

# The Relationship between Basic Psychological Needs and Internet Addiction with the Moderating Role of Problem-oriented Coping Style

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## Abstract

**Introduction:** Failure to satisfy the basic psychological needs may cause Internet addiction for the adolescents. Heterogeneity of outcomes may originate from individual characteristics such as coping style. Therefore, the present study aimed to look at whether the problem-oriented coping style can play a moderating role in the relationship between basic psychological needs and Internet addiction.

**Method:** This research was a descriptive-correlational study. For this purpose, 361 students were selected from Yasouj University by cluster random sampling. Three questionnaires were used to collect data: Basic Psychological Needs Questionnaire, Internet Addiction Questionnaire, and Stress Coping Strategies Questionnaire. Descriptive statistics and the Partial Least Squares (PLS) were used to process the data.

**Results:** According to the findings of the present study, there was a negative relationship between satisfying the basic psychological needs and Internet addiction. The results also showed problem-oriented coping style as a moderating and influential variable between the basic psychological needs and Internet addiction.

**Conclusion:** Overall, the most important contribution of this study is to explain a correlation and moderation model that is consistent with both stress management and self-determination theory. As a result, interventions based on self-determination theory (e.g., informing programs that enhance adolescent autonomy, relatedness, and competence) may be effective in reducing Internet addiction.

**Keywords:** Internet Addiction, Problem-oriented Coping Style, Basic Psychological Needs

## Introduction

Internet addiction has become a mounting concern in recent years [1]. There is now ample evidence that this addiction is very common in adolescents [2, 3]. It has also played a major role in poor mental health, academic challenges, and psychosocial problems [4-6]. Therefore, it is necessary to examine the risk factors and mechanisms that put adolescents at an increased risk of Internet addiction.

Via the Internet, the adolescence can satisfy their psychological and emotional needs due to its false attractions [7, 8]. The relationship between psychological satisfaction and Internet addiction is explained in the theory of self-determination [9]. According to this theory, human beings have basic and universal psychological needs for autonomy, relatedness, and competence. Autonomy refers to a person's need for a sense of choice and

self-initiation in performing actions and tasks [10]. Competence is the need to be effective in interacting with the environment. It shows the desire to use talents and skills and pursue challenges and tasks in line with mastering abilities [11]. Finally, the need for relatedness refers to feeling confident when having a relationship with others and the need to accept the person as a person worthy of love and respect by others [12]. These basic psychological needs are essential "nutriments" for individual well-being and thriving. If adolescents cannot satisfy their psychological needs in one social context for a long time, they would become maladjusted or demotivated to seek satisfaction in other social contexts [13]. Psychological needs are not only the experiential outcomes affected by social contexts but are also internal motives that prompt ameliorative behavior when an essential experience is lacking [14, 15]. In other words, basic psychological needs satisfaction is a key motivational mechanism that explains how social environmental factors influence human development.

When they cannot satisfy their psychological needs in real life, they may turn to online activities [16]. Numerous studies have shown the relationship between psychological needs and Internet addiction [9, 17-23]. Allen and Anderson [17] examined the basic psychological needs in the real world and in video games and their role in predicting well-being and Internet addiction. Their findings showed that failure to satisfy basic psychological needs had a positive and significant relationship with Internet addiction. In addition, the results showed that satisfying the needs in the real world could be sufficient to prevent the growth of Internet addiction. On the other hand, satisfying basic psychological needs had a positive and significant relationship with psychological well-being [17]. Also, the results of Fathi et al. [19] showed that the components of basic psychological needs, the need for autonomy and the need for relatedness to the tendency to addiction have a negative and significant relationship.

Failure to satisfy basic psychological needs may affect Internet addiction [8]. However, not all adolescents who fail to satisfy basic psychological needs develop Internet addiction [9]. Heterogeneity of outcomes may originate from individual characteristics that moderate (i.e., buffer or exacerbate) the impact of basic psychological needs on Internet addiction such as coping style. Coping style refers to a person's general tendency or enduring disposition to handle stressors with a specific constellation of coping strategies [24]. Positive/approach coping includes strategies such as problem-solving, support seeking, and cognitive restructuring that aim to directly address the stressors. Negative/avoidant coping, in contrast, includes strategies such as denial, blaming, social withdrawal, and disengagement that aim to avoid the stressful situations [25]. According to the theory of Lazarus and Folkman [24], stress and how to cope with them are important for a person's well-being. If coping is ineffective, stress can be highly impactful and have dire consequences for health, mood, and social functioning. However, if it is effective and productive, stress can likely stay under control [24]. In support of this theory, numerous studies have shown that

