcome expectations of using the Internet and certain personality traits (Brand, Laier, & Young, 2014; Deatherage, Servaty-Seib, & Aksoz, 2014; Kardefelt-Winther, 2014b; Cheng, Sun, & Mak, 2015; Chou et al., 2015; Li et al., 2016; Kuss et al., 2017; McNicol & Thorsteinsson, 2017; Zhou et al., 2017).

In a way, the direct relationship between escape-avoidance coping and addictive Internet use forms a part of the latter's diagnostic criteria. Some of the most significant symptoms of numerous operational definitions and assessment methods for addictive Internet use include mood changes, psychological escapism, detachment from personal problems, seeking psychological comfort and relief from unpleasant affective states, and dysfunctional emotional coping (Young, 1999; Davis, Flett, & Besser, 2002; Griffiths, 2005; Caplan, 2010; Poprawa, 2012; Müller et al., 2014; Pontes & Griffiths, 2017).

Escape-avoidance coping style and problematic Internet use

A coping style is determined by the learned, relatively constant, individual preferences within a wide spectrum of possible and psychologically available coping strategies (Carver, Scheier, & Weintraub, 1989; Heszen, 2013). The escape-avoidance repertoire of coping strategies includes undertaking activities that can distract, divert attention from a difficult situation and reduce stress levels – all without altering the situation, yet providing immediate relief and gratification (Moos & Schaefer, 1993; Fromme & Rivet, 1994; Juczyński & Ogińska-Bulik, 2009; Poprawa, 2011a). According to the COPE model these strategies include: behavioral disengagement,

mental disengagement, denial, or alcohol-drug disengagement (Juczyński & Ogińska-Bulik, 2009). The use of certain Internet applications, or more generally speaking, being involved in the virtual world, which is easily accessible, absorbing, immediately rewarding, exciting, and socially accepted or even desirable, may certainly perform such functions as well (Song et al., 2004; Brand, Laier, & Young, 2014; Cheng, Sun, & Mak, 2015; Chou et al., 2015; Kuss et al., 2017).

As Chou et al. (2015) show in their research, Internet addicts are less likely to use active coping and restraint coping strategies, while opting for the use of avoidance strategies, such as denial and disengagement – both behavioral and mental. They are also more severely affected by depressive symptoms, which act as a moderator in dealing with PIU. Similar conclusions were drawn by McNicol & Thorsteinsson (2017). According to the results of their research, relying on maladaptive styles of coping (i.e., emotion-focused and avoidance coping) is positively correlated with the risk of Internet addiction. Furthermore, this risk is also positively correlated with the severity of depressive and anxiety symptoms as well as the level of perceived stress. The effect of using psychoactive substances and media as elements of the escape-avoidance coping style on PIU risk (both proximal and mediating in the relationship with psychopathological symptoms) has also been demonstrated by Kuss et al. (2017). In turn, the results of a study by Kardefelt-Winther (2014b) proved the significance of motivation for escapism in excessive, compulsive online gaming and confirmed the hypothesis of the compensatory mechanism of compulsive Internet use (Kardefelt-Winther, 2014a; 2017). Excessive involvement in online gaming, resembling an addiction, is a form of escaping from psychosocial problems, a way of coping with stress and compensating for weaknesses and personality deficits (Kardefelt-Winther, 2014b; 2017). Research by Cheng, Sun, & Mak (2015) indicates that people using the Internet in a problematic way cope with stress in a maladaptive manner, characterized by avoidant and inflexible coping. The results of prospective studies have shown that inflexibility becomes a risk factor when it adopts a passive form and consequently implements only the strategies that are based on avoidance. At the same time, Li et al. (2016) argue that PIU may be associated with previously experienced stressful life events that lower the satisfaction of basic psychological needs: autonomy, relatedness, and competence. Failure to meet these basic needs forces a search for their fulfillment or compensation, and if they are not achievable in real life, while there are instead tempting illusions of their fulfillment available in online applications (e.g., video games), then the risk of developing a dependence increases (Li et al., 2016; see Allen & Anderson, 2018). That risk decreases, in turn, if the affected individuals use a positive coping style, based on support-seeking or problem-solving strategies (Li et al., 2016). In their extensive research stemming from the cognitive-behavioral model of PIU used by Davis (2001), Brand, Laier, & Young (2014) argue that generalized pathological Internet use is deeply conditioned by specific psychopathological symptoms and personality susceptibility (according

to the diathesis-stress model), through the mediating function of escape coping strategies and the outcome expectations of Internet use. Personality dysfunctions and psychopathological symptoms increase the use of the escape-avoidance coping style. They may also lead to the formation of positive, escapist outcome expectations of Internet use and increase its use for coping, which is only then conducive to the development of addictive Internet use (Brand, Laier, & Young, 2014).

Outcome expectations of Internet use

Research shows that outcome expectations of compulsive behavior, including and related to the use of the Internet, is one of the most important direct determinants of motivation and Internet use outcomes for the subject. Of particular importance for the determination of addictive behavior are the expected positive outcomes, bringing gratification to the individual (Marlatt et al., 1988; Poprawa, 2009; Brand, Laier, & Young, 2014). In extensive research conducted by using exploratory factor analysis, Poprawa (2009) identified four types of expected positive outcomes of Internet use: 1) optimizing and enriching interpersonal relationships (interpersonal expectations), 2) facilitating communication, gaining useful information and personal development (pragmatic expectations), 3) altering mood, disengagement from stressful reality, and entertainment (hedonistic expectations), and 4) transforming and freeing oneself from personal complexes and inhibitions (compensatory expectations). Research has confirmed that compensatory expectations together with hedonistic expectations are direct predictors of problematic Internet use (Poprawa, 2009).

