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Mediating Role of Resilience and Self-Efficacy in the Relationship between Cognitive Emotion Regulation Strategies and Psychological Well-Being of Iranian Students

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ABSTRACT

Aims Psychological well-being is a key concept in preventing health problems and increasing life expectancy. Psychological well-being is associated with some positive psychological structures. The purpose of this study was to investigate the mediating role of resilience and self-efficacy in the relationship between cognitive emotion regulation and the psychological well-being of Iranian students.

Materials & Methods In this cross-sectional descriptive study, 285 students (142 men and 143 women) were selected by multistage sampling method from Zanjan University, Zanjan, Iran in the academic year of 2017-2018. Data were collected using psychological well-being, resilience, self-efficacy, and cognitive-emotional regulation questionnaires. Data were analyzed by LISREL 8.8 and SPSS-20 software using Pearson correlation coefficient and structural equation modeling (SEM).

Findings Psychological well-being had a direct relation with resilience, self-efficacy, and catastrophizing strategy. Cognitive emotion regulation strategies showed a direct relationship with resilience and self-efficacy and finally, resilience, and self-efficacy in the relationship between cognitive emotional regulation and psychological well-being strategies had a complete mediating role and incomplete mediating role, respectively.

Conclusion Resilience and self-efficacy play a mediating role in the relationship between psychological well-being and cognitive emotion regulation strategies in Iranian students.

Keywords Cognitive Emotion Regulation; Resilience; Self-Efficacy; Psychological Well-Being ; Students

CITATION LINKS

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Introduction

Psychological well-being is a multidimensional construct consisting of autonomy, environmental domination, personal growth, positive relationships with one another, goal orientation in life, and self-acceptance [1]. Psychological well-being is a key concept in preventing health problems and increasing life expectancy [2]. It is a psychological aspect of quality of life defined as the perception of individuals from living in the field of emotional behaviors, psychological functions, and mental health dimensions. It consists of two parts: 1) a cognitive judgment about how people are making progress in their lives and 2) the level of pleasant experiences [3]. Psychological well-being is associated with some positive psychological structures that one of them is resilience [4]. Resilience as dynamic processes help a person to respond appropriately under difficult circumstances [5], while others define it as a personal quality that helps the person to overcome difficulties [6]. People who are more resilient in difficult situations can better deal with threatening conditions, deal well with stress, and have a higher ability to respond to life stress [7]. Previous studies have shown that resilience as a personality trait influences psychological well-being of an individual [8, 9]. Additionally, resilient people can well recover from daily stresses [10]. Therefore, resilience is seen as one of the most important predictors of psychological well-being [11, 12].

The self-efficacy of a person's beliefs about his ability to plan and act leads to specific results [13]. Low self-efficacy leads to negative emotions such as anxiety, depression, helplessness, and weakening of academic performance [14]. Researchers have shown that self-efficacy can lead to resilience in a person [15]. Individuals with high levels of self-efficacy typically have higher resilience and, consequently, a higher ability to manage difficult condition [16]. Student self-efficacy had a significant positive correlation with the six main factors of psychological well-being [17].

Cognitive emotion regulation is an adaptive strategy. Since this strategy directly affects assessments, individuals can employ it to change their emotional response to stressful events to improve performance [18]. Researches have shown the positive re-focusing and positive reappraisal are direct predicators strategies, but self-blame strategies are a reverse predictor strategies of public health [19]. Studies showed that adaptive strategies of cognitive emotional regulation including acceptance, positive refocusing, refocusing on planning, and positive reappraisal have a more significant correlation with resilience, while incompatible strategies include self-blame, rumination, catastrophizing, and others-blame have a negative relationship with resilience [20]. Meule *et al*. believe that positive strategies of cognitive emotion regulation can be improved by improving perceived mental capacity and increasing individual perception and positive self-awareness [21]. On the other hand, the results of some studies showed that the psychological well-being of Malaysian students is significantly predicted by planning, putting into perspective, blaming others and in this regard, these strategies were able to explain 41% of the variance of psychological well-being [22].