coping styles play an important role in adolescent Internet addiction and a moderating role in the relationship between psychological needs and Internet addiction [26-34]. For instance, Zhou [31] found that positive coping (e.g., problem-solving, seeking social support) was negatively associated with Internet addiction, whereas negative coping (e.g., wishful thinking, withdrawal, self-blame) was positively associated with Internet addiction [31]. Lei et al [26] in meta-analysis of the relationship between coping style and Internet addiction showed a negative and moderate correlation between positive coping and Internet addiction and a positive and moderate correlation between negative coping and Internet addiction [26]. Researchers have recently argued that Internet addiction and other forms of behavioral addiction such as gambling can be deemed as a coping mechanism for adolescents who use real-life stressors to distract themselves [35, 36]. Accordingly, the Iranian society is facing problems in the field of Internet addiction due to its young population as the age of Internet addiction has significantly dropped. Therefore, many studies have been conducted on the relationship between individual and social variables with Internet addiction in adolescents. At first, these studies did not have the necessary coherence. Secondly, to date, there has been no studies regarding the moderating role of problem-oriented coping style in the relationship between basic psychological needs and Internet addiction in adolescents. Therefore, based on the theory of coping styles and empirical evidence, the purpose of this study was to investigate the following whether problem-oriented coping style has a moderating role in the relationship between basic psychological needs and Internet addiction or not.

## Method

In this descriptive-correlational study, the statistical population included all student users of Yasouj University in virtual social networks in the academic year of 2020-21, which was about 7000 students. The sample size was 361 based on Krejcie and Morgan's table selected according to cluster random sampling method. The inclusion criteria included spending at least two semesters, using the Internet for at least an hour a day, and a willingness to participate in the research. The exclusion criteria included non-cooperation in completing the questionnaires and completing the questionnaire incompletely. The sample was selected by randomly selecting several disciplines from different faculties of the university and then randomly selecting two classes from each discipline and distributing questionnaires. It should be noted that the simultaneous outbreak of coronavirus with the end of the questionnaires led to the distribution and completion of more than one hundred questionnaires through social networks. In addition, as some questionnaires were expected to be incomplete, 410 questionnaires were initially distributed and collected. After reviewing the questionnaires, the incomplete questionnaires were discarded and finally 361 questionnaires were analyzed. In total, the subjects were 142 (39%) boys and 219 (61%)

girls. In order to collect data, three questionnaires were used:

**Basic Psychological Needs Questionnaire:** Desi and Ryan's Basic Needs Satisfaction Questionnaire (1989) was used to assess the satisfaction of basic psychological needs [37]. It consists of 21 items graded on a seven-point Likert scale from one (not true at all) to seven (absolutely true). It includes three dimensions of the need for autonomy including items (1, 4, 8, 11, 14, 17, 20), need for relatedness includes items (2, 6, 7, 9, 12, 16, 18, 21) and the need for competence includes items (3, 5, 10, 13, 15, 19) and the scoring method is the reverse for items 3, 4, 7, 11, 15, 16, 18, 19, 20. Sadati and Moltafat [37] reported that the validity of the questionnaire in the samples of Iranian administrators and students was desirable. The reliability coefficients obtained from its implementation on the mother, father, romantic partner and friends of the subjects were reported to be 0.90, 0.92, 0.89 and 0.86, respectively [38]. In the present study, Cronbach's alpha coefficient for the need for relatedness, autonomy, and competence were obtained as 0.74, 0.65, and 0.63 respectively.

**Internet Addiction Questionnaire:** This questionnaire includes 20 items prepared and validated by Yang et al. [33] in 2007. It is based on a 6-point scale (ranging from 1=ever to 6=never). The obtained score is the total score of the questionnaire and will range from 20 to 100. As it is clear, the higher a person's score, the higher their Internet addiction. McMurrin and Widyanto [39] in their study reported the convergent validity of this questionnaire very high and its correlation coefficient has been reported as 0.81. Also, the reliability of the questionnaire was calculated to be 0.88 using Cronbach's alpha coefficient and the reliability of this questionnaire was calculated to be 0.79 using the retest method. In the present study, Cronbach's alpha coefficient was 0.93.