Compensatory-escape mechanism of problematic Internet use

The results of all the studies mentioned above indicate a compensatory-escape mechanism of addictive or problematic Internet use (see Song et al., 2004; Poprawa, 2009; 2011b; Caplan, 2010; Kwon, Chung, & Lee, 2011; Brand, Laier, & Young, 2014; Kardefelt-Winther, 2014a; 2014b; 2017; Cheng, Sun, & Mak, 2015). According to the theory of stress and coping, individuals with deficits or defects in the coping resources necessary to deal with stressful demands of life, enhance the use of escape-avoidance strategies to reduce and alleviate unpleasant emotions, and to compensate for the deficiencies and losses they have experienced. In favorable social and environmental conditions, there is a risk of developing the escape-avoidance coping style in individuals low in self-acceptance, who lack coping resources and satisfaction with their own lives (Moos & Schaefer, 1993; Hobfoll, 1998; Taylor & Stanton, 2007). The preference for specific escape-avoidance coping strategies is contingent upon their expected utility and gratification value. If an individual expects that drinking alcohol, using drugs, or immersing in the virtual world are

a subjectively acceptable and readily available, rewarding strategy, then, with the psychological inaccessibility of other strategies, these behaviors become part of that individual's coping style. The more individuals rely on escape-avoidance coping strategies, the more they limit their ~~own~~ strategy repertoire and coping resources, thus increasing the risk of addiction (Cooper, Russell, & George, 1988; Marlatt et al., 1988; Cooper, Frone, & Russell, 1995; Song et al., 2004; Taylor & Stanton, 2007; Poprawa, 2011b; Brand, Laier, & Young, 2014).

Hypotheses

The aim of this study was to distinguish individually diversified types of preference for the broad spectrum of possible and available coping strategies among a group of Internet users. Those were taken from the full COPE inventory created by Carver, Scheier, & Weintraub (1989; Juczyński & Ogińska-Bulik, 2009), additionally extended with the strategy to alleviate distress and increase mental comfort through the use of the Internet (coping through the use of the Internet) (see Kuss et al., 2017). We assumed that:

1) at least one of the coping styles distinguished among Internet users would be characterized by a particularly strong preference for the escape-avoidance strategies, including coping through the use of the Internet, with a relatively weaker preference for active, problem-focused strategies;
2) people using the escape-avoidance coping style, as opposed to those using other coping styles, would display significantly higher hedonistic and compensatory outcome expectations of Internet use, and greater severity of problematic Internet use symptoms.

Method

Participants

The study was carried out with a paper-pencil method on a sample of 508 Polish Internet users. Only 494 were included in the statistical analysis, as 14 people returned incomplete questionnaires. The sample included people aged 18 to 33 (the average age in the studied group was 21.74 years, $SD = 3.74$), i.e. those in the period of life characterized by the most intensive use of the Internet (Kuss et al., 2014; Müller et al., 2014). Women accounted for 55.1% of the sample (280 people), while men 44.9% (228 people).

Sample selection was random, although determined by age and gender. The respondents were sought by the research team using the snowball method, which means the interviewers asked the participants to indicate friends who would also be willing to participate.

Organization of study and procedures

The study was voluntary and anonymous. After familiarizing with the instructions provided by the researcher, the participants filled out the questionnaires in a preset order.

Proving the significance of the escape-avoidance coping style in PIU determination and the function of the selected intermediary variables in this correlation, previous studies in this area were conducted using the correlation-regression analysis model and structural equation modeling (SEM) (see Brand, Laier, & Young, 2014; Deatherage, Servaty-Seib, & Aksoz, 2014; Cheng, Sun, & Mak, 2015; Chou et al., 2015; Li et al., 2016; Kuss et al., 2017; McNicol & Thorsteinsson, 2017). These studies often took into account the preference only for selected coping strategies that performed escape-avoidance functions, rather than for the entire spectrum of possible coping strategies constituting individual coping styles. The current study uses the full COPE model – 15 strategies of coping (Carver, Scheier, & Weintraub, 1989; Juczyński & Ogińska-Bulik, 2009), extended by coping through the use of the Internet. Indicator of that strategy was extracted from the Internet Use Test (*Test Korzystania z Internetu*, TKI), from the 6th criterion, which specifies the use of the Internet to escape stress (Poprawa, 2012). To make this possible, the COPE and TKI results were standardized. The overall TKI score was measured with the exclusion of criterion 6, that is, escaping stress through Internet use. The analyses were carried out separately for women and men, due to the gender-based differences in coping strategies preferences (Matud, 2004) and the risk of PIU found in many studies (Poprawa, 2012; Müller et al., 2014; Grzegorzewska & Cierpiałkowska, 2018).

As a method of extracting the coping styles we used cluster analysis, grouping cases (participants) by k-means algorithm and choosing objects in a way that maximized distance between clusters (see: Stanisz, 2007). A series of analyzes were carried out differing in the number of assumed clusters, finally selecting those solutions that were both statistically significant and maximally diversified, and that could be interpreted from the point of view of the assumed objectives. Then Kruskal-Wallis's ANOVA were conducted to measure the significance of differences among the four predicted types of positive outcome expectations of Internet use and the severity of PIU symptoms. These analyses were performed using the StatSoft STATISTICA 12 software package.

Instruments

The Internet Use Test (**TKI23**) was developed by Poprawa (2012) to measure the severity of PIU symptoms. It consists of 23 items that form 7 subscales – PIU indicators, namely: 1) difficulties with control, 2) obsessive preoccupation, 3) loss of satisfaction, 4) increasing damage and conflicts, 5) neglecting other activities and

relationships, 6) using Internet to escape stress, and 7) psychological defense of the addiction. Each item is evaluated by the test participant on a six-point Likert scale ranging from 0 – "never", to 5 – "always". The higher the overall score, the stronger the PIU symptoms. This tool is characterized by very good reliability and high validity (Poprawa, 2012). In the present study, an abbreviated version of TKI was used, with the exclusion of subscale 6: using the Internet to escape stress. In this sample, internal consistency (Cronbach's alpha) of TKI's abbreviated version was .94, and the item-total correlation r_{it} ranged from .462 to .741.

