

Original Article

The Mediating Role of Coping Strategies in Relation with Psychological Needs and Internet Addiction among College Students

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Abstract

Introduction: Internet addiction has several negative consequences, including physical, psychological, social and educational problems. The current research intended to assess the mediating role of coping strategies in relation with psychological needs and internet addiction.

Methods: This cross-sectional study assessed 375 students (129 male, 244 female) from Karaj Islamic Azad University in 2018 which were selected by stratified sampling. Data were collected by self-report method. Research instruments were internet addiction test, satisfaction of psychological needs questionnaire and coping response scale. Data were analyzed by SPSS v.19 and using descriptive statistics, Pearson correlation coefficients and Concurrent hierarchical Regression analysis.

Results: Pearson correlation coefficients showed negative correlations between autonomy, relatedness, competence and internet addiction ($p < 0.01$). There is negative correlation between autonomy, relatedness, competence and maladaptive coping strategy ($p < 0.01$) and positive correlation between maladaptive coping and internet addiction ($p < 0.01$). Also, Hierarchical regression analysis by Baron and Kenny method showed that maladaptive coping is mediator between and satisfaction of psychological needs and internet addiction.

Conclusion: This results indicate that high level of satisfaction of psychological needs are associated with low level of internet addiction and unsatisfied of psychological needs has positive impact in maladaptive coping strategy, subsequently maladaptive coping increases internet addiction.

Declaration of Interest: None.

Key words: Coping; Internet addiction; Psychological needs

Introduction

To date, use of the Internet for many people, especially students, plays an important role in their daily life for both educational and entertainment purposes (1). In spite of many benefits of Internet, pathological use of this virtual space causes some problems including psychological, social, school or life-related issues (2).

In this regard evidences have shown that the prevalence of this disorder in students varies from 8% to 25% (3, 4). People with internet addiction with excessive use of the Internet, often contributes to individuals' waste of time, neglect of the job and creates feelings of anger, anxiety,

and depression when they do not have access to the Internet (5). Internet addiction would be classified as a distinct mental disorder in Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (6).

Young (1998) have proposed that internet addiction as well as alcohol and cigarette addiction has signs of addiction (7). Indeed Psychological and environmental factors in students' life may cause internet addiction (5), excessive use of the internet could be lead: reduced time spent with family and friends, lower psychological well-being (8), fewer self-esteem (9), reduce mental health (10) increased loneliness and depression (11), impulsiveness, sensitivity and social isolation (5).

Therefore, identifying the factors associated with Internet addiction is important. One of the important factors is the satisfaction of psychological needs representing the well-being and thriving of individuals (12). Deci & Ryan (13) argued that humans have psychological needs for autonomy, relatedness and competence. Failure to satisfy these three psychological needs will lead to maladjustment or cause people to be motivated to meet these needs in other social contexts. So these needs are met, they have a protective role against psychopathology (13). Unsatisfied psychological needs is the main source of individual motivation for using the Internet, in this way, individuals tend to become more active on the Internet to compensate for the lack of satisfaction of their needs (14). According to self-determination theory (13), if the social environment facilitates the satisfaction of

psychological needs, people experience psychological well-being. In contrast, if the three needs are not met, the behavior often will be no self-determination and individuals report ill-being. Researchers have suggested that satisfaction of needs causes emotional / physical responses, and subsequently leads to adaptive coping strategies and psychological need thwarting leads to maladaptive coping strategies that result in well-being or ill-being (15).

In addition, the mechanisms that mediate the relationship between the satisfaction of psychological needs and Internet addiction are unclear; for more perception, it's essential to understand how connect basic psychological needs with internet addiction to design effective interventions to reduce Internet addiction (12). Coping strategies that has short-term effects on the resolution of stressors, as well as long-term effects on psychological and physical well-being, may be one of the mediating variables. Coping strategies refers to responses that individual use to manage cognition, emotion, and behavior when they encounter stressful events (16). Generally, coping strategies are divided into two categories: adaptive coping strategy involves individual constructive actions in relation to stressful conditions and tries to eliminate or change the source of tension. Maladaptive coping strategy that includes attempts to regulate the emotional consequences of a stressful event and maintains emotional and emotional balance through controlling the emotions from a tense situation (17). Tang et al. (18) found that maladaptive coping increased the risk

of internet addiction, while there was no relationship between adaptive coping and internet addiction. Other research results (19) showed that both adaptive coping and maladaptive coping with internet addiction have a negative and positive relationship, respectively.