Based on the research background, psychological well-being is one of the variables influenced by structures such as cognitive emotional regulation strategies. Considering the findings of previous studies, the major weakness of them is not examining the mediatory role of resilience and self-efficacy in the relationship between psychological well-being and cognitive emotion regulation in students. So, one of the innovative aspects of this research is the design of resilience and self-efficacy as a mediator variable and to examine other variables associated with it. Moreover, no research has been done about the relationship between these variables in the structural model in the Iranian students. Instead, many of these variables have been investigated separately in previous researches without any relation to other variables. This matter prevents the formation of valid findings and the creation of coherent information in the minds of researchers. These weaknesses themselves can be the strength of this study because we will come up with an integrated model to examine the relationship between these components.

Hence, the purpose of this study was to investigate the mediating role of resilience and self-efficacy in the relationship between cognitive emotion regulation and the psychological well-being of Iranian students.

Materials and Methods

Based on its purpose, the present research is of the applied research type and according to the method of data collection is a descriptive research, and structural equation modeling (SEM), in particular. SEM is a multi-variable analysis method that is from multivariate regression family and, more precisely, is a general linear model expansion that allows the researcher to test a set of regression equations simultaneously [23]. In this study, cognitive emotion regulation was considered as a predictor variable, resilience and self-efficacy as the mediator variables, and psychological well-being as the criterion variable, respectively. The statistical population of the study included students (bachelor, graduate, and Ph.D.) from Zanjan University in the academic year of 2017-2018. This population has been reported by about 10,000 people. Finally, 300 students were selected through multistage sampling method.

The following questionnaires were used for data collection:

1- Psychological well-being scale: The short version (18 items) of the Reef Psychological Well-

being Scale, was designed by Ryff in 1989, and revised in 2002. This scale has 18 items and has 6 dimensions (i.e., self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth). Items range in the Likert Spectrum from 7 points out of 1 (totally disagree) to 6 (I fully agree) where the higher scores represent higher psychological well-being [1]. The reliability of this tool in the present study was obtained by Cronbach's alpha (95%), which indicates its proper validity.

2- Resilience scale: This scale has been designed by Connor-Davidson to measure the resilience of adults and has 25 questions that measure different resilience dimensions including individual ability, resistance to negative influences, positive acceptance of change, trust in individual instincts, social support and social security, spiritual faith, and pragmatic approach. The internal consistency of this scale using the Cronbach's alpha coefficient is 0.89. In this scale, for each item, a five-choice grading range (from totally incorrect to always correct) is considered. The minimum and maximum resilience scores of the subject in this scale are 0 and 100, respectively [6].

3- Self-efficacy scale: Self-efficiency scale is a 10-item tool created in by Schouetz and Jeroussalem to assess self-efficiency among adults. The questionnaire identifies individuals' perceptions of their ability to cope and adapt to life. Items in the questionnaire in the Likert spectrum are 4 points from 1 (completely wrong) to 4 (perfectly correct). In the study for internal consistency, the reported Cronbach's alpha was 0.83 [24].

4- Cognitive emotion regulation strategies: This tool is a multi-dimensional questionnaire and a self-report that created in by Garnowski, Craig, and Spino-van. The cognitive emotion regulation strategies questionnaire includes 36 items and has a special form for adults and children. The cognitive emotion regulation questionnaire assesses the cognitive strategy of self-blame, acceptance, rumination, positive re-focusing, re-focus on planning, positive reappraisal, putting into perceptiveness, catastrophizing and others-blame. Cronbach's alpha coefficient for the above dimensions has been reported in the range of 0.86 to 0.83. The items in the questionnaire are in the 5-point Likert spectrum (from never to always) and all four questions evaluate one factor [25].

To collect the needed data, after visiting Zanjan University and attending its colleges, students were asked to complete the questionnaire according to the instructions given in the questionnaire. A total of 15 questionnaires were removed due to a defect in data analysis. Finally, 285 people (142 men and 143 women) were analyzed in this study. Before filling the questionnaires, the participants initially agreed to their participation in the research. Also, they were provided the necessary explanations about the research purpose and the confidentiality of the information.