The Questionnaire on the Outcome expectations of Internet Use (*Kwestionariusz Oczekiwanych Efektów Używania Internetu*, **KOEUI**) by Poprawa, Kusztan, and Dulewicz (Poprawa, 2009) is used to measure the outcome expectations of Internet use. It consists of 39 statements on the possible outcomes of using the Internet that form four scales: 1) expectations regarding optimization and enrichment of interpersonal relations (Cronbach's α = .802, item-total correlation r_{it} ranging from .492 to .725); 2) pragmatic expectations (Cronbach's α = .829, r_{it} from .393 to .578), 3) hedonistic expectations (Cronbach's α = .860, r_{it} from 446 to .673), and 4) compensatory expectations (Cronbach's α = .875, r_{it} from .435 to .655). Items are evaluated on a 4-point scale ranging from 1 – "I disagree", to 4 – "I agree". The higher the score on a given scale, the more the respondent expects certain outcomes of using the Internet. Previous research reports high validity and reliability of the tool (Poprawa, 2009).

The Multidimensional Coping Assessment Inventory (**COPE**) by Carver, Scheier, & Weintraub (1989), adapted into Polish by Juczyński and Ogińska-Bulik (2009), is used to measure the preferences for coping strategies under a situational or dispositional approach. This study used an extended, full-featured dispositional version of the COPE inventory, which consists of 60 items forming 15 scales, 4 statements each, representing coping strategy preferences. Answers are given on a 4-point Likert scale from 1 – "I usually don't do this at all" to 4 – "I usually do this a lot". The higher the score on a given scale, the more the individual is inclined to use that particular coping strategy. The internal consistency coefficient for individual subscales ranges from .48 to .94. The attached subscale of coping with stress through the use of the Internet has Cronbach's α internal consistency = .845 and the item-total correlation ranging from .666 to .747.

Results

Coping styles in women

Four groups of women were identified through cluster analysis, showing significant differences in their coping strategy preference profiles, which were then available for interpretation. The results are given in Table 1, and the individual profiles of coping strategy preferences are illustrated in Figure 1.

Cluster 1 included 91 women (making up 33% of the group). The strategies that distinguished them from the others the most (i.e., results > .5 SD) are active coping, seeking support, positive reinterpretation, and restraint from impulsive action, as well as (results > .3 SD) planning skills, avoiding competitive actions, and acceptance. More often than the others, they also used religious coping (SD = .47) and humor (SD = .23). Significantly more often than women from clusters 2 and 4, they showed an above-average (results > .4 SD) focus on and venting of emotions, disengagement from problems, and seeking for emotional venting on the Internet (SD = .27). Their coping style can be described as highly active, focused on problem-solving and emotion regulation, but with tendencies to disengage from problems and to avoid negative emotions (1W style).

Cluster 2 included 93 women (34%). Compared to the other female participants of the study, these women are characterized by the weakest tendency to use escape-avoidance coping, meaning they display no tendency for denial, mental disengagement, behavioral disengagement, and escaping to the virtual world of the Internet (results < −.5 SD), as well as for the use of alcohol or other psychoactive substances (< −.4 SD). They also showed the lowest tendency for using humor (< −.7 SD) in coping. These participants accept adversities (< −.3 SD) and refrain from taking impulsive action (< −.5 SD) to a significantly lesser extent than the other women do. On the other hand, they show an above-average tendency to use active coping strategies, such as planning, seeking social support, positive reinterpretation, and focus on and venting of emotions (results > .2 SD). Their coping style can be described as confrontational, focused on problem-solving and emotional regulation (2W style).

Table 1. Results of the analysis of women's clusters relative to their coping strategy preferences

Coping strategies	Clust.1 $N = 91$ (33%)	Clust.2 $N = 93$ (34%)	Clust.3 $N = 45$ (16%)	Clust.4 $N = 44$ (16%)	$F_{(3.269)}$*
1) active coping	.63	.24	−.80	−1.12	66.41
2) planning	.45	.39	−.94	−.86	52.87
3) seeking social support – instrumental	.56	.27	.01	−.93	31.23
4) seeking social support – emotional	.63	.45	.28	−.95	38.31
5) suppression of competing activities	.41	−.04	−.73	−.85	27.70
6) turning to religion	.47	−.03	.06	−.08	4.57
7) positive reinterpretation and growth	.60	.22	−1.01	−.98	59.75

cont. table 1

8) restraint coping	.56	−.52	−.27	−.14	24.93
9) acceptance	.30	−.36	−.05	−.12	7.07
10) focus on and venting of emotions	.49	.29	.67	−.63	19.56
11) denial	.17	−.72	.89	.33	50.10
12) mental disengagement	.42	−.58	1.04	.12	53.24
13) behavioral disengagement	−.18	−.63	1.33	.15	66.56
14) alcohol-drug disengagement	−.05	−.48	.84	−.26	23.60
15) humor	.23	−.71	.17	−.32	21.19
16) use of Internet	.27	−.54	.88	−.03	27.33