**Coping Strategies Questionnaire:** This questionnaire has been designed by Endler and Parker [40] in 1990, using problem-oriented style subscale. It has 48 items that assess the three styles of problem-oriented (16 items), emotional (16 items) and avoidance (16 items) [40]. Each item is scored on a 5-point range from one (never) to five

(very high). Endler and Parker [40] reported Cronbach's alpha coefficient for problem-solving coping styles of 0.92 [40]. In Sepehrian Azar's [41] research, Cronbach's alpha coefficient for problem-oriented coping style was 0.86. He made use of the factor analysis to examine the validity of the questionnaire. The results showed three coping styles and proper goodness of fit with data as well. [41]. In the present study, Cronbach's alpha coefficient was reported to be 0.87.

## Results

Table 1 shows the correlations between the variables. The correlation coefficient of the research variables with Internet addiction was 0.31 to 0.39.

This study investigated whether problem-oriented coping style has a moderating role in the relationship between basic psychological needs and Internet addiction or not.

In this hypothesis, the independent variable is the basic psychological needs, the dependent variable is Internet addiction and the variable is the moderator of problem-solving style. The test of the hypothesis using PLS software is visible in Figure 1.

According to the fitted model of Figure 1, the standardized regression coefficient of basic psychological needs with Internet addiction is -0.24, and the regression coefficient of the effect of problem-oriented coping style on Internet addiction is -0.31. Also, the regression coefficient of the moderating variable of problem-oriented coping style in the relationship between basic psychological needs and Internet addiction is -0.12. In this model, the explained variance ( $R^2$ ) was 0.23, SRMR was 0.06, d-ULS was 0.89, d-G is 0.90, and NFI was 0.75, all of which indicate an acceptable fit of the overall model. The value of  $Q^2$ , which represents the proportion of the model predictors for Internet addiction variable was 0.36, the problem-oriented coping style was 0.27, and the basic psychological needs are 0.49. As Table 3 shows, given that Cronbach's alpha numbers, combined reliability, and AVE are all in the respective range. As a result, we can confirm the appropriateness of the convergent reliability and validity of the external relations of the research model.

**Table 1. Means, SD, and Correlations Variables**

Variables	M	SD	1	2	3
1. Basic Psychological needs	17.60	2.69	-		
2. Problem-oriented coping style	51.81	7.78	0.36**	-	
3. Internet addiction	79.47	16.30	0.31**	0.39**	-

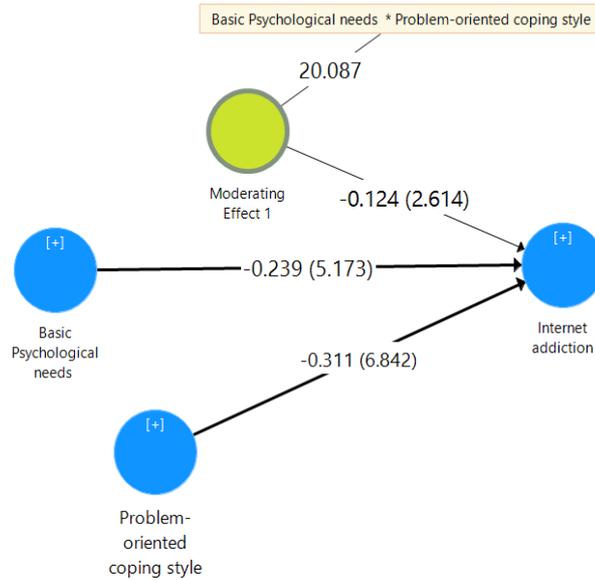
\*p < 0.05. \*\*p < 0.01.

**Table 2. Summary of structural model fit in the relationship between basic psychological needs and Internet addiction role with the moderating role of problem-oriented coping style.**

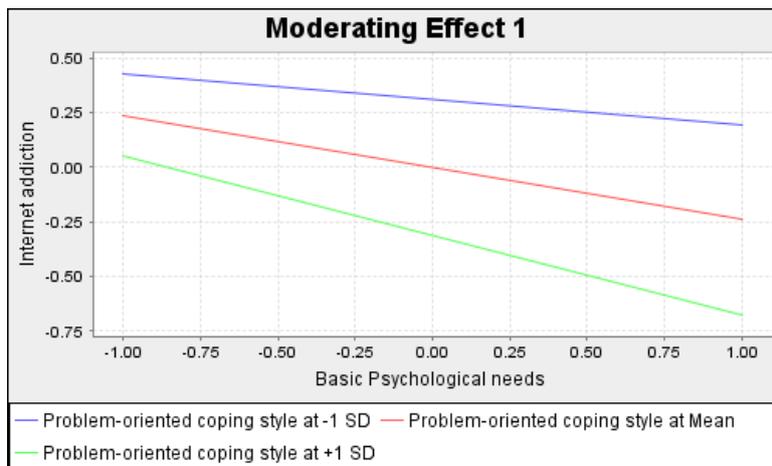
$R^2$	SRMR (SRMR≤0.08)	d-ULS 0.95)≤(d-UIS	d-G (d-ULS≤0.95)	NFI (NFI≥0.90)	Chi-square
0.23	0.06	0.89	0.90	0.75	1999.70