The data were analyzed by calculating the descriptive statistics using SPSS 20 and, next, the data were analyzed with structural equations modeling with LISREL 8.8. To test the research hypotheses and determine the role of each of the predictive variables in the variability of psychological well-being, the Pearson correlation coefficient and path analysis were used.

Findings

The total number of participants in the study was 285 students including 142 males (49.9%) and 142 women (50.1%). The average age of participants was 24.0±4.5 years old. Most of the participants were bachelor and single (Table 1).

Table 1) Distribution of absolute and relative frequency of demographic variables in students (N=285)

Variables	No.	%
Gender		
Female	143	50.1
Male	142	49.9
Education level		
BA	153	53.7
MA	103	36.1
PhD	29	10.2
Marital status		
Single	251	88.1
Married	34	11.9

Table 2) The mean scores of research variables and the matrix of correlation coefficients between them

Variables	1	2	3	4	5	6	7	8	9	10	11
1- Self-blame	1										
2- Acceptance	0.234**	1									
3- Rumination	0.264**	0.277**	1								
4- Positive refocusing	-0.322**	-0.072	-0.176**	1							
5- Refocus on planning	-0.277**	-0.058	-0.089	0.556**	1						
6- Positive reappraisal	-0.174**	-0.053	-2.149*	0.439**	0.619**	1					
7- Putting into perspective	-0.098	0.025	-0.113	0.334**	0.314**	0.490**	1				
8- Catastrophizing	0.238**	0.275**	0.152*	-0.291**	-0.246**	-0.183**	-0.069	1			
9- Other-blame	0.120*	0.093	0.098	-0.131*	-0.145*	-0.170**	-0.049	0.485**	1		
10- Resilience	-0.346**	-0.016	-0.164**	0.508**	0.592**	0.511**	0.273**	-0.245**	-0.310**	1	
11- Self-efficacy	-0.409**	-0.011	-0.305**	0.465**	0.584**	0.479**	0.275**	-0.112	-0.198**	0.763**	1
12- Psychological well-being	-0.304**	-0.019**	-0.097	0.448**	0.442**	0.297**	0.108**	-0.360**	-0.359**	0.672**	0.575**

p<0.05*; p<0.01**

Table 3) Indices for assessing the relationships between variables

Independent variables	Dependent variables	Direct effect		Indirect effect		Total effect	
		Standard coefficient	t	Standard Coefficient	t	Standard Coefficient	t
Self- efficacy	self- blame	-0.13	-3.40	-0.09	-3.07	-0.22	-4.66
	Rumination	-0.18	-4.84	-	-	-0.18	-4.84
	positive refocusing	-	-	0.11	3.28	0.11	3.28
	refocus on planning	0.21	4.92	0.19	4.75	0.40	7.58
	positive reappraisal	-	-	0.11	3.11	0.11	3.11
	Catastrophizing	0.15	3.91	-	-	0.15	3.91
	other-blame	-	-	-0.12	-4.13	-0.12	-4.13
Resilience	self- blame	-0.15	-3.15	-	-	-0.15	-3.15
	positive refocusing	0.18	3.39	-	-	0.18	3.39
	refocus on planning	0.31	5.08	-	-	0.31	5.08
	positive reappraisal	0.18	3.20	-	-	0.18	3.20
	other-blame	-0.19	-4.35	-	-	-0.19	-4.35
Psychological well-being	self- blame	-	-	-0.11	-3.73	-0.11	-3.73
	Rumination	-	-	-0.03	-2.48	-0.03	-2.48
	positive refocusing	-	-	0.11	3.27	0.11	3.27
	refocus on planning	-	-	0.22	5.51	0.22	5.51
	positive reappraisal	-	-	0.11	3.10	0.11	3.10
	Catastrophizing	-0.22	-4.98	0.03	2.32	-0.19	-4.33
	other-blame	-	-	-0.11	-4.11	-0.11	-4.11
	self- efficacy	0.19	2.89	-	-	0.19	2.89
	Resilience	0.47	6.97	0.11	-	0.58	12.55

The correlations between psychological well-being as a dependent variable with self-blame (-0.304), acceptance (-0.019), rumination (-0.097), positive re-focusing (0.448), re-focus on planning (0.442), positive reappraisal (0.297), putting into perceptive of (0.108), catastrophizing (-0.360), other-blame (-0.359), resilience (0.672), and self-efficacy (0.575) were significant. Only the correlation between rumination and psychological well-being was not significant and the other correlations were significant ($p<0.01$; Table 2).