Note. * All significant, at $p < .001$, except for strategy no. 6, "turn to religion", at $p = .004$.
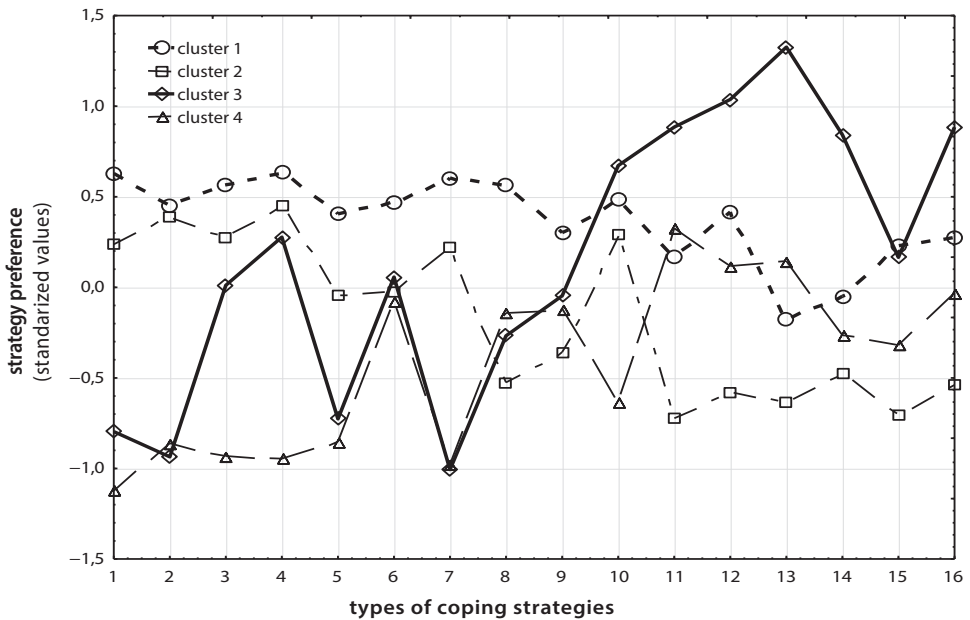

Figure 1. Clusters of female Internet users representing different styles of coping
Key. Types of coping strategies as in Table 1.
Cluster 1: highly active coping, with a tendency to avoid negative emotions;
Cluster 2: confrontational coping; Cluster 3: escape coping; Cluster 4: passive coping.

Cluster 3 covered 45 women (16%). Significantly distinguishing the study participants in this cluster against the others is a very high, above-average tendency (results > 1 *SD*) for suppressing activity and for disengagement from the problem; they also show an above-average inclination (results > .5 *SD*) toward denial, use of alcohol or other substances, as well as for the use of Internet for coping. Compared to the other female subjects, they also have considerably poorer planning skills, a lower tendency for positive reinterpretation, and are unable to avoid activities or to actively confront problems (results < −.5 *SD*). Without a doubt, they use the escape-avoidance coping style, with extreme tendencies to suppress activity and disengage when faced with stress (3W style).

Cluster 4 included 44 women (16%), using an extremely inactive coping style (< −1 *SD*), which could be even regarded as passive (most of the results fall below average) (4W style). Their results in planning, problem solving, reinterpretation, seeking support and avoiding competitive actions are far below the average (results < −.8 *SD*), followed by low results in emotional expression (< −.6 *SD*). Apart from a slightly elevated use of denial (> .3 *SD*), they demonstrated no particular tendencies for the escape-avoidance coping style (most of the results < .2 *SD*).

Coping styles in men

Similar analyses conducted on the group of men also allowed us to distinguish four clusters. The results are presented in Table 2, and the resulting coping strategy preference profiles are illustrated in Figure 2.

Table 2. Results of cluster analysis of male subjects in relation to their coping strategy preferences

Coping strategies	Clust.1 $N = 61$ (28%)	Clust.2 $N = 63$ (29%)	Clust.3 $N = 41$ (19%)	Clust.4 $N = 56$ (25%)	$F_{(3.217)}$*
1) active coping	.51	.33	−.97	−.11	33.14
2) planning	.70	.05	−.89	−.12	31.16
3) seeking social support – instrumental	−.31	.64	−.75	−.48	29.05
4) seeking social support – emotional	−.63	.53	−.80	−.60	39.47
5) suppression of competing activities	.63	.24	−.52	.09	14.04
6) turning to religion	−.22	.06	−.33	−.28	2.20
7) positive reinterpretation and growth	.69	−.06	−.44	−.13	19.33

8) restraint coping	.45	.40	−.07	−.60	16.44
9) acceptance	.51	.15	.17	−.61	15.80
10) focus on and venting of emotions	−.85	.57	−.53	−.66	50.30
11) denial	−.06	−.01	.94	−.65	24.31
12) mental disengagement	−.48	.28	.62	−.90	32.66
13) behavioral disengagement	−.33	.23	1.13	−.56	43.74
14) alcohol-drug disengagement	.00	.51	.39	−.45	11.83
15) humor	.92	.05	.40	−.32	21.56
16) use of Internet	−.42	.58	.55	−.54	28.72