Considering that a study has not been conducted to examine the mediating role of coping strategies in relation to satisfaction of basic needs and internet addiction, in current study, we tested that whether maladaptive coping would mediate the relationship between competence, autonomy and relatedness with internet addiction..

Method

A cross-sectional study design was conducted in 2018 among students of Islamic Azad University of Karaj in Iran. Out of 12 colleges, colleges of Management, Accounting, and Law were randomly selected. Students were selected by stratified sampling, which consisted of 35% of men and 65% of women and the questionnaires were distributed among the students. To regard ethical considerations, students volunteering and unnamed questionnaires were considered.

Tools

Internet Addiction Test (IAT): This scale is developed by Young in 1998. It is a 20 item self-report scale based on a 5-point Likert scale to assess the IA and its severity (20). The scores for the individual items were summed up for obtaining a total scale which ranges from 20 to 100. The total score was interpreted with the

norm criteria of the scale which indicates mild, moderate or severe categories of IA. Students were assessed using the standardized Iranian version of Young's internet addiction test (21). Cronbach's alpha was 0.92.

Coping responses scale: Billings and Moos developed this scale in 1984 (22) that measures how people respond to stressful events and consist of 32 items that are rated on a 4-point Likert scale from 0=never to 3=always. Items 1,3,4,6,11,16,18,29 and 30 assess adaptive coping strategies and items 2,5,7,8,9,10,12,13,14,15,17,19,20,21,22,23,24,25,26,27,28,31 and 32 assess maladaptive coping strategies. In this study, Cronbach's alpha for adaptive and maladaptive coping strategies were 0.72 and 0.75.

Satisfaction of psychological needs: This scale consists of 21 items and measures the satisfaction of basic psychological needs at a general level. This scale measures three subscales of autonomy, competence, and relatedness in 7-point Likert scale from 1=definitely disagree to 7=definitely agree. A higher score in each sub-scale indicates a higher level of satisfaction. Cronbach's alpha has been approved from 0.83 to 0.91 in the research of Besharat and Ranjbar Kolagari (23). The reliability of the test retest has been reported with a coefficient of 0.67 to 0.77 for the subscales. In this study, Cronbach's alpha for autonomy, competence, and relatedness were 0.65, 0.73 and 0.70.

Result

According to the criteria of Young (1996), totally 51.8% students had IAT score below 50 (i.e. normal score), 48.2% had score above 50 (i.e. internet addicted).

Table 1 shows the sociodemographic of the whole sample according to severity of addiction (nonproblematic, problematic and addicted).

Table 1. Participant Characteristics by Internet Use Category

variables	nonproblematic		problematic		addicted	
	n	%	n	%	n	%
sex						
Male	51	31/67	56	37/5	7	70
female	110	68/32	93	62/41	3	30
Marital status						
Single	138	86/79	125	89/92	9	90
married	21	13/20	14	10/07	1	10
Living with						
Family	147	92/45	125	89/92	9	90
dormitory	0	0	3	2/15	0	0
alone	12	7/54	11	7/91	1	10
Employment						
Yes	97	62/58	91	66/42	5	50
No	58	37/41	46	33/57	5	50
Internet usage (per day)						
1-5 hours	109	68/98	59	46/09	3	30
6-10 hours	35	22/15	38	29/68	3	30
11-15 hours	5	3/16	7	5/46	0	0
≥16 hours	9	5/69	24	18/25	4	40
Income						
Low	35	23/02	25	19/53	3	30
Moderate	114	75	96	75	6	60
high	3	1/97	7	5/4	1	10

In table 2, the mean internet addiction, competence, relatedness, autonomy, adaptive coping and maladaptive coping are shown. Also Internet addiction was negatively correlated with competence, autonomy and relatedness (Table 2).

Maladaptive coping was positively correlated with internet addiction. Competence, autonomy and relatedness were negatively correlated with maladaptive coping.