Regarding the correction of the initial model and the elimination of non-significant relationships, all the mentioned relationships were significant ($p<0.05$). There was a significant positive correlation between psychological well-being as a dependent variable with resilience and self-efficacy, suggesting that with the increase in resilience and self-efficacy, psychological well-being is also improved (Table 3).

To confirm the mediation of a variable between two variables, the predictor variable with mediator and mediator variable with the criterion variable should also have significant direct effect; however, if the predictor variable also has a significant relationship with the criterion variable, the mediator is incomplete and, if not significant, it is a complete mediator. Therefore, self-efficacy had complete mediator role between self-blame with psychological well-being, rumination with psychological well-being, re-focusing with psychological well-being, and catastrophizing with psychological well-being. Meanwhile, the self-efficacy had an incomplete mediator role between catastrophizing with psychological well-being. In addition, the resilience between the strategies of self-blame with psychological well-being, re-focusing with psychological well-being, re-focus on planning with psychological well-being, positive reappraisal with psychological well-being and others-blame with psychological well-being had a complete mediatory role.

Moreover, there was a significant positive correlation between self-efficacy with catastrophizing strategy and positive re-focus, but self-efficacy had a significant negative direct relation with self-blame strategy and rumination. In fact, with increasing the use of catastrophic and positive re-focus strategies, self-efficacy increases while with increasing use of self-blame and rumination strategies, self-efficacy decreases.

Finally, there was a significant positive direct correlation between positive refocusing, re-focusing on planning, and positive reappraisal with resilience and negative direct correlation between self-blame and others-blame strategies with resilience. In fact, by increasing the use of positive refocusing, re-focusing on planning and positive reappraisal, resilience increases while increasing the use of self-blame and other-blame strategies, resilience decreases.

Table 4) General fit assessment indices of model

Indices	Size	Limit required	Status
X^2	-	20.27	-
df	-	11	-
P	>0.05	0.04	Good
X^2/df	<3	0.65	Good
RMSEA	>0.05	0.05	Good
GFI	>0.90	0.99	Good
AGFI	>0.90	0.93	Good
TLI	>0.90	0.98	Good
NFI	>0.90	0.99	Good
CFI	>0.90	0.99	Good

In order to evaluate the overall quality of the model, the general fit assessment indices were used. Each of the eight examined indicators was in the optimal situation. As a general assessment of the fitness status of the path model, we can conclude that the fit of the structural model is desirable (Table 4; Figure 1).