Note. * All significant, at $p < .001$, except for strategy no. 6, "turn to religion", at $p = .89$.
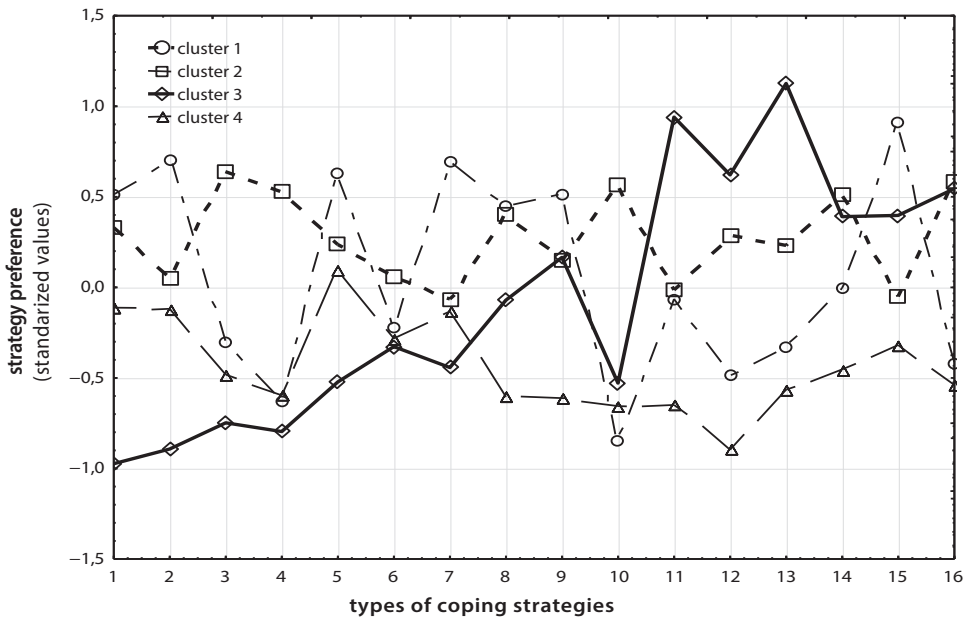

Figure 2. Clusters of male Internet users representing different styles of coping
Key. Types of coping strategies as in Table 2.
Cluster 1: task-based, confrontational coping; Cluster 2: active, emotion-focused coping;
Cluster 3: escape-avoidance coping; Cluster 4: inactive, but not avoidance coping.

First cluster included 61 men (28% of the study group). What distinguished them from the others the most were their above-average results (> .5 SD) in the use of active coping, planning skills, positive reinterpretation, avoiding competitive actions, acceptance, humor, and restraint from taking impulsive actions (results > .4 SD). Moreover, they showed significantly weakest focus on and venting of emotions, and did not display a particular tendency for seeking support, especially emotional one (results < −.5 SD). They also have no tendency for using the escape-avoidance coping style (results below average). Their coping style can be described as confrontational or focused on problem-solving, with a strong tendency for the use of humor and lack of focus on emotions (1M style). Second cluster included 63 men (29%), characterized by an above-average (results > .5 SD) and, at the same time, the highest result among all the clusters in seeking social support, focusing on and venting of emotions, as well as in the tendency for using alcohol or other substances, and the tendency for using the Internet for coping. These male participants are rather active and able to restrain themselves from taking impulsive action (results > .3 SD). However, they also scored higher than average in mental disengagement and behavioral disengagement (results > .2 SD). Their coping style could be described as active (most of the results above the average), focused on emotions and seeking support, with a slight tendency for escapism and avoidance (2M style).

Third cluster included 41 men (19%), who were clearly using the escape-avoidance style, with an extreme tendency for suppressing activities (result > 1 SD) and high preferences for denial, disengagement, and using the Internet for coping (results > .5 SD; 3M style). These participants also showed an above-average inclination toward the use of alcohol and humor. Compared with the subjects in the other study clusters, they were significantly the weakest – below average (results < −.5 SD) – in coping by taking active action, planning, seeking support, and avoiding competing activities. Their results in religious coping and positive reinterpretation also fell below average, which was at the same time the lowest in the whole study sample (results < −.3 SD).

Fourth cluster included 56 men (25%) in general incorporating the inactive coping style (almost all results below average), neither focused on tasks nor emotions (4M style). The participants in this cluster are distinguished by the lowest use of the escape-avoidance strategies and low suppression and acceptance results (< −.5 SD). They are also characterized by the lowest result in the use of humor compared to the other clusters (< −.3 SD).

Female styles of coping in correlation with PIU and outcome expectations of Internet use

In the next step of the study, we analyzed the variance of outcome expectations of Internet use and the severity of PIU symptoms against the clusters of study participants, formed on the basis of their coping strategy preferences (see Tables 1–2 and

Figures 1–2). The analyses were carried out separately for female and male participants. The results of the analysis carried out in the group of women are given in Table 3 (p. 432).

The results provided in Table 3 demonstrate that women using the escape-avoidance coping style (3W) displayed a statistically significant difference with the highest intensity of PIU symptoms relative to the other clusters. These women also showed the highest expectations of the compensatory outcomes of Internet use, which are significantly higher in this group than in the female participants using the confrontational (2W) and the extremely passive coping styles (4W). There were no statistically significant differences in the intensity of compensatory outcome expectations between the women using the escape-avoidance coping style (3W) and those using the highly active coping style but with a tendency to disengage from problems and to avoid negative emotions (1W). The women following the 1W style also showed significantly higher severity of PIU symptoms and higher expectations of the compensatory and hedonistic outcomes of Internet use than did those using the 2W style.

Furthermore, women with a preference for escape-avoidance coping (3W) had the highest hedonistic outcome expectations, significantly different from those found in women using the confrontational (2W) and extremely passive styles of coping (4W). They showed no statistically significant differences when compared to the women using the highly active coping style with a tendency for the disengagement and emotion avoidance strategies (1W).

Statistically significant differences, which consisted in a higher level of pragmatic outcome expectations of Internet use, were found in women using the escape-avoidance coping style (3W) in relation to those using the extremely passive coping style (4W). However, within the scope of these expectations, no statistically significant differences were found between the women with the 3W style, the confrontational style (2W), and the highly active style (1W). There were no significant differences in interpersonal outcome expectations between the women using the escape-avoidance coping style (3W) and those from the other clusters.

Statistically significant differences were also found between the higher interpersonal and pragmatic outcome expectations of women using the highly active coping style (1W), and the same expectations in women using the extremely passive coping style (4W).

