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PREDICTION OF SELF-EFFICACY BASED ON THE COGNITIVE EMOTION REGULATION STRATEGIES IN PATIENTS WITH EPILEPSY

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ABSTRACT

This study aims at predicting the self-efficacy based on the cognitive emotion regulation strategies in patients with epilepsy. The statistical population of this study consists of all epilepsy patients referred to the Iranian Epilepsy Society in Tehran Province. The sample size is equal to seventy 20-35 year-old male and female patients with epilepsy (grand mal and psychomotor) referred to Iranian Epilepsy Society from March 2015 to the late June 2015 and selected through full enumeration sampling. The applied tools of this research are the questionnaire of cognitive emotion regulation strategies by Garnefski et al (2002) and the Self-Efficacy Questionnaire by Sherer and Maddux (1982). The descriptive statistics, and canonical analysis and regression analysis in compliance with the relevant assumptions are utilized for data analysis. The data is analyzed through SPSS version 22. The obtained results indicate that there is a correlation between the cognitive emotion regulation strategies with self-efficacy in patients with epilepsy. Furthermore, it is found that the cognitive emotion regulation strategies are more correlated with patients' self-efficacy and can predict it. The dimensions of cognitive emotion regulation strategies including the rumination, blaming the others, negative cognitive regulation, self-blame and acceptance can predict the self-efficacy in patients with epilepsy. On the other hand, the rumination has the greatest impact on the self-efficacy in patients.

Keywords: Self-efficacy, cognitive emotion regulation strategies, epilepsy

INTRODUCTION

The prevention and control of chronic diseases is one of the major health problems in most of the countries and their adverse effects on the patients' daily lives are enhanced due to the gradual development of chronic diseases. The impact of chronic diseases on the person, family and society was ignored in the past, but now this problem is increasing taken into account. These people need the further attention beyond the medical consideration in addition to other sources for help and treatment [14].

The Epilepsy is among these diseases and is in fact a debilitating condition which has adverse effects on the individual's life and his family, and its uncontrolled seizures can lead to stress and degenerative irreversible changes in brain [15].

The evidence suggests that the humans are born with a set of early emotional responses and despite the fact that these emotional responses are the same in all cultures and societies and occur in response to internal and external stimuli, the people learn different strategies in response to stimuli. The emotional responses provide the important information about the individual experience in communication with others. Therefore, the emotion regulation is an important factor in determining the health and successful performance in social interactions [5].

The cognitive emotion regulation strategies are among the strategies which play the essential role in emotion regulation. As the result of these strategies, the emotion arousing input data is inhibited by person especially when a person encounters a negative emotional experience or threatening event [9].

The self-efficacy concept is derived from Bandura's social cognitive theory which refers to individual beliefs or judgments about the self-ability to perform the duties and responsibilities. According to this theory, the people affect their motivation and behavior in a three-way causality system (behavior, environment and individual) [3].

According to the definition by Bandura, the self-efficacy is a productive power by which the cognitive, social, emotional and behavior human skills are effectively organized to achieve different objectives. In his view, the individual previous knowledge, skills and achievements are not the appropriate predictors for his future performance, but the human belief about his abilities to do them affects on how effective his performance is [3].

The self-efficacy believes affect the physiological responses to stress including the immune system of body and play the

major role in the activity rate of Katgvlatyn from the family of effective neurotransmitter in stress management and threat perception. The self-efficacy beliefs affect how to deal and cope with the frustrating and stressful situations in achievement of objectives. A research on the way of dealing with the abortion in women indicates the importance of self-efficacy beliefs on the way of dealing with stressful events. The results approve this hypothesis under which the self-efficacy plays the essential role in adjustment after the abortion [2].

According to what is mentioned, the purpose of this study is to predict the self-efficacy based on the cognitive emotion regulation strategies in patients with epilepsy.

MATERIALS AND METHODS

The statistical population of this study consists of all epilepsy patients referred to the Iranian Epilepsy Society in Tehran Province. The sample size is equal to seventy 20-35 year-old male and female patients with epilepsy (grand mal and psychomotor) referred to Iranian Epilepsy Society from March 2015 to the late June 2015 and selected through full enumeration sampling. The applied tools of this research are the questionnaire of cognitive emotion regulation strategies by Garnefski et al (2002) and the Self-Efficacy Questionnaire

by Sherer and Maddux (1982). The descriptive statistics, and canonical analysis and regression analysis in compliance with the relevant assumptions are utilized for data analysis. The data is analyzed through SPSS version 22.

RESULTS

Single-sample Kolmogorov-Smirnov test (data normality test)

According to the results of table, all criterion and predictive variables have normal distribution (P>0.05).

Multicollinearity effect

According to the table, since the tolerance index is close to 1, none of the predictive variables have collinear effect with other predictive variables. Furthermore, as the value of VIF index is less than 2, there is no collinear effect between none of the predictive variables.

- **Correlation matrix between the research variables**

Since the regression is based on the variance-covariance matrix or correlation between the variables, Table 3 reports the correlation matrix between the research variables.

According to the results of table, there is a significant positive correlation between the cognitive emotion regulation strategies with self-efficacy at the confidence level of 99% (p<0.01).

- **Hypothesis test**

The cognitive emotion regulation strategies predict the self-efficacy in patients with epilepsy.

As shown in the table 4, the significance level is less than 0.05 indicating the significance of regression model; in other words, at least one of the predictive variables has significant impact on the criterion variable.

In this study, the coefficient of determination is equal to 0.81 indicating that seven components of cognitive emotion regulation strategies can predict 81% of self-efficacy and the remaining 19 percent is related to the prediction error.

According to the results of table 5, except for the catastrophic consideration and acceptance, all factors of cognitive emotion regulation strategies have significant impact on the self-efficacy at the level of 5%. The positive coefficients of positive refocus/ planning and positive assessment/ wider vision in fact indicate that the increase in these factors will increase the self-efficacy. However, the other negative coefficients suggest that the increase in these factors reduces the self-efficacy.

Table 1: Results of Kolmogorov-Smirnov Test for evaluating the normality of distribution

Variables	Z statistics	Significance level
Self-efficacy	1.163	0.134
Cognitive emotion regulation strategies	0.628	0.825
Positive cognitive regulation	0.699	0.713
Negative cognitive regulation	0.733	0.656
Positive refocus/ planning	0.729	0.662
Positive assessment/ wider vision	0.697	0.715
Self-blame	0.837	0.486
Blaming others	1.096	0.181
Rumination	0.825	0.505
Catastrophic consideration	1.135	0.152
Acceptance	0.931	0.351

Table 2: Variance tolerance index and variance inflation factor (VIF) for evaluating the lack of collinearity effect between the independent variable

Multicollinearity indices		
Predictive variables	Tolerance	VIF
Positive refocus/ planning	0.59	1.98
Positive assessment/ wider vision	0.55	1.79
Self-blame	0.78	1.27
Blaming others	0.53	1.97
Rumination	0.59	1.66
Catastrophic consideration	0.51	1.95
Acceptance	0.61	1.99

Table 3: Correlation matrix of research variables

	Emotion regulation	Perceived stress	Self-efficacy
Emotion regulation strategies	1		
Self-efficacy	0.69**	-0.35**	1

Table 4: Estimating the parameters of model in regression analysis for self-efficacy based on the cognitive emotion regulation strategies

Model	Sum of squares	Degrees of freedom	Mean squares	F	Multiple coefficient	Coefficient of determination	Adjusted coefficient of determination	Significance level
Regression	13042.68	7	1863.24	38.44	0.90	0.81	0.79	0.001
Residual	3005.26	62	48.47					
Total	16047.94	69						

Table 5: Standard and non-standard coefficients and t-statistics of variables included in regression equation

Predictive variable	Regression coefficients		t-statistic	Significance level
	Non-standardized	Standardized		
Constant value	9.79		2.79	0.007
Positive refocus/ planning	0.73	0.45	2.99	0.004
Positive assessment/ wider vision	1.21	0.49	3.07	0.003
Self-blame	-1.02	-0.21	-2.13	0.03
Blaming others	-2.28	-0.47	-3.75	0.001
Rumination	-1.11	-0.41	-3.38	0.001
Catastrophic consideration	-0.81	-0.22	-1.54	0.12
Acceptance	0.01	0.01	0.1	0.92

CONCLUSION

According to the results of research hypothesis, "the cognitive emotion regulation strategies and its dimensions predict the self- efficacy in patients with epilepsy", it can be concluded that the dimensions of cognitive emotion regulation strategies predict the self-efficacy in patients with epilepsy. In other words, the dimensions of cognitive emotion regulation strategies including the rumination, blaming others, negative cognitive regulation, self-blame and acceptance can predict the self-efficacy in patients with epilepsy, while, the positive cognitive regulation variables, positive refocus, positive assessment, and catastrophic consideration cannot predict the self-efficacy in patients. On the other hand, the rumination has the greatest impact on patients' self-efficacy and after that the blaming others has the highest effect. In this regard, the results of research by Haji [10],Karimnejad et al [12],Zare et al [16],Eyvazi [6],Javaheri et al [11],Zhou et al[17],Allen et al [1],and Fukui et al [8],are in line with the results of this study because they have found that there is a significant correlation between the self-efficacy and dimensions of cognitive emotion regulation strategies. Furthermore, the results of research by Ziaei [18],Kim and Yoo [13],Becker et al. [4],and Folkman et al[7],are inconsistent with the results of first sub-hypothesis and indicate that there is no correlation between the self-efficacy and dimensions of cognitive emotion regulation strategies.

According to the comparison of research hypothesis result with results of previous studies, the dimensions of cognitive emotion regulation strategies such as the rumination, blaming others, the negative cognitive regulation, self-blame and acceptance can predict the self-efficacy. In fact, the rumination reduces the self-

efficacy in patients. The cognitive emotion regulation strategies can reduce the rumination resulting in enhanced self-efficacy because the rumination creates the mental workload about the various aspects of event, and thus the feelings and thoughts created by adverse conditions are constantly reviewed by person. This component has the greatest impact on the self-efficacy, and thus the mental workload has a significant impact on the self-efficacy; the more the patient's mental workload, the less his level of ability and efficiency in dealing with the symptoms of disease. Therefore, due to the regulation strategies in the field of rumination, the person does less mental workload and instead paves the way for reducing the symptoms of disease by relying on his own efforts, ambition and efficiency. Furthermore, blaming others, under which a person blames the others for occurrence of a situation in dealing with an adverse situation; the negative cognitive regulation, which includes the self-blame, blaming others, rumination, catastrophic consideration and acceptance; the self-blame, under which a person blames himself for created circumstances while facing the mishaps; and the acceptance, which indicates the way of coping with stressful situations and mishaps, all are able to predict the self-efficacy in patients.

Therefore, the self-efficacy will be enhanced if the rates of rumination, blaming others, negative cognitive regulation and self-blame are reduced and the acceptance increased.

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