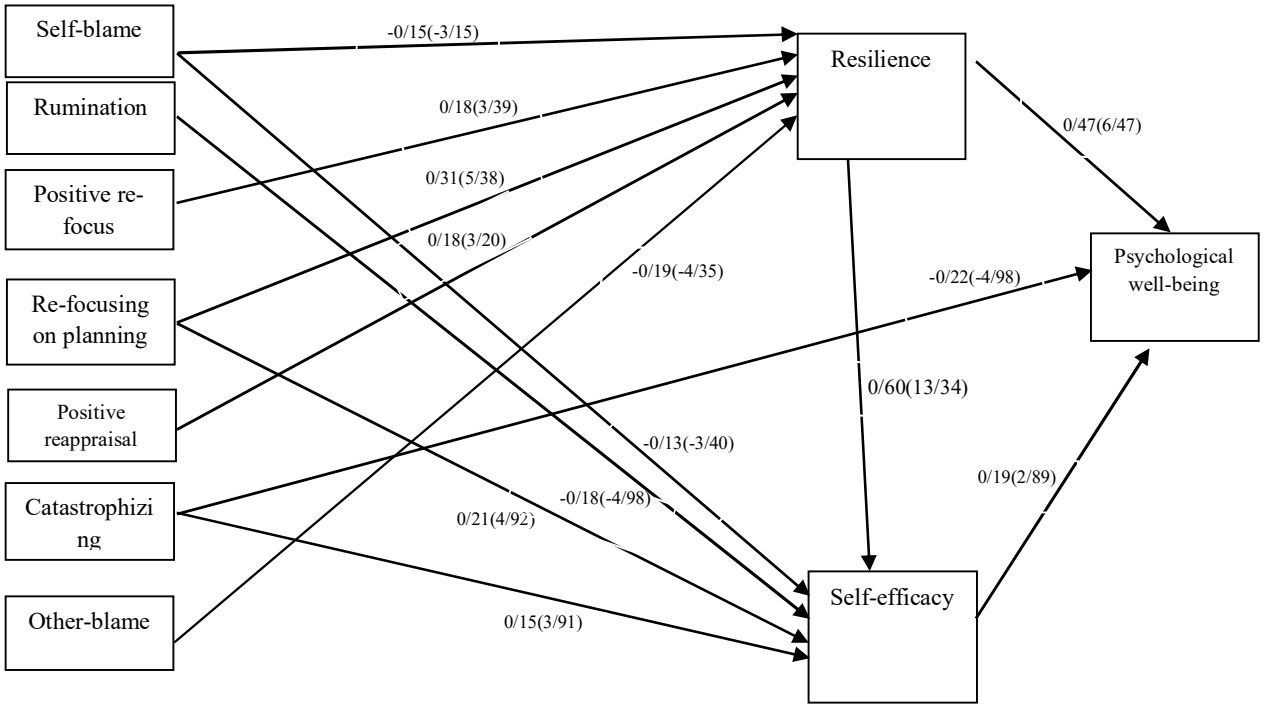

Fig 1) Model of the mediating role of resilience and self-efficacy in the relationship between cognitive emotion regulation and psychological well-being of Iranian students

Discussion

According to the results, there is a significant positive relationship between psychological well-being as a dependent variable with resilience as a mediator variable. So, it is inferred that with increasing the resilience in students, their psychological well-being also increases. The findings of the present study are consistent with those of some other works [26-29]. To explain the obtained results, there is a theory that explain resilience with including elements such as positive emotions will make coping more effective in confronting psychological stress [30]. In this regard, positive affirmation of affections is one of the most important components of positive psychology. Whether somebody has ability to acceptance and positive transmission of emotions, he will have a higher mental health and thus will be more resilient against the problems and experience a higher psychological well-being. Hence, it is clear that resilience in students is an important factor in creating psychological well-being.

According to the results, there is a significant positive relationship between psychological well-being as a dependent variable with self-efficacy as a mediator variable. In other words, with increasing self-efficacy in students, their psychological well-being increases, as well. The findings of the present study are consistent with those of some other studies [31-33]. To explain the results, we should first define the self-efficacy. According to this definition, efficient people are more confident in their ability to achieve their goals and are healthier, more successful, and more efficient. This definition is probably a good explanation for the positive relationship between self-efficacy and psychological well-being. According to the results obtained in this study, individuals who consider themselves to be effective in managing the difficulties and problems of life will experience a higher level of satisfaction, which is often defined as a psychological well-being. Besides, high self-efficacy leads to a kind of relaxation when confronted with difficult tasks and problems. In fact, beliefs about self-efficacy express and determine the level at which a person completes a difficult task [34]. Therefore, self-efficacy is an important source for achieving psychological well-being.