Worth noting is that the women using the confrontational coping style (2W) displayed nominally the lowest severity of PIU symptoms, as well as the lowest compensatory, hedonistic and interpersonal outcome expectations. They also demonstrated a significantly lower severity of PIU symptoms than the female participants from the other clusters, followed by significantly lower compensatory and hedonistic outcome expectations than the women using the escape-avoidance (3W) and the highly active coping styles (1W). Further differences were additionally observed between the 2W and 1W groups in that the former showed significantly lower interpersonal outcome expectations.

Table 3. Results of the analysis indicating the differences in Internet outcome expectations and the severity of PIU symptoms among the clusters of female Internet users as determined by their coping styles

Independent variable	Independent variable – clusters	$M_{std.}$	$H_{(3,273)}$	z-values of comparisons between clusters		
				1	2	3
Interpersonal expectations	1	.31				
	2	-.30	24.65***	4.34***		
	3	.12		1.37ns	2.15ns	
	4	-.25		3.76**	.27ns	2.08ns
Pragmatic expectations	1	.29				
	2	-.05	23.66***	2.40ns		
	3	.26		.20ns	1.74ns	
	4	-.61		4.52***	2.60ns	3.74***
Hedonistic expectations	1	.30				
	2	-.39	29.76***	4.57***		
	3	.42		.56ns	4.27***	
	4	-.19		2.56ns	1.11ns	2.70*
Compensatory expectations	1	.21				
	2	-.44	30.35***	4.69***		
	3	.41		.42ns	4.23***	
	4	-.20		2.63ns	1.14ns	2.64*
Increase in PIU symptoms	1	.08				
	2	-.51	53.06***	4.15***		
	3	.93		3.76***	7.14***	
	4	-.07		.70ns	2.65*	3.83***

Key. Clusters as in Figure 1. $M_{std.}$ – mean standard; H – Kruskal-Wallis Test results; ns – statistically non-significant difference; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4. Results of the analysis indicating the differences in Internet outcome expectations and the severity of PIU symptoms among the clusters of male Internet users as determined by their coping styles

Independent variable	Independent variable – clusters	$M_{std.}$	$H_{(3.273)}$	z-values of comparisons between clusters		
				1	2	3
Interpersonal expectations	1	−.11				
	2	.22	5.20^{ns}	2.06^{ns}		
	3	.21		1.22^{ns}	$.62^{ns}$	
	4	−.01		$.36^{ns}$	1.66^{ns}	$.87^{ns}$
Pragmatic expectations	1	.17				
	2	.13	3.06^{ns}	$.56^{ns}$		
	3	−.15		1.71^{ns}	1.22^{ns}	
	4	−.08		$.88^{ns}$	$.34^{ns}$	$.90^{ns}$
Hedonistic expectations	1	−.08				
	2	.42	14.81^{**}	2.49^{ns}		
	3	.41		2.20^{ns}	$.01^{ns}$	
	4	−.19		$.69^{ns}$	3.14^{**}	2.79^{*}
Compensatory expectations	1	−.07				
	2	.33	18.70^{***}	2.34^{ns}		
	3	.56		3.05^{**}	$.98^{ns}$	
	4	−.18		$.68^{ns}$	2.98^{*}	3.63^{**}
Increase in PIU symptoms	1	−.38				
	2	.26	28.39^{***}	4.10^{***}		
	3	.56		4.27^{***}	$.63^{ns}$	
	4	−.29		$.98^{ns}$	3.04^{**}	3.33^{**}

Key. See Table 3.

**Male styles of coping in correlation with PIU
and outcome expectations of Internet use**

Table 4 (p. 433) presents the results of the variance analysis we ran for the severity of PIU symptoms and outcome expectations of Internet use among the clusters of men using a particular coping style. Similarly to the group of women, male participants preferring the escape-avoidance coping style (3M) were distinguished by the highest severity of PIU symptoms and differed significantly in this regard from the men who use task-based coping (1M) or passive coping (4M). We found no statistically significant differences in the severity of PIU symptoms among the male participants using the 3M coping style and the style focused on problems, emotions and seeking support with an increased tendency for escape and avoidance (2M). Men from clusters 2 and 3 showed significantly higher severity of PIU symptoms than did those from clusters 1 and 4.

Within the clusters compared, participants using the escape-avoidance coping style (3M) also displayed the highest compensatory outcome expectations, significantly higher than did the men from clusters 4 and 1, but not significantly different from those in cluster 2. The latter also differed significantly from those in cluster 4 in the higher intensity of compensatory outcome expectations.

In terms of hedonistic outcome expectations, the differences between the men in clusters 3 and 2 were statistically insignificant and their nominal value was entirely blurred. However, compared with the men from cluster 4, participants in both clusters 3 and 2 differed significantly in their statistically higher hedonistic outcome expectations. At the same time, they did not differ significantly in the scope of these expectations from the men in cluster 1.

We found no statistically significant differences in terms of pragmatic and interpersonal expectations among the distinguished clusters (representing the coping styles preferred by the male participants). However, it can be observed that the men from clusters 2 and 3 had nominally higher interpersonal expectations than did those who used the other coping styles.

Discussion

The findings of the study into the preferences for coping strategies allowed for distinguishing four clusters of women and four clusters of men demonstrating significant differences in these preferences. As expected, one of the clusters in both the male and female participant groups was characterized by the use of the escape-avoidance coping style. The studied women who relied on this style (see Figure 1, cluster 3) are characterized by a very high tendency for suppressing actions and applying behavior disengagement when faced with stress, and by a high inclination toward denial, use of alcohol and/or other substances, use of the Internet for coping, as well as a focus on and venting of emotions for coping. At the same

time, these women scored low on the active coping strategies, planning, positive reinterpretation and growth, and suppression of competing activities.