Table 2. Correlation Matrix of Key Variables for the Adolescent Sample

measure	1	2	3	4	5	6
1.internet addiction	-					
2. competence	-0.35**	-				
3.relatedness	-0.32**	0.46**	-			
4.autonomy	-0.32**	0.53**	0.46**	-		
5.adaptive coping	0.06	0.23**	0.18**	0.19**	-	
6.maladaptive coping	0.38**	-0.34**	0.25**	0.30**	0.12**	-
M	48.04	27.45	37.65	31.82	14.08	30.78
SD	15.87	7.35	7.29	7.03	3.54	8.85

Mediation analysis was used to examine whether coping strategies mediates the relationship between psychological needs satisfaction and internet addiction. The mediation test was conducted according to Baron and Kenny (24). Mediation occurs (1) when the independent variable (psychological needs satisfaction) significantly affects the presumed mediator (coping strategies); (2) when the presumed mediator (coping strategies) significantly affects the dependent variable (internet addiction); (3) when the independent variable (competence, relatedness and autonomy) significantly affects the dependent variable internet addiction) in the absence of the presumed mediator

(coping strategies); and (4) if the effect of the independent variable (competence, relatedness and autonomy) on the dependent variable (internet addiction) after controlling for the presumed mediator (coping strategies) is zero, then this indicates a single, dominant mediator (coping strategies). If the first three regressions are met but the effect in the fourth regression is not zero, then this indicates partial mediation. Finally, if any confounders are verified in the correlation analysis, the series of regression analyses conducted above would also be computed after adjusting for confounders.

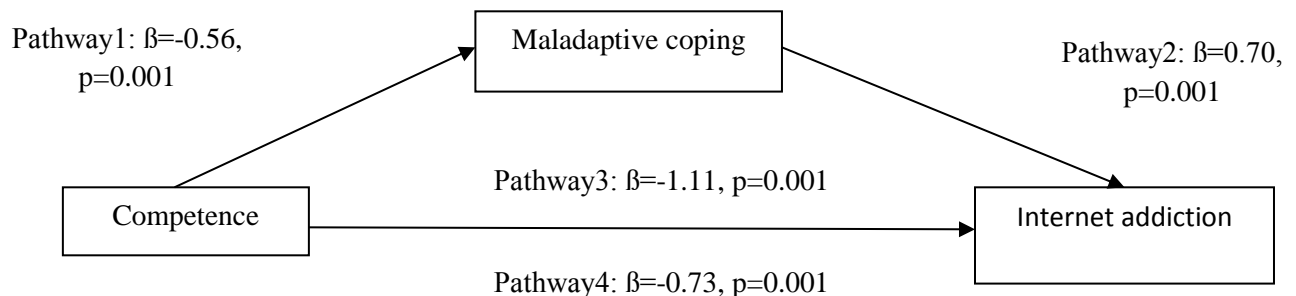


Figure1. mediation model showing the standardized linear regression coefficient (β) for the mediated pathways in which maladaptive coping mediated the relationship between competence and internet addiction.

We examined whether competence, internet addiction were mediated by maladaptive coping (figure 1). Competence was significantly associated with maladaptive coping ($\beta=-0.56$, $p=0.001$) (pathway1). Maladaptive coping was also significantly associated with internet addiction ($\beta=0.70$, $p=0.001$) (pathway 2). The β for the association between competence and internet addiction

without the proposed mediator (path 3) was -1.11 ($p = 0.001$). However, a reduction in the regression coefficient was found when maladaptive coping was included in the model simultaneously ($\beta = -0.73$, $p=0.001$) (path 4), which indicated partial mediation of self-care confidence in relation to competence and internet addiction.

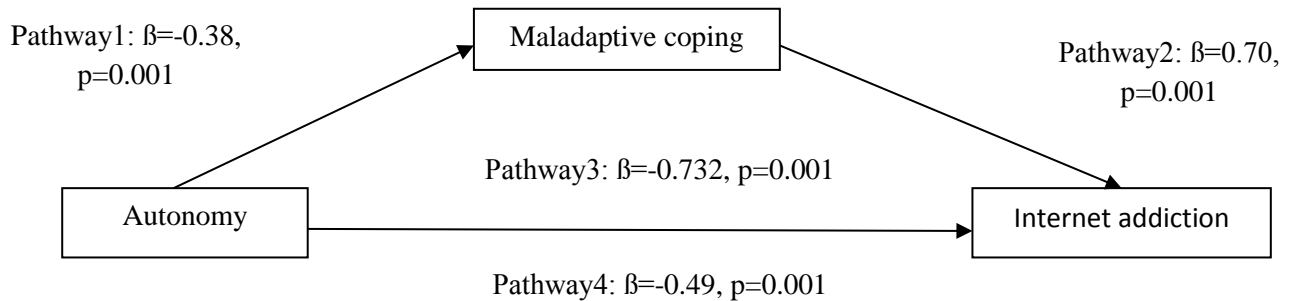


Fig.2. mediation model showing the standardized linear regression coefficient (β) for the mediated pathways in which maladaptive coping mediated the relationship between autonomy and internet addiction.