Based on the results, self-efficacy has a complete mediatory role between self-blame, rumination, positive refocusing, and catastrophizing strategies with psychological well-being. Meanwhile, the self-efficacy between catastrophizing strategy and psychological well-being has an incomplete mediating role. The findings of this study are consistent with the results of other studies [13, 31, 35, 36]. To explain the results, it should be noted that self-efficacy, by definition, reflects the ability of an individual to organize and execute an action. The perception of a position as a threat depends on the interpretation of individuals from that position. So, it can be concluded that the self-efficacy or perception

that individuals possess of their ability transiently lead to the regulation of cognitive or positive assessments of their environment or work [36], which affects the general health of individuals and leads to greater well-being.

Furthermore, the resilience between positive emotional regulation strategies such as positive refocusing, re-focusing on planning, and positive reappraisal with psychological well-being and also between negative strategies of emotion regulation such as others-blame and psychological well-being has a complete mediating role. The findings of the present study are consistent with the findings of other studies [18, 37-39]. In explaining this finding, it can be stated that using this type of emotion regulation strategies may reduce the negative emotions and, as a result, improve cognitive and emotional performance and increase resilience [18]. Therefore, considering the nature of resilience, it can be said that resilient individuals have the skills to think and act adeptly under stressful conditions and resilient people are also generally able to easily escape from stressful life events [40]. In other words, with the promotion of resilience, a person can resist and overcome the factors that cause anxiety. Hence, resilience plays an effective role in the relationship between strategies for emotional regulation and psychological well-being.

Based on the results, there was a significant positive direct correlation between positive refocusing strategies with self-efficacy and a significant negative correlation was found between self-blame and rumination strategies with self-efficacy. In this regard, the results of some studies [41-43] can be used to explain these results. Cognitive emotion as a cognitive and emotional ability can be attributed to the mental, biological, and motivational processes that help to establish a person's relationship with the environment, equip him with efficient and effective responses to situations, and thus improve the individual's sense of efficiency. In fact, the cognitive emotion regulation can enhance the sense of individual control over affairs and enhance the person's belief in managing situations, while the use of negative emotional strategies through the use of ineffective responses and by influencing cognitive and emotional dissonance leads to reduced self-efficacy among people [44].

Finally, positive cognitive emotional strategies such as positive refocusing, re-focuses on planning, and positive reappraisal have significant positive correlations with resilience. Inverse correlations were found between negative strategies of cognitive emotion regulation such as self-blame and others-blame strategies with resilience. The results of the research are consistent with the findings of other studies [37, 45, 46]. In order to explain the findings of the present study, we can point that the basis of resilience is rooted in positive thinking and how people think about causes [47]. Based on this concept, people who use positive cognitive emotion regulation strategies are those who use optimistic explanation style and attribute the unfortunate event to external, unstable and controllable causes. Such people do not blame themselves for their own problems and thus are more tolerant of problems and difficulties. In explaining the significant negative relationship between cognitive emotional strategies with resilience, it can be stated that using these strategies will allow people with a different perspective to evaluate events and focus more on the negative dimensions and aspects of that event. As a result, they experience more discomfort and stress and cannot cope with this unfortunate event.

Considering what discussed above, one of the research limitations is the collection of data using self-report tools that can reduce the internal validity of the research. Another limitation of the research is its spatial domain; since the research has only been carried out among students at the University of Zanjan, the generalizations of this research should be done with caution. Another limitation is the use of the cross-sectional method in this research, which itself leads to difficulty in interpretations. Therefore, considering the limitations, it is recommended to use more reliable tools in future researches to increase the validity of the research. It is also suggested that future researches be conducted in other societies in order to maximize the ability to generalize the results. Furthermore, applying the longitudinal method in future studies would lead to stronger and more reliable results.

Despite the limitations, the present study examined the role of variables such as resilience, self-efficacy, and psychological well-being include some implications in the field of positive psychology. Psychologists and counselors need to consider the role of resilience and having psychological training programs, including the concepts of resilience and self-efficacy in order to maximize psychological well-being. In addition, since flexibility is a learned attribute [48], counseling programs that seek to increase resilience can be effective in improving psychological well-being.

Conclusion

Resilience and self-efficacy play a mediating role in the relationship between psychological well-being and cognitive emotion regulation strategies in Iranian students.

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