The escape-avoidance coping style of a similar character was also found in the group of male participants (see Figure 2, cluster 3). Men representing this style are distinguished by a very high preference for behavioral disengagement and a high inclination for denial, mental disengagement, and use of the Internet for coping. These men also achieved low results in active coping, planning, use of emotional and instrumental support, suppression of competing activities, and focus on and venting of emotions.

In line with the preliminary assumptions of this study, it was shown that both women and men using the escape-avoidance coping style had the highest severity of PIU symptoms. They also displayed the highest compensatory and hedonistic outcome expectations of Internet use, which means that what they expect from the use of the Internet is a positive transformation, liberation from insecurities and inhibitions, positive mood changes, detachment from stressful reality, and entertainment (Poprawa, 2009; Brand, Laier, & Young, 2014). Consistent with other studies, it was demonstrated that behavioral and mental disengagement when facing stress was the dominant escape-avoidance strategy in the participants most compulsively engaged in online activities. Strong reliance on these two escape-avoidance strategies coincides with the preference for other strategies as well, including denial, use of substances, and use of the Internet to escape problems and ensure mental comfort (see Brand, Laier, & Young, 2014; Deatherage, Servaty-Seib, & Aksoz, 2014; Chou et al., 2015; Kuss et al., 2017; McNicol & Thorsteinsson, 2017). The coping style of those with the highest results in the problematic use of the Internet is not only characterized by an increased preference for the strategies of the escape-avoidance spectrum, but also, as anticipated, by a significantly weaker use of active, problem-oriented strategies, as confirmed by other studies as well (Li et al., 2016).

It should also be noted that people who in general opt for the active coping style, focused on problem-solving and emotional regulation, but at the same time using disengagement strategies and avoiding negative emotions, including those ready to use the Internet for this purpose, may constitute a higher PIU risk group. In this study, such individuals were represented by the female participants from cluster 1 and the male participants from cluster 2 (see Tables 3 and 4). What seems of key significance in this respect is these individuals' increased tendency to use the Internet to seek psychological relief and mental comfort, an inclination predisposing them to forming pro-addictive outcome expectations of Internet use, thus increasing the risk of PIU.

The findings from this study also indicate the presence of a coping style that can act as a prevention against the risks associated with the problematic use of the Internet (see Li et al., 2016; Grzegorzewska & Cierpiałkowska, 2018). The style in question (found both in women and in men from their respective cluster 1 – see Figures 1 and 2) is described here as confrontational coping. It is characterized by

an above-average inclination to use active coping and a focus on problem-solving, without a tendency for using escape-avoidance strategies, including, of course, using the Internet for coping.

Interestingly, our findings also indicated that inactive, passive coping, without an inclination toward escape-avoidance coping, poses no risk of PIU (see Poprawa, 2011a). Participants relying on this style were the men and women grouped in their respective cluster 4 (see Table 3 and 4), scoring very low on the PIU and having below-average outcome expectations of Internet use. These results confirm that it is the presence of an intensified escape-avoidance tendency to use the Internet for coping, rather than the lack of the active coping style focused on problem-solving, that is insignificant positive correlation with the risk of PIU.

Limitations

Although we assumed that the increase in Internet expectations and PIU symptoms are dependent variables, and that the coping style is a personality-related independent variable, it cannot be ruled out that the increased compulsive entanglement in the use of the Internet increases the individuals' inclination toward the escape-avoidance coping style. The symptoms and consequences of addictive Internet use entail deep deterioration of the mental, social and physical functioning of the individual, lowering their mental well-being as a consequence (Young, 1999; Griffiths, 2005; Shaw & Black, 2008; Caplan, 2010; Poprawa, 2011b; Brand, Laier, & Young, 2014; Pontes, Kuss, & Griffiths, 2015; Griffiths et al., 2016; Izdebski, Kotyśko, 2016; Grzegorzewska & Cierpiałkowska, 2018). According to the theory and research in the field of stress and coping, the use of escape-avoidance strategies is not only the result of personality-related susceptibility to stress and the individual deficits and defects that lead to the development of a relatively permanent, personality-dependent style of functioning. In addition, the use of these strategies is enhanced when individuals find themselves in particularly difficult, crisis situations, losing control over their own lives (Hobfoll, 1998; Heszen, 2013). Those overly involved in Internet use can respond to the difficult life situations, conflicts, damage and distress incurred by that involvement through an additional increase in the use of escape-avoidance strategies. Undoubtedly, that increase is fostered by pre-existing personality-dependent vulnerability and the developed escape-avoidance coping style.

A brief interpretation of these findings could suggest that as many as 16–19% of subjects identified as users of the escape-avoidant coping style (see Tables 1 and 2) are compulsively entangled in using the Internet. This would, however, be an unjustified conclusion, as epidemiological studies indicate that IA in Europe or in Poland affects a mere 2–4% of Internet users (Poprawa, 2012; Müller, 2014; Izdebski, Kotyśko, 2016; Grzegorzewska & Cierpiałkowska, 2018). Not all of those using the escape-avoidance strategies or coping using that style are engaged in PIU and develop Internet addiction. The escape-avoidance coping style based on re-

source deficits and defects can also foster other forms of dysfunctional adaptation and behavior, such as the use of substances and alcohol, or exacerbation of other psychopathological symptoms (Cooper, Russell, & George, 1988; Moos & Schaefer, 1993; Cooper, Frone, & Russell, 1995; Hobfoll, 1998; Cooper et al., 2003; Poprawa 2011a). As demonstrated by this study, the escape-avoidance coping style is associated with the preference for a set of reactions performing escape-avoidance functions, from behavioral and mental disengagement, through denial, use of alcohol and psychoactive substances, to the use of media. Studies suggest that personality deficits and defects manifest in a particular dysfunctional behavior or psychopathology depending on the favorable environment and life circumstances, social incentives, availability of specific forms of behavior, individual stage of development, and a set of mediating cognitive variables, including outcome expectations of a given dysfunctional coping strategy (Cooper, Frone, & Russell, 1995; Cooper et al., 2003; Brand, Laier, & Young, 2014; Grzegorzewska, Cierpiałkowska, 2018). Numerous studies suggest similar causes, although different paths for developing addictive behavior have been revealed as well (Cooper et al., 2003; Kuss et al., 2017; Grzegorzewska & Cierpiałkowska, 2018).

Unfortunately, this study did not analyze the specific stress vulnerability or psychopathological background, which underlie the escape-avoidance coping style, as was the case in other studies, for instance, those by Brand, Laier, & Young, 2014 and Kuss et al. (2017). We assumed these specific factors simply must be present when individuals develop the escape-avoidance coping style. This hypothesis requires verification. Future research should also include vulnerability and psychopathology variables so that the compensatory-escapist mechanism can be fully verified.

Significance for prevention and therapy

The significance of the escape-avoidance coping style for the formation of pro-addictive outcome expectations of Internet use and, ultimately, for the risk of PIU demonstrated in this study could have diverse practical applications. Firstly, an inclination toward escape-avoidance coping recognized early can serve as a significant warning flag for the possible future and current behavioral problems, as well as incorrect adaptation to the demands of life. Secondly, this coping style is likely underlined by certain deficits or defects of coping resources and unsatisfied needs. Therefore, individuals need assistance in resolving such deficits and defects, and in satisfying their needs in a constructive way, such that they would not search for compensation or relief from distress in risky coping behaviors. Thirdly, rather than used only in therapy, the above assistance additionally depends on teaching constructive coping styles as part of a prevention strategy. And finally, it is necessary to assist individuals in keeping their outcome expectations of Internet use more realistic as well as, which can be done by raising their

awareness of the existing threats, as well as helping them understand that using the Internet is not a cure-all solution for the difficulties they do or will experience throughout their lives (see Brand, Laier, & Young, 2014; Grzegorzewska & Cier-piałkowska, 2018).

Conclusions

Overall, the results of our study seem to confirm that PIU is characterized by a compensatory-escapist mechanism. As outlined in this mechanism, the deeply internal, distal grounds of the problematic or addictive use of the Internet are the psychosocial deficits and defects (psychopathological symptoms), such as lack of fulfillment of individual needs, low self-esteem, high discrepancy between the ideal self and real self, low psychological well-being, social anxiety, depression, loneliness, and so forth. This state creates, on the one hand, the need to compensate for these deficits and dysfunctions, and on the other, the need to escape the unpleasant emotional states that they incur, improve subjective well-being, or search for more pleasant states that enhance the well-being of the individual. As both a medium and an environment, the Internet is not without certain unique properties: it is available easily, fast and practically ceaselessly (e.g., through the use smartphones); it gives a multitude of exciting opportunities for self-expression, self-creation, and social interaction; and it creates the possibility to fulfill different individual and social needs. What is more, the Internet offers the illusion of anonymity, personal security, full control and the freedom to decide what should be revealed and what should be hidden or repressed. These particular properties of the Internet interact with the needs, deficits and defects of coping resources in individuals, leading to a situation where specific Internet applications take on a particular motivational meaning for those able and willing to use them. This generates the risk of addictive involvement in specific, highly gratifying online activities (cf. Song et al., 2004; Lin, Ko, & Wu, 2008; Poprawa, 2009; 2011b; Caplan, 2010; Kwon, Chung, & Lee, 2011; Brand, Laier, & Young, 2014; Kardefelt -Winther, 2014a; 2014b; 2017; Cheng, Sun, & Mak, 2015; Chou et al., 2015; Li et al., 2016; Kuss et al., 2017; McNicol & Thorsteinsson, 2017; Allen & Anderson, 2018).

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STYL RADZENIA SOBIE ZE STRESEM
A RYZYKO PROBLEMOWEGO UŻYWANIA INTERNETU

Streszczenie. Celem badań była weryfikacja znaczenia ucieczkowo-unikowego stylu radzenia sobie w ryzyku problemowego używania internetu (PUI). Założono, że osoby o ucieczkowo-unikowym stylu radzenia sobie, w przeciwieństwie do osób radzących sobie w innych stylach, będą miały istotnie silniejsze hedonistyczne i kompensacyjne oczekiwania efektów korzystania z internetu i większe nasilenie symptomów PUI. Badania przeprowadzono na próbie 508 użytkowników internetu, w wieku od 18–33 lat. Na podstawie kwestionariusza COPE, poszerzonego o strategię używania internetu, metodą analizy skupień wyodrębniono po cztery grupy kobiet i mężczyzn, istotnie różniące się profilami preferencji strategii radzenia sobie. Wyłoniono osoby o ucieczkowo-unikowym stylu radzenia sobie, charakteryzujące się skłonnością do: behawioralnego i poznawczego uwalniania się, zaprzeczania, zażywania substancji oraz wykorzystywania internetu w celu radzenia sobie. Zgodnie z założeniami, osoby te miały istotnie najsilniejsze oczekiwania hedonistyczne i kompensacyjne oraz nasilenie symptomów PUI. Dwa inne style radzenia sobie, bierny i konfrontacyjny, oba bez skłonności do korzystania ze strategii ucieczkowo-unikowych, nie stwarzały ryzyka PUI i mogą pełnić funkcje ochronne.

Słowa kluczowe: uzależnienie od internetu, problemowe używanie internetu, styl radzenia sobie, radzenie sobie ucieczkowo-unikowe, oczekiwania efektów