Next, similar analyses were conducted to examine the mediating effect of maladaptive coping on the contribution of autonomy to internet addiction (Figure 2). Autonomy significantly affected maladaptive coping ($\beta=-0.38$, $p=0.001$) (pathway 1). Maladaptive coping was associated with internet addiction ($\beta=0.70$, $p=0.001$) (pathway 2). Autonomy also predicted internet addiction ($\beta = -0.732$, $p=0.001$) (pathway 3). However, when

maladaptive coping was added to the model, autonomy was significantly related to internet addiction ($\beta=-0.49$, $p=0.001$). Thus, self-care confidence was a partial mediator in the relationship between autonomy and internet addiction. As the same way, maladaptive coping was founded to partially mediate the relationship between relatedness and internet addiction, as shown in figure 3.

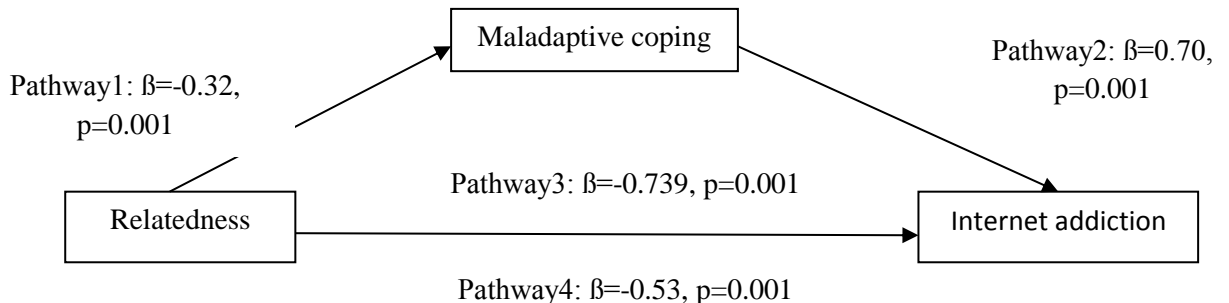


Fig.2. mediation model showing the standardized linear regression coefficient (β) for the mediated pathways in which maladaptive coping mediated the relationship between relatedness and internet addiction.

Conclusion

Internet addiction has negative consequences, including physical, psychological, social and educational problems. In this study, we investigated the relationship between competence, autonomy and relatedness with Internet addiction, as well as the mediating role of coping strategies on these relationships. The results showed that there is a negative and significant relationship between the variables of psychological needs and internet addiction. In other words, the level of internet addiction increases with unsatisfied psychological needs. Also other studies have documented this relationship (11, 25). Literature in supporting our finding demonstrates that unsatisfied psychological needs in real life, one of the important reasons of internet addiction. If the competence, relatedness and autonomy needs are less satisfactory, the level of self-determination of the individual will be less. Individuals feel less competence in life challenges and get less internal motivation (26).

In the second step of the mediator analysis, the maladaptive coping strategy was significantly correlated with Internet addiction. When a person becomes distressed, maladaptive coping strategies may lead to adverse conditions that cause negative emotions. In this case, people spend their time on the Internet to escape the negative emotions (27). In contrast, between adaptive coping strategy and internet addiction was no significant

relationship, so the continuation of the mediator analysis was eliminated. Some studies have reported that those who are addicted to the Internet tend to be less likely to use the problem-focused strategy (28 and 29), the results of this study and other studies (11, 18, and 30) suggest that there is no significant relationship between the adaptive coping strategies and Internet addiction. The possible explanation is that the relationship between these two variables is not strong and may in part relate to the work of other researchers to examine factors such as online incentives or self-control. This explanation shows that, although the maladaptive coping has a direct impact on pathology, the effect of the adaptive coping strategy on pathology is often moderated by individual and environmental factors (31). Another explanation is that it may seek social online support for individuals who increase the risk of internet addiction. Further research is needed to explain these complexities in the present study.

Nature of the cross-sectional was limitation in our study. The design of studies that can demonstrate causal relationships should be considered. Another limitation was self-reporting tools that were used and it was possible that the questionnaires were not accurately answered. In future studies, research can be done to collect data by interviewing.

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