**Table 3. Results of Cronbach's Alpha Criteria, Composite Reliability and Average Variance Extracted (AVE)**

Variables	Cronbach's Alpha (Alph≥0.70)	Composite Reliability (Alph≥0.70)	Average Variance Extracted (AVE) (AVE≥0.50)
1. Basic Psychological needs	0.65	0.73	0.40
2. Problem-oriented coping style	0.87	0.89	0.46
3. Internet addiction	0.93	0.93	0.51



**Figure 1.** Modulation of problem-oriented coping style in relation to basic psychological needs and Internet addiction.



**Figure 2.** The moderating role of problem-solving coping style in relation to basic psychological needs and Internet addiction.

Accordingly, the relationship between basic psychological needs and Internet addiction ( $r = -0.24$ ) is weaker in people with a high problem-oriented coping style than in a low problem-oriented coping style.

**Discussion**

The results showed that problem-oriented coping style has a moderating role in the relationship between basic psychological needs and Internet addiction. Numerous studies support this finding [26-31]. If the basic psychological needs are met, people can feel a sense of self-confidence and self-worth. Otherwise, they will have a fragile, negative, alien and critical perception of themselves which can affect their social components and sense of security, leading to their vulnerability to social injuries and addiction [42]. This finding supports the

theory of self-determination [13] stating that when social contexts fail to satisfy the basic psychological needs of individuals, individuals are motivated to pursue activities that can satisfy their psychological needs. This finding is also consistent with the theory of compensatory use of the Internet [16], which hypothesizes that life adversities can motivate adolescents to seek psychological comfort and gain a sense of independence, competence, and communication through Cyberspace. Many online programs are designed to provide opportunities and incentives to motivate users to make the Internet attractive to teens whose psychological needs are not being satisfied [43-45]. However, in explaining the moderating role of problem-oriented coping style, we can refer to the theory of coping styles of Lazarus and Folkman [24]. According to Lazarus

and Folkman [24], coping style is a variable behavioral and cognitive effort that adjusts to individual needs.

In their view, coping is a dynamic phenomenon that indicates the state of cognitive and emotional actions in dealing with stressful situations and its consequences. It also shows how to control internal needs and external demands especially when the needs are beyond the individual's ability and challenge his/her abilities.

The present study had some limitations. For instance, due to the cross-sectional nature of the study, we could not infer causal inferences about the observed relationships. Also, the study coincided with the outbreak of the Coronavirus and the subsequent closure of universities, so most of the questionnaires had to be completed through the WhatsApp application in student groups, which increased the careless execution of the questionnaires. Despite these limitations, our findings have important practical implications. Given that psychological need satisfaction is an important mechanism associated with Internet addiction, interventions derived from self-determination theory (e.g., outreach programs that promote adolescent autonomy, relatedness and competence) may effectively reduce Internet addiction. This is of paramount significance because previous interventions relied mostly on cognitive-behavior therapy, which may undermine the role of adolescents' psychological needs satisfaction. The findings of the present study also showed that problem-oriented coping strategies are an important protector in the negative impact of satisfying psychological needs and Internet addiction. Hence, developing positive coping skills can be a complementary component of intervention programs.

## Conclusion

Taken together, the most significant contribution of this study is the explanation of a correlation and moderation model that is consistent with both stress management theory and self-determination theory. This integrated model is an important extension of traditional self-determination theory. It addresses the critical issue of "what works for whom", revealing that psychological needs satisfaction is one of the primary mechanisms and adolescents' own coping style is one way to account for the heterogeneity in the impact of psychological needs satisfaction on Internet addiction in adolescents.

## Conflict of Interest

The authors have no conflicts of interest.

## Ethical Approval

All ethical principles were considered in this article. The participants were informed about the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